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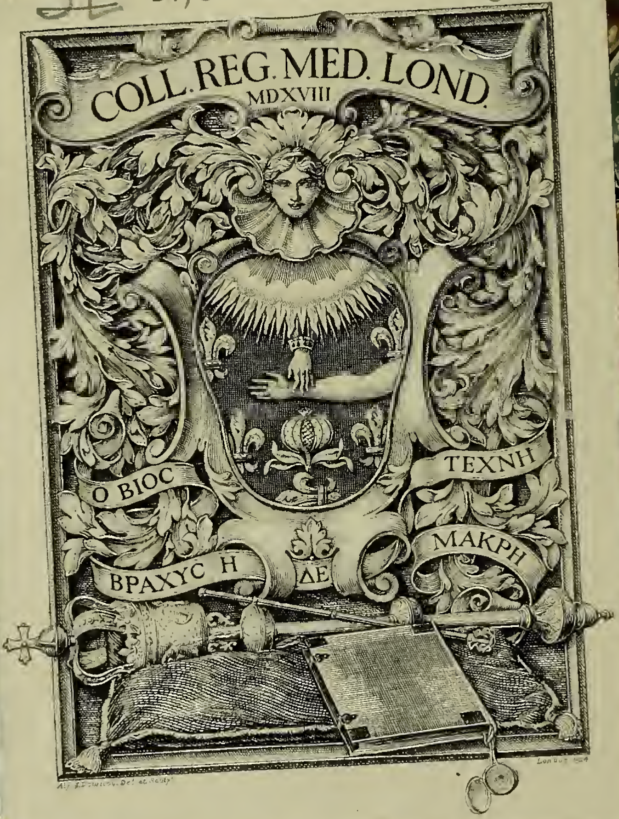

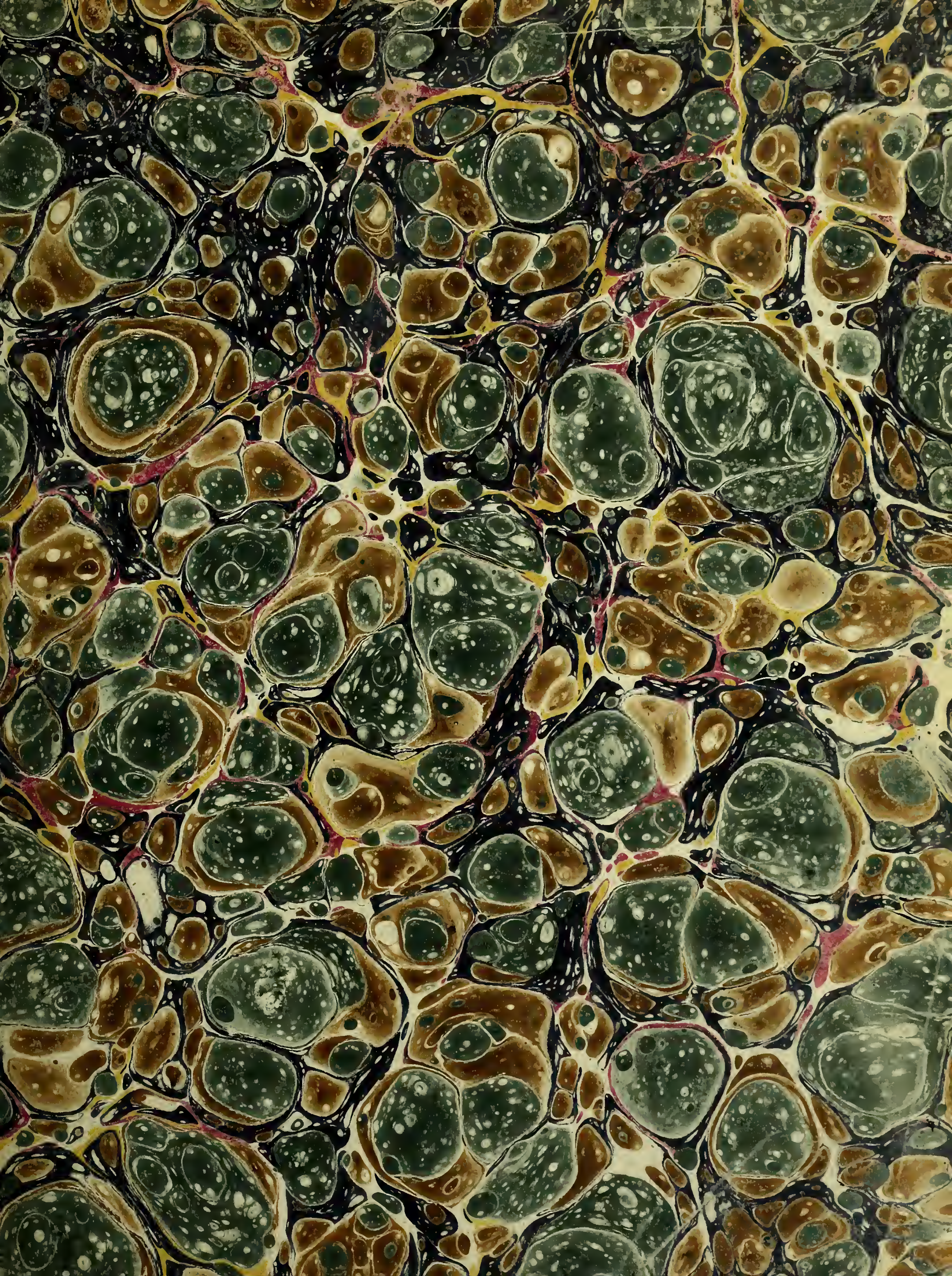

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THE

CYCLOPÆDIA;

OR,

Universal Dictionary

OF

ARTS, SCIENCES, AND LITERATURE.

VOL. V.

Printed by A. Strahan,
New-Street-Square, London.

THE

CYCLOPÆDIA;

OR,

UNIVERSAL DICTIONARY

OF

Arts, Sciences, and Literature.

BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.

COLLEGE OF PHYSICIANS

ILLUSTRATED WITH NUMEROUS ENGRAVINGS,

BY THE MOST DISTINGUISHED ARTISTS.

IN THIRTY-NINE VOLUMES.

VOL. V.

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CYCLOPÆDIA:

OR, A NEW

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES.

(SECOND EDITION.)

BOOK-KEEPING.

BOOK-KEEPING is the art of recording mercantile tranſactions in a regular and ſyſtematic manner.

A merchant's books ſhould exhibit the true ſtate of his affairs. They ſhould ſhew the particular ſucceſs of each tranſaction, as well as the general reſult of the whole; and ſhould be ſo arranged as to afford correct and ready information upon every ſubject for which they may be conſulted.

Books may be kept either by ſingle or double entry.

Single Entry is chiefly uſed in retail buſineſs; it is the moſt conciſe and ſimple method of book-keeping; but not the moſt perfect, being defective in ſome eſſential particulars.

Double Entry is generally uſed in wholeſale and mercantile affairs; whence it is ſometimes called *Merchants' Accounts.* This method is univerſally preferred in extenſive commerce, being the moſt comprehenſive and ſyſtematic in its principles, and the moſt certain in its concluſions. Book-keeping, as a ſcience, is therefore underſtood to mean the method by double entry; and in this ſenſe we ſhall uſe the term, unleſs when there is occaſion to diſtinguiſh double from ſingle entry.

BOOK-KEEPING, *Hiſtory of.* The origin of book-keeping, like that of moſt other uſeful arts, is involved in great obſcurity. It is generally ſuppoſed to have been firſt practiſed at Venice in the fifteenth century, when that city was the grand emporium of Europe. Some authors, however, think that double entry was known to the ancients, and revived only in Italy, with the revival of commerce; and certain quotations are adduced in ſupport of this opinion. Thus Pliny, in ſpeaking of fortune, ſays, "Huic omnia expenſa; huic omnia feruntur accepta; et in tota ratione mortalium ſola utramque paginam facit," lib. ii. cap. 7.

Similar paſſages may be likewiſe quoted from others, which ſhew, that the ancients entered the receipts and payments of money on oppoſite pages, in the way of debtor and creditor; but nothing beyond ſingle entry can be inferred from this practice; nor is it probable that any thing more was wanted in the rude and ſimple ſtate of ancient commerce. Inſurances, bills of exchange, and other modern improvements required, and, in all probability, produced correſponding improvements in the mode of keeping accounts; but the circumſtance which places the queſtion in the cleareſt light is, that the terms of this art cannot be traced to any ancient language, but ſeem immediately derived from the Italian, as adopted in the other languages of Europe. When Snellius tranſlated Stevin's book-keeping into Latin, he was obliged to invent or adopt new terms. Thus he calls book-keeping, *apologiſtica;* the ledger, *codex accepti expenſique;* the waſte-book, *liber deletitius;* the ſtock account, *ſors;* and the balance-account, *epilogiſmus.*

From the principles of book-keeping, conjectures may be formed of its origin. The double purpoſe of a bill of exchange, and the manner of recording the ſame, might have naturally ſuggeſted the idea of double entry. The principle might have been even deduced from the axioms of Euclid, or the properties of an algebraic equation; and it is remarkable that the firſt European author on algebra, Lucas de Burgo, wrote the firſt treatiſe on book-keeping, which is thus deſcribed by de la Porte: "Vers l'an. 1495, Frère Luc Italien de nation, en fit imprimer un traité en Italien (c'eſt le plus ancien auteur que j'aie vû ſur cette matière), il fut ſuivi par pluſieurs auteurs du même Pays, & par des François, qui au commencement du ſiecle ſuivant nous en ont donné des Méthodes imprimées. Mais l'ordre embarraſſant, & le ſtyle long & embrouillé de ces ouvrages comparés a la nettete & à la briéveté qui ſont en uſage aujourd'hui, font voir combien l'experience a poli & abrégé cette Science." La Science des Negocians et Teneurs de Livres, par M. De la Porte, p. 12. Paris, 1753.

Strahan and Preſton,
New-ſtreet Square, London,

La Porte's remarks on the want of method and arrangement in the old ſyſtems of book-keeping, will, in ſome meaſure, apply to his own, though it ſtill continues a favourite work in France. We ſhall, however, take no further notice here of foreign publications, but confine our obſervations to thoſe of our own country, where every ſubject connected with commerce ſeems to have been cultivated with the greateſt aſſiduity and ſucceſs.

The firſt treatiſe on book-keeping, in the Engliſh language, of which there is any account, was publiſhed in the year 1543 by Hugh Oldcaſtle, a ſchoolmaſter; and it was re-printed, in 1588, by John Mellis, under the following curious title: "A briefe inſtruction and manner how to keepe bookes of accompts, after the order of debitor and creditor, and as well for proper accompts, partible, &c. by three bookes, named the memoriall, journall, and leager. Newly augmented and ſet forth by John Millis, ſcholemaiſter of London. Imprinted by him at the Signe of the White Beare, nigh Baynard's Caſtle, 1588, 12mo." In his Epiſtle to the Reader, Mellis ſays, "And knowe ye for certaine, that I preſume ne vſurpe not to ſet forth this worke of mine own labour and induſtrie, for truely I am but the reneuer and reuiuer of an auncient old copie printed here in London the 14th of Auguſt 1543." See Ames's Typographical Antiquities, vol. ii. p. 753.

In 1569, a ſyſtem of book-keeping was publiſhed in London by James Peele, who ſays, in his preface, "that he had inſtructed many mercantile people in this art, which had been long practiſed in other countries, though then new in England."

There is no trace of any other work of the kind until the year 1652, when John Collins, an eminent mathematician and accountant, publiſhed a large work, entitled, "An Introduction to Merchants' Accounts," which ſerved long as a ſtandard book on the ſubject.

About the beginning of the following century, ſeveral ſmaller ſyſtems were written, chiefly by Snell, Hatton, Malcolm, Webſter, Miers, and Stevens; but the moſt popular work that had yet appeared, was Mair's "Book-keeping methodized," publiſhed in 1738, which, after paſſing through three editions, was re-printed, with alterations, in 1768, under the new title of "Book-keeping modernized;" and theſe alterations, he ſays, became neceſſary, "in conſequence of the conſtant change and perpetual flux in the forms and faſhions of accountſhip." But it may be obſerved, that if this edition was modelled after the real practice of that time, the forms and arrangements of merchants' accounts muſt have ſince undergone great changes, and manifeſt improvements. In Mair's Book-keeping, however, the principles of double entry are correctly explained; but the rules and examples are too numerous and verboſe for ſchool practice.

From the firſt appearance of this work, to the year 1789, numerous other ſyſtems were publiſhed, better adapted to the purpoſes of teaching the art, though differing but little in arrangement. The moſt generally approved were thoſe of Dodſon, Weſton, Donn, Hutton, Hamilton, Gordon, Dowling, and Jackſon. Tracts were alſo written, within the above period, by Croſby, London, Shortland, Wood, Cooke, Sedger, and Dilworth.

On a review of the foregoing publications, it does not appear that the theory of book-keeping had hitherto kept pace with the improvements of practice. While merchants were conſtantly adopting plans of arrangement, which promoted perſpicuity and correctneſs, and diminiſhed the labour of the counting-houſe; ſchool-maſters, the chief authors on book-keeping, ſeemed only to conſult or imitate each other's works, which had been long conſidered by men of buſineſs as obſolete or impracticable.

A work of a very different deſcription was publiſhed in 1789, by Benjamin Booth, a merchant, who thus obſerves in his preface: "It is ſurpriſing that in a commercial country like this, there ſhould not be a treatiſe on the ſubject (book-keeping), which, when applied to a large ſcale of buſineſs, can be reduced to practice. Thoſe I have ſeen, appear to have been written by perſons who had not abilities ſufficient for the undertaking, or by ſuch as never had an opportunity of bringing their theories to the teſt of experience." This elaborate work, which is evidently the reſult of experience, contains various examples of judicious arrangement; but it is not elementary, having only a journal and ledger.

Some ſmaller publications followed, which deſerve commendation, particularly thoſe of Mr. Wicks and Mr. Shires. The latter work is ſtated to be the reſult of thirty years' experience. It exhibits much neatneſs and ingenuity in the arrangement; but, like Booth's Book-keeping, it contains only a journal and ledger.

In tracing the progreſs of Italian book-keeping, ſomething ſhould be ſaid of a rival method, entitled the "Engliſh Book-keeping," publiſhed by Mr. Jones in 1796, a work chiefly remarkable for the enormous ſubſcription raiſed on the occaſion. A proſpectus of this performance was previouſly circulated, announcing the diſcovery of an infallible method of book-keeping by ſingle entry, and at the ſame time repreſenting the Italian method as deluſive and erroneous. By high promiſes and accredited recommendations, ſubſcriptions (at a guinea each) are ſaid to have been obtained, to the amount of ſix or ſeven thouſand pounds. The work, however, did not anſwer the expectations of the public. Several ingenious tracts ſoon appeared, defending double entry, and expoſing the inſufficiency of this new ſyſtem; and one of peculiar merit, written by Mr. Mill, cloſed the controverſy. This gentleman, in order to form a comparative eſtimate between the Engliſh and Italian methods, arranged Mr. Jones's materials into a journal and ledger, by double entry; and, in the courſe of the operation, detected an eſſential error;—a detection which completed the triumph of double entry.

The Engliſh ſyſtem of book-keeping, though univerſally rejected, has proved uſeful to the public as well as to the author. It gave riſe to much inveſtigation on the ſubject; and the extraordinary eagerneſs manifeſted in the ſubſcription, ſhewed that men of buſineſs wiſhed for a more practical ſyſtem of merchants' accounts than had been hitherto offered to their notice.

In 1801, Mr. Kelly publiſhed a work, entitled "The Elements of Book-keeping," which appears to have met with very general approbation, and from which the preſent article is, by permiſſion, extracted. The ſubſequent editions of this publication have been conſiderably enlarged by tracts on exchange, banking, and other commercial ſubjects; but its principal object (as ſtated in the preface) is to explain and illuſtrate the modern improvements of merchants' accounts. Of what theſe improvements conſiſt, may be known from the following account of the work, given in Nicholſon's Philoſophical Journal, Feb. 1802.

"The improvements, which time and experience have effected in book-keeping, do not comprehend any change in the original principle of double entry, but in the arrangement and claſſification of ſimilar accounts, which facilitate the operations of commerce nearly in the ſame manner that the buſineſs of manufactures is expedited by the diviſion of labour. The elementary treatiſe before us (Kelly's Book-keeping) exhibits theſe improvements. Here the waſte book is divided into a number of ſubſidiary books, each of which is the regiſter of its peculiar portion or department of buſineſs; and each book is divided into monthly tranſactions. By theſe means the journal is greatly ſhortened and ſimplified; but the principal advantage of ſuch arrangement conſiſts in poſting the books; for here a whole month's caſh, bills, commiſſion, inſurance, and intereſt, are each carried in one ſum, or entry, from the journal to the ledger. This method, by which repetitions are avoided, and labour conſiderably diminiſhed, is now generally adopted in our principal mercantile houſes."

Principles of Book-keeping both by Single and Double Entry.

Single Entry chiefly records tranſactions on credit, and for this purpoſe two books are required, called the *Day Book* and the *Ledger*.

The *day book* begins with an account of the owner's property, debts, &c.; then follows a detail of the occurrences of trade, ſet down in the order of time in which they take place.

The name of the perſon, or cuſtomer, is firſt written with the term *Dr.* or *Cr.* annexed, according as he becomes debtor or creditor by the tranſaction; and this may be diſtinguiſhed by the following general rule:

"The perſon who receives is *Dr.* and the perſon who gives or parts with any thing is *Cr.*"

Thus, if I ſell goods on credit, I enter A.B. the buyer, *Dr.* to the goods, ſpecifying their quantity and value.

If I buy goods on credit, I enter C.D. the ſeller, *Cr.* by the goods, ſpecifying their quantity and value.

By the ſame rule, if I pay money, the perſon to whom I pay it is made *Dr.* to caſh for the amount; and if I receive money, the perſon from whom I receive it, is made *Cr.* by caſh, for the amount.

And if debts be contracted or diſcharged by any other means, the ſame rule is obſerved; the perſon, who becomes indebted to me, is entered *Dr.* and the perſon to whom I become indebted, *Cr.*—Alſo, the perſon whoſe debt I diſcharge is made *Dr.*; and he that diſcharges a debt due by me, is *Cr.*

The *ledger* collects together the diſperſed accounts of each perſon in the day book, and places the *Drs.* and *Crs.* upon oppoſite pages of the ſame folio. The perſon's name is written in large characters as a title: on the left hand, or firſt page, he is ſtyled *Dr.*; and on the oppoſite, or right hand page, *Cr.* On theſe pages the tranſactions are entered as they ſtand *Drs.* or *Crs.* in the day-book. For inſtance, A. B. is debited for whatever he has bought of me; and on the oppoſite page, he is credited for the payments he has made. In ſhort, whatever I have given him, is on the *Dr.* ſide, and what he has given me on the *Cr.*; and the difference between the *Dr.* and *Cr.* ſides is called the "balance."

A ſhort Specimen of Single Entry.

January 1, 1805.

Suppoſe John Smith owes me 100l. which is my ſole property, or the net of my eſtate; and ſuppoſe that on the 2d of January, I buy of him 80 yards of cloth, at 15s. per yard; on the 3d, I ſell James Taylor, on credit, 60 yards of the ſaid cloth at 18s. 4d. per yard; and on the 4th, James Taylor pays me in part 40l. Required the day book and ledger of the foregoing tranſactions, according to ſingle entry, and alſo the profit or loſs.

Day Book.

Folio of Ledger.		£	s.	d.
	Jan. 1, 1805.			
	John Smith, *Dr.*			
	To Balance from Ledger *A* - -	100	0	0
	2.			
	John Smith, *Cr.*			
	By Cloth for 80 yards, at 15s. per yd.	60	0	0
	3.			
	James Taylor, *Dr.*			
	To Cloth for 60 yds, at 18s. 4d. per yd.	55	0	0
	4.			
	James Taylor, *Cr.*			
	By Caſh received in part - -	40	0	0

To poſt the foregoing Accounts into the Ledger.

The ledger being ruled in folio form, according to the following ſpecimen, with the left ſide for *Dr.* and the right ſide for *Cr.* alſo a margin for the date, and near the money columns, one for reference to the day book, proceed as follows:

Open an account for John Smith, and debit him, on the left hand page, for 100l.; and for the 2d day's tranſaction, credit him for 60l. on the oppoſite page.

For the 3d day, open an account for James Taylor, debiting him for 55l.; and for the 4th day, credit him for 40l.

When every tranſaction is thus poſted, each account is balanced, by ſubtracting the leſs ſum or ſide from the greater, and then putting the difference or balance under the ſmaller ſide, by which both ſums are made equal.

LEDGER BY SINGLE ENTRY.

		Page of Day Book.	£	s.	d.			Page of Day Book.	£	s.	d.
	John Smith *Dr.*	—					Contra. *Cr.*	—			
Jan. 1.	To Account from Ledger A -		100	0	0	Jan. 2.	By Cloth for 80 yards, at 15s. per yd.		60	0	0
							By Balance - - - -		40	0	0
									100	0	0
	James Taylor *Dr.*						Contra. *Cr.*				
Jan. 3.	To Cloth for 60 yards, at 18s. 4d. per yard - - -		55	0	0	Jan. 4.	By Caſh received in part - -		40	0	0
							By Balance - - - -		15	0	0
									55	0	0

By the above ledger it appears that the balances are in my favour; and if theſe be added to the caſh I have in hand, and the value of the goods unſold, the ſum is the net of my eſtate; which, compared with my original ſtock, ſhews my profit or loſs. Thus it appears that

John Smith owes me - -	£. 40
James Taylor owes me - -	15
I have in Caſh - - - - -	40
I have unſold 20 yards of cloth, at 15s. per yard (the prime coſt)	15
	110 The net of my eſtate.
	100 Stock beginning.
	£. 10 gain.

Hence I have cleared 10l. by the ſale of 60 yards of cloth at a profit of 3s. 4d. per yard.

Remarks on ſingle Entry.

By ſingle Entry I cannot tell what goods are unſold, or my profits or loſſes by my books only, except when the tranſactions are but few, as in the foregoing examples. For as the ledger here contains only the accounts of perſons dealing on credit, it affords no other knowledge to the owner, than what debts are due to him, and what he owes.

But if he wiſh to know what goods are undiſpoſed of, and what he has gained or loſt by the whole or any part of his dealings, he cannot obtain this knowledge by ſingle entry, without "taking ſtock;" that is, he muſt weigh or meaſure what goods he has unſold; and their value, added to the caſh in hand, and the balance of debts, will ſhew the net of his eſtate, and this, compared with his original ſtock, will ſhew his profit or loſs.

Hence book-keeping by ſingle entry is eſſentially defective, as it affords no method of aſcertaining the ſtate of a merchant's affairs, without taking ſtock; a taſk which is both laborious and liable to error, and which at beſt affords no adequate means of preventing embezzlement or detecting fraud; but theſe objects are attained by double entry, perhaps as effectually as human ingenuity can deviſe.

Double Entry.

In double entry, three principal books are required; the *waſte book*, *journal*, and *ledger*.

The *waſte book* gives a regular detail of the tranſactions of buſineſs, ſet down in the order of time in which they take place, and ſtated in a clear, ſimple, and circumſtantial manner.

The *journal* records the ſame tranſactions as the waſte book, but they are differently expreſſed; for here the *Drs.* and *Crs.* of the various accounts are aſcertained, in order to transfer them with more eaſe to the ledger.

The manner of aſcertaining the *Dr.* and *Cr.* of each tranſaction here is the ſame, in effect, as in ſingle entry; but in double entry, things as well as perſons, are made *Drs.* and *Crs.*; and one thing or perſon is made *Dr.* to another thing or perſon.

Thus, if I ſell cloth to A.B. on credit, I enter it in the journal, A.B. *Dr.* to Cloth. If I buy cloth of C.D. on credit, I journalize it, Cloth *Dr.* to C.D.; and if I buy or ſell for ready money, or barter one kind of goods for another, the following general rule muſt be obſerved:

"What I receive is *Dr.* to what I give or part with." For inſtance, if I buy cloth for ready money, the journal entry is "Cloth *Dr.* to Caſh;" and if I ſell it for ready money, "Caſh *Dr.* to Cloth;" always ſpecifying the quantity, price, and amount.

When two or more perſons or things are included in the ſame account, they are expreſſed by the term "Sundries," or "Sundry Accounts:" thus, if I ſell cloth for part money, and the reſt on credit, I journalize it, "Sundries *Drs.* to Cloth;" and then ſpecify the particulars.

The following rules for diſtinguiſhing *Dr.* and *Cr.* will apply in all caſes:

The perſon to whom, or for whoſe account I pay, or furniſh the means of payment is *debtor.*

The perſon from whom, or for whoſe account, I receive, or who furniſhes me with the means of payment, is *creditor.*

Every thing which comes into my poſſeſſion, or under my direction is *debtor.*

Every thing which paſſes out of my poſſeſſion, or from under my direction, is *creditor.*

The word Idoc is ſometimes uſed to aſſiſt the memory as being compoſed of the initials of the rule—*In Debtor, Out Creditor.*

The following lines may likewiſe aſſiſt the memory in journalizing:

By journal laws, what I receive,
Is debtor made to what I give;
Stock for my debts muſt debtor be,
And creditor by property;
Profit and loſs accounts are plain,
I *debit* loſs, and *credit* gain.

The *ledger* collects the ſcattered items, articles, or tranſactions, from the journal, and places them under their reſpective heads, oppoſing the *Drs.* and *Crs.* of each, on the ſame principle as in ſingle entry; but here accounts are opened for goods as well as for perſons, and every account is entered twice, whence this method is called "double entry."

The accounts of the ledger are diſtinguiſhed into three kinds, perſonal, real, and fictitious.

Perſonal accounts are the ſame in double as in ſingle entry; and every perſon is debited or credited as he ſtands *Dr.* or *Cr.* in the journal.

Hence every perſonal account, ſuppoſe that of A.B., contains on the *Dr.* ſide all items or articles, by which he becomes indebted to me, and on the *Cr.* ſide all items or articles, by which I become indebted to him.

Real accounts are thoſe opened for merchandize, or any other ſpecies of property, ſuch as caſh, bills, ſhips, houſes, &c. Here, as in all other accounts, each tranſaction is entered on the *Dr.* or *Cr.* ſide, as it ſtands in the journal. Thus, goods bought are entered on the *Dr.* ſide; and when theſe or any part of them are ſold, they are entered on the *Cr.* ſide; by which the quantity on hand, and the profit or loſs on each article may be, at any time, aſcertained.

Fictitious accounts are thoſe of ſtock, and profit and loſs.

Stock is a term uſed to repreſent the name of the merchant or owner of the books. On the *Dr.* ſide is entered the amount of the debts which he owed when the books were opened; and on the *Cr.* the amount of the caſh, goods, debts, and any other property then belonging to him. The difference between the *Dr.* and *Cr.* ſides ſhews his net ſtock, at that time.

Profit and loſs is a general term uſed for either gain or loſs, ſuch as may ariſe from trade, intereſt, commiſſion, &c. On the *Dr.* ſide are entered all tranſactions of loſſes; and on the *Cr.* ſide thoſe of gain—the difference ſhews the net gain or loſs.

A ſhort Example of Double Entry.

WASTE BOOK.

LONDON, *Jan.* 1. 1805.	£.	*s.*	*d.*
John Smith owes me, as per old Account in Ledger *A.* - - - - - -	100	0	0
JAN. 2.			
Bought of John Smith, 80 yards of Cloth, at 15s. per yard, on account -	60	0	0
3.			
Sold James Taylor on credit, 60 yards of Cloth, at 18s. 4d. per yard - -	55	0	0
4.			
Received of James Taylor, in part - -	40	0	0

JOURNAL.

Folio of Ledger.	LONDON, *Jan.* 1, 1805.	£	*s.*	*d.*
	John Smith Dr. *to Stock,* £100 -			
	For Balance of old Account - -	100	0	0
	2.			
	Cloth Dr. *to John Smith,* £60 - -			
	For 80 yards, bought at 15s. per yard -	60	0	0
	3.			
	James Taylor Dr. *to Cloth,* £55 -			
	For 60 yards, at 18s. 4d. per yard -	55	0	0
	4.			
	Caſh Dr. *to James Taylor,* £40 -			
	Received of him on account - - -	40	0	0

Rules for poſting the Journal into the Ledger.

The ledger being ruled with the *Dr.* ſide to the left, and the *Cr.* ſide to the right, (as before deſcribed,) let there be a ſpace allotted to the left of each page, for the day of the month, and to the right, for the page of the journal from whence each account is taken.

The accounts are moſtly opened in the ledger, according to the order in which they ſtand in the journal; this is not, however eſſential to the truth of the work, but it is the moſt regular method, and the moſt clear to learners. The ſtock account ſtands firſt, and, like all other accounts, is debited or credited as journalized.

Here ſtock is *Cr.* by John Smith; then for the ſecond entry, John Smith is *Dr.* to ſtock, for every *Dr.* muſt have a *Cr.* and every *Cr.* a *Dr.*

By the ſame rule the other accounts are entered twice in the ledger; firſt, in the direct way, as they ſtand in the journal, and then reverſed. Thus, the ſecond day's account is poſted, Cloth *Dr.* to John Smith, and then John Smith *Cr.* by Cloth.

In the ſame manner the third and fourth day's accounts are poſted; James Taylor is debited to Cloth, and Cloth credited by James Taylor; Caſh is next made *Dr.* to James Taylor, and James Taylor *Cr.* by Caſh.

Here it may be obſerved that, when an account is once opened in the ledger, every following tranſaction which concerns it muſt be brought back, and entered there on the proper ſide, as an account is never opened twice, though it may be transferred for want of room.

LEDGER.

1805.	*Stock.* Dr.	Page of Journal.	£	*s.*	*d.*	1805.	*Per Contra,* Cr.	Page of Journal.	£.	*s.*	*d.*
	To Balance for the Net of my ESTATE		110	0	0	Jan. 1.	By John Smith - - -		100	0	0
							By Profit and Loſs - - -		10	0	0
									110	0	0
	John Smith Dr.						*Per Contra,* Cr.				
Jan. 1.	To Stock - - - - -		100	0	0	Jan. 2.	By Cloth - - - -		60	0	0
							By Balance - - -		40	0	0
									100	0	0
	Cloth Dr.						*Per Contra,* Cr.				
Jan. 2.	To John Smith, 80 yards, at 15s. ℘ yard - - - - -		60	0	0	Jan. 3.	By James Taylor, 60 yards, at 18s. 4d.		55	0	0
	To Profit and Loſs - - -		10	0	0		*By Balance unſold,* 20 yards, at 15s.		15	0	0
							80				
			70	0	0				70	0	0
	James Taylor Dr.						*Per Contra,* Cr.				
Jan. 3.	To Cloth for 60 yards, at 18s. 4d. ℘ yard - - - -		55	0	0	Jan. 4.	By Caſh - - - - -		40	0	0
							By Balance - - - -		15	0	0
									55	0	0
	Caſh Dr.						*Per Contra,* Cr.				
Jan. 4.	To James Taylor - - -		40	0	0		By Balance - - - -		40	0	0
	Profit and Loſs Dr.						*Per Contra,* Cr.				
	To Stock gained - - -		10	0	0		By Cloth - - - -		10	0	0
	Balance Dr.						*Per Contra,* Cr.				
	To John Smith - - -		40	0	0		*By Stock for the Net of my Eſtate* -		110	0	0
	To Cloth - - - -		15	0	0						
	To James Taylor - - -		15	0	0						
	To Caſh - - - -		40	0	0						
			110	0	0						

To make a trial balance.

When every account is poſted twice from the journal into the ledger, and on oppoſite, or contrary, ſides, it is evident that all the ſums on the *Dr.* ſide will equal all thoſe on the *Cr.* ſide.

This trial, or check, is generally made on a ſeparate paper, and it may be performed every day, month, or year, according to the extent of the buſineſs. The titles of the ledger accounts are written under each other with *Dr.* to the left, and *Cr.* to the right. Annexed to each, on its proper ſide, is ſet down the ſum of every *Dr.* and *Cr.*; and both ſides will agree if the work be right: as in the following example, from the preceding ledger.

Trial balance.

Dr. £.	*s.*	*d.*		*Cr.* £.	*s.*	*d.*
0	0	0	Stock - - - - - -	100	0	0
100	0	0	John Smith - - - - -	60	0	0
60	0	0	Cloth - - - - - - -	55	0	0
55	0	0	James Taylor - - - -	40	0	0
40	0	0	Caſh - - - - - - - -	0	0	0
255	0	0		255	0	0

To make the general balance, and cloſe the ledger.

The journal being all correctly poſted, an account muſt be opened for profit and loſs, and another for balance. Theſe two accounts, with that of ſtock, are not to be cloſed until the others are balanced.

Proceed therefore to the ſecond account, where the difference between the *Dr.* and *Cr.* ſides appears to be 40l.; ſet this ſum under the ſmaller ſide, making both equal.

This balance or difference being on the *Cr.* ſide, John Smith's account is therefore credited by balance, and on the balance ſheet it is entered on the *Dr.* ſide: for if John Smith be *Cr.* by balance, then is balance *Dr.* to John Smith.

By this ſimple method all perſonal accounts are cloſed; but in real accounts a double operation is neceſſary, when any of the goods remain unſold, as theſe muſt be firſt balanced.

Thus, in the cloth account, the quantities on the *Dr.* and *Cr.* ſides muſt be compared, and their difference ſet down under the ſmaller quantity, making both ſides equal.

Here the difference is 20 yards, which, at firſt coſt, is worth 15l.; this ſum muſt be entered on the *Cr.* ſide of the cloth account, and then on the *Dr.* ſide of the balance account, thus making cloth *Cr.* by balance, and balance *Dr.* to cloth.

When the goods on the *Dr.* and *Cr.* ſides are balanced, the money columns muſt be next compared, and their difference ſhews the profit or loſs upon the article. In the cloth account the *Cr.* ſide is 10l. more than the *Dr.*; hence cloth is made *Dr.* to profit and loſs for that ſum; and profit and loſs *Cr.* by cloth for the ſame.

James Taylor's account, and the account of caſh being next balanced, proceed to prove the work.

The proof of book-keeping.

The accounts being all balanced, except thoſe of ſtock, profit and loſs, and balance, let the profit and loſs account be firſt cloſed. Here profit and loſs is *Dr.* to ſtock for 10l. gained, and therefore ſtock is made *Cr.* by the ſame.

The ſtock account muſt be next cloſed, where the balance appears to be 110l. Hence ſtock is made *Dr.* to balance for this ſum, and the balance account muſt therefore be made *Cr.* by ſtock for the ſame.

Now if the work be right, both ſides of the balance account will be equal; which is the proof of book-keeping, and which proof neceſſarily ariſes from double entry.

The reaſon of this proof will alſo appear obvious from the following conſiderations:

The balance account contains on the *Dr.* ſide what goods I have unſold, what caſh I have in hand, and what debts are due to me:

And on the *Cr.* ſide it contains what debts I owe. Therefore the difference between the *Dr.* and *Cr.* ſide of the balance account is the net of my eſtate.

Now there is another method of finding the net of my eſtate, which is, by adding my profits or ſubtracting my loſſes from my original ſtock; and when this ſum is put on the *Cr.* ſide of the balance account, it will make both ſides equal, if the books be correct.

This principle, or proof of book-keeping by double entry may be thus mathematically demonſtrated:

Let $S=$ the net ſtock at opening the books.
$p=$ the gain or loſs at cloſing the books.
$D=$ the *Dr.* ſide of the balance account.
$C=$ the *Cr.* ſide of the balance account.

Then $S+p=N=$ the net ſtock at cloſing the books, and $D-C=$ the net ſtock at cloſing the books.

Hence (per Ax. 1. Euclid.) $D-C=N$, and therefore $D=N+C$ which was to be proved; that is, the *Dr.* ſide of the balance account ſhould equal the *Cr.* ſide, added to the net ſtock.

Hence the proof of book-keeping may be conſidered as conſiſting of two methods of aſcertaining my property, and theſe muſt always agree if the work be right. If they differ, the books are certainly wrong.

The converſe of this rule, however, does not hold; for the balance account may cloſe when the work is wrong—a falſe ſtatement, for inſtance, continued on both ſides of the ledger, will not prevent the proof: but there is ſcarcely a probability that ſuch an error could be continued unobſerved; and even intentional miſ-ſtatements may be prevented by a "check ledger;" that is, by having two ledgers kept by different perſons. The general practice is to examine the books frequently, which is done by one perſon reading the journal, while another inſpects the ledger, in order to ſee that every account has been regularly poſted by double entry. It alſo promotes accuracy, to have the books regularly written up, ſo as to make the journal keep pace with the waſte book, and the ledger with the journal.

The following Set of Books exhibits the modern improvements of Merchants' Accounts.

This ſyſtem of book-keeping is performed on the principles of double entry, like the foregoing, with a waſte book, journal, and ledger, but it differs in arrangement; for here the waſte book is divided into a certain number of ſubſidiary books, each adapted to a particular kind of buſineſs: theſe are, the CASH BOOK, BILL BOOK, INVOICE BOOK, and SALES BOOK.

The *caſh book* is the waſte book for all money paid or received.

The *bill book* is the waſte book for all bills of exchange received or accepted.

The *invoice book* is the waſte book for all goods exported or ſent off, whether on commiſſion, or on the merchant's own account.

The *ſales book*, or account of ſales book, is the waſte book for all goods imported and ſold on commiſſion.

The *waſte book* contains the particulars of ſuch occurrences as cannot be brought under any of the foregoing heads, and it alſo gives a general account of every tranſaction,

tion, with a reference to the ſubſidiary book, where the particulars are to be found.

In the ſubſidiary books each month's occurrences are claſſed together, and ſo diſpoſed as greatly to ſimplify the journal; but the principal advantage of this arrangement conſiſts in carrying a whole month's caſh, or bills, in one line to the ledger: and the ſame may be done with a month's commiſſion, intereſt, inſurance, &c. though the practice is not yet become ſo general. Specimens of both methods are here given.

Beſides theſe advantages of ſimplicity and conciſeneſs, the ſubſidiary books have other important uſes as originals. Every exporter and importer of goods upon commiſſion, muſt have an invoice and ſales book, and the caſh and bill books are neceſſary in all departments of commerce.

Where ſubſidiary books are kept for every kind of buſineſs, a waſte book like the following may be diſpenſed with: though ſuch will be found highly uſeful, both as an index and day book. But, in teaching, a book of this kind is eſſentially neceſſary, not only as connecting the other books, and giving a ready reference to each, but as affording a regular hiſtory of the buſineſs, which the learner ſhould always underſtand.—It is perhaps the want of this knowledge that renders the theory of book-keeping ſo much more obſcure and perplexing than the practice.

THE WASTE OR DAY BOOK.

This book opens with an inventory of the merchant's property, (ſuppoſed to be tranſcribed from the balance account of a former ledger,) after which, a general regiſter or diary is given of all tranſactions, in the order of time in which they happened, with a reference to the ſubſidiary books, where ſuch are regularly entered.—The following are the references:

C. B. - Caſh Book,	I. B. - Invoice Book,
B. R. - Bills Receivable,	S. B. - Sales Book.
B. P. - Bills Payable,	

WASTE BOOK, Jan. 1, 1805. (1)

No.	Particulars		£	s.	d.
	The following is an inventory of my effects, both real and perſonal, being a liſt of the balances in my favour and againſt me, tranſferred from ledger A. dated the 31ſt ult.				
	I have in caſh - - - - - -		11700		
	Funded property 4,000l. in the 4 ℘ cents. *a* 78¼ - - - - - -		3130		
	Farm in Kent - - - - -		1520		
	Houſe at Richmond - - - -		500		
	Houſehold Furniture - - - - -		750		
	Ship Charlotte, my half - - -		3120		
	Merchandiſe for balance in hand - -		2165	10	6
	Debentures for balance due to the Cuſtom-houſe - - - - - -		462	10	
	Bills receivable for the following bills in hand, (particulars from former bill book.)				
210	On Ramſay and Co. due Jan. 15. - -	520 0 0			
426	On Edward Malone Jan. 25,	400 0 0			
235	On ditto - -	383 10 0			
141	On Hamilton and Co. Feb. 1. - -	312 0 0			
			1615	10	
			24963	10	6

WASTE BOOK, Jan. 1, 1805. (2)

No.	Particulars		£	s.	d.
	Brought forward		24963	10	6
253	On Weldon and Co. Feb. 15,	162 10 0			
261	On ditto - - 24,	231 5 0			
104	On ditto - - 28,	216 5 0			
			610	0	9
	Millman and ſon, - Oporto - -		572	10	0
	Charles Le Coin - Paris - -		389	15	0
	William Lamos - Bilboa - -		428	12	0
	William Chulmley - Hamburgh - -		310	13	9
	William Pemberton Naples - -		721	13	5
	Wilſon and Vanelli Leghorn - -		570	2	6
			28566	17	2
	I owe as follows:				
	To Smithſon and Co. of London -		820	5	0
	To George Holland - ditto - -		421	11	6
	To Gibſon and Carr - Birmingham -		268	11	4
	To Winter and Weſt - Jamaica -		506	0	0
	To Hampton and Co. - ditto - -		173	10	0
	To Edward White - ditto - -		316	4	0
	To James Prime - ditto - -		516	19	0
	To Edward Connor - ditto - -		721	18	0
	To Richard Broadly - ditto - -		216	9	0
	Bills payable for the following bills accepted by me (particulars from former bill book.)				
213	drawn by Charles Mills, due Jan. 12,	713 11 0			
219	James Harriſon - 26,	210 10 6			
214	John Gibſon - 26,	431 15 9			
216	Walter and Hume 30,	610 15 3			
218	Thomas Pembroke 30,	105 11 6			
215	Henry Barlow Feb. 4,	410 0 0			
217	Patrick Hamilton 11,	126 0 0			
			2608	4	0
			6569	11	10
	——Jan. 1.——				
	Shipped on board the Neptune, for Naples, Henry Marſom maſter, ſugar for the account of William Pemberton, as ℘ invoice book, viz.				
	Merchandize - -	128 1 10			
	Charges - - -	7 16 0			
	Commiſſion - - -	4 18 2			
	Inſurance - - -	3 2 0			
			143	18	0
	——2——				
	Accepted a bill drawn on me by George Holland, as ℘ bills payable, No. 1.		400	0	0
	——3——				
	Received by this day's poſt a bill from Charles Le Coin, of 2385 livres 11 ſous, at 25⅞ ℘ ecu. as ℘ bills receivable, No. 1.		85	14	7
	——5——				
	Paid Henry Barlow's bill, No. 215. as ℘ caſh book - - - -		410	0	0
	Received diſcount on the above, for 29 days, at 5 ℘ cent. C. B. - - -		1	12	6
	——12——				
	Shipped on board the Swan, for Bilboa, ſundry goods for the account of William Lamos, as ℘ I. B. viz.				
	Merchandize - -	635 19 10			
	Charges - - -	10 13 8			
	Commiſſion - - -	19 11 4			
	Inſurance - - -	11 1 6			
			677	6	4

WASTE BOOK, *Jan.* 12, 1805. (3)

—12—				
Paid Charles Mills's bill, due this day, No. 213. C. B. - - -		713	11	0
—15—				
Received the amount of Ramſay and Co.'s bill, No. 210. as ℘ C. B. - -		520	0	0
—15—				
Shipped on board the Betſy, for Leghorn, lead for the account of Wilſon and Vanelli, as ℘ I. B. viz.				
Merchandize - -	213 4 5			
Charges - - -	0 2 6			
Commiſſion - - -	4 17 2			
Inſurance - - -	3 15 0			
		221	19	1
—16—				
Accepted a bill drawn by Gibſon and Carr, N. 2, B. P. - - - - -		300	0	0
—18—				
Bought of Samuel Lightfoot, ſundry goods, amounting, as ℘ bills of parcels, to -		3050	0	0
—19—				
Received from William Chulmley, two bills, No. 2, and 3, B. R. - - -		582	10	0
—21—				
Samuel Lightfoot has drawn upon me two bills, No. 2. and 3, B. P.		1050	0	0
—23—				
Arrived the Nancy, from Oporto, on board of which are ten pipes of Port wine, conſigned to me by Millman and ſon, to ſell for their account, S. B.				
Paid ſundry charges on landing - -		196	11	9
—25—				
Received of William Lamos, three bills of exchange, No. 4, 5, and 6, B. R. -		800	0	0
—25—				
Received caſh of Edward Malone's bills, No. 424 and 435, C. B. - - -		783	10	0
—26—				
Paid John Gibſon's bill, No. 214, C. B.		431	15	9
—26—				
Paid James Harriſon's bill, No. 219. C. B.		210	10	6
—27—				
Received from G. Seaford, my half ſhare for freight on board the ſhip Charlotte, C. B.		138	10	0
—28—				
Received from William Shepherd for the produce of farm in Kent, C. B. - -		54	10	0
—29—				
Accepted three bills drawn by Smithſon and Co. No. 5, 6, and 7, B. P. - -		820	5	0
—30—				
Paid for repairs on board the ſhip Charlotte, C. B. - - - - -		43	15	0
—30—				
Paid Walter and Hume's bill, N° 210, C. B.		610	15	3
—30—				
Paid Thomas Pembroke's bill, No. 218, C. B.		105	11	6
—31—				
Shipped on board the Hope, Stanley, for Jamaica, ſundry goods for ſundry perſons, as ℘ I. B. viz.				

WASTE BOOK, *Jan.* 31, 1805. (4)

Winter and Weſt,				
Merchandize - -	375 9 9			
Charges - - -	3 19 5			
Commiſſion - -	11 10 8			
Inſurance - -	12 18 6			
		403	18	4
Hampton and Co.				
Merchandize - -	170 2 0			
Charges - - -	7 12 6			
Commiſſion - -	5 7 10			
Inſurance - - -	5 19 0			
		189	1	4
Edward White,				
Merchandize - -	608 2 6			
Charges - - -	5 5 0			
Commiſſion - -	18 11 8			
Inſurance - - -	20 7 6			
		652	6	8
James Prime,				
Merchandize - -	603 13 6			
Charges - - -	9 9 2			
Commiſſion - -	18 11 6			
Inſurance - -	20 7 6			
		652	1	8
Edmund Connor,				
Merchandize - -	704 12 11			
Charges - - -	9 9 2			
Commiſſion - -	21 12 11			
Inſurance - -	27 10 11			
		763	5	11
Richard Broadly and Shipper, each a half ſhare,				
Merchandize - -	923 15 3			
Charges - - -	8 14 5			
Commiſſion - -	28 6 2			
Inſurance - -	36 5 0			
		997	0	10
—31—				
Sold Smithſon and Co. Port wine, S. B.		218	1	8
Sold George Holland, Port wine, S. B.		139	11	3
—31—				
Received a dividend at the bank, half year's intereſt on £4000. at 4 ℘ Cent. C. B. -		80	0	0
—31—				
Sold £2000 ſtock *a* $79\frac{7}{8}$ ℘ Cent. commiſſion $\frac{1}{8}$ ℘ Cent. C. B. - - - - -		1595	0	0
—31—				
Received this month, debentures for ſundry goods ſhipped, amounting to - -		138	15	0
Received caſh for debentures this month, C. B. - - - - - - -		195	10	6
Paid ſundry charges this month for houſe expences, C. B. - - - - -		68	10	0
All the inſurances of this month have been made with the London Aſſurance Company, and the premiums are unpaid.				

SUBSIDIARY BOOKS;

Comprehending the Bill Book, Invoice Book, Sales Book, and Caſh Book.

The Bill Book.

The bill book is an index or regiſter of bills of exchange, whether receivable or payable.

Bills receivable are thoſe which the merchant receives in payment of ſome debt or contract—and bills payable are ſuch as are drawn upon him, and which he muſt pay when due.

When Bills receivable come to hand, their particulars are entered in their reſpective columns of the bill book; and the particulars of bills payable are likewiſe inſerted in their proper columns, when advice is received of their having been drawn, or when they are left for acceptance.

The uſe of the bill book will be underſtood by obſerving how the two following bills are entered.

Copy of the Bill, received from Charles le Coin, and entered in Bills receivable.

Liv. ſol. d.
2385 11 *a* 25⅞.
Paris, Dec. 9th, 1801.

Two months after ſight pay to the order of Mr. W. Bing, two thouſand three hundred and eighty-five livres eleven ſols Tournois, exchange *a* 25⅞ ꝑ ecu. for value received.

Mr. John Carr,
London.
Accepted Jan. 1802.
J. Carr.
H. Jones

Copy of the Bill drawn on me by George Holland, and entered in Bills payable.

£.400 0 0
London, Jan. 2, 1805.

Thirty-one days after date, pay to Mr. George Binns, or order, four hundred pounds for value received.

To Mr. A. B.
London.
Accepted,
A. B.
George Holland.

Bills Receivable, January 1805.

Page Jour.	N°	When Received.	From whom Received.	By whom drawn, and Place.		On whom drawn, and where.		Date.	To whom Payable.	Time.	Due.	Sum.	
2	1	Jan. 3	Chas. Le Coin	Jones	Paris	Carr	London	Dec. 9	William Bing	2 Months ſight	March 6	85	14 7
2	2	Ditto 19	Wm. Chulmley	Biſh	Hull	Hall	Ditto	Jan. 5	Charles Hume	31 Days ſight	Feb. 22	210	0 0
2	3	Ditto 19	Ditto	Ord	Peterſburg	Fox	Briſtol	Nov. 9	George Ellis	21 Days ſight	Feb. 12	372	10 0
2	4	Ditto 25	Wm. Lamos	Pope	Bilboa	Grey	Ditto	Jan. 2	Edward Ingram	2 Months ſight	March 28	250	0 0
2	5	Ditto 25	Ditto	Fry	Ditto	Hood	London	Jan. 2	Horner & Scott	2 Months ſight	March 28	310	0 0
2	6	Ditto 25	Ditto	Hill	Ditto	Cox	Ditto	Jan. 2	White & Croker	2 Months ſight	March 28	240	0 0

Bills Payable, January 1805.

Page Jour.	N°	By whom drawn and Place.		Date.	To whom Payable.	Time.	Acc^{d}.	Due.	Sum.		To whom paid and when.	
2	1	George Holland	London	Jan. 2	George Binns	31 Days date	Jan. 2	Feb. 5	400	0 0	Clerk of the Bank	Feb. 5
2	2	Gibſon and Carr	Birmingham	Jan. 12	Alfred Simpſon	31 Days date	Jan. 16	Do. 15	300	0 0	John Stubbs	Feb. 15
2	3	Saml. Lightfoot	London	Jan. 21	John Andrews	31 Days date	Jan. 21	Do. 24	500	0 0	D. Lindo	Feb. 29
2	4	Ditto	London	Jan. 24	Ellis and Co.	2 Mths. date	Jan. 24	Mar. 27	550	0 0	William Hoare	Mar. 27
2	5	Smithſon & Co.	London	Jan. 28	George Ramſay	21 Days date	Jan. 29	Feb. 21	237	10 0	Henry James	Feb. 21
2	6	Ditto	London	Jan. 28	Henry Watts	31 Days date	Jan. 29	Mar. 3	310	10 0	John Sills	Mar. 2
2	7	Ditto	London	Jan. 28	Wright and Hull	31 Days date	Jan. 29	Do. 3	272	5 0	Samuel Binns	Mar. 2

Invoice Book.

An Invoice is a paper ſent off with Goods exported on commiſſion. The preamble generally contains the name of the ſhip, maſter, place of deſtination, and of the perſon to whom the conſignment is made.

An account is next given of the quantity and amount of the goods, which are generally charged at the *bona ſide* prime coſt. The tradeſmen's Bills of parcels are either copied or ſent with the invoices, and referred to.

The ſhipping charges are added to the value of the goods, and upon this ſum the agent or factor generally charges his commiſſion. When he inſures the goods, he has alſo a ſmall commiſſion on the capital inſured, which capital is allowed to be ſomething more than the value of the riſk, in order to cover the amount of the riſk, premium, and other expences, in caſe of loſs.

The coſt of inſurance generally concludes the invoice, and the agent ſigns his name at the bottom with the words, errors excepted; this ſignature, however, does not appear in the book.

The invoice book, which contains the copies of all invoices ſent off, is ſometimes called the invoice book outward, to diſtinguiſh it from the invoice book inward, which contains copies of invoices received from abroad. But this book is often diſpenſed with, by preſerving the originals, either filed, or in pigeon-holes, or paſted in a blank book made for the purpoſe.

Invoices of goods received to be ſold on commiſſion, are generally copied into the ſales book, to which the charges are added.

The following invoice is here deemed a ſufficient ſpecimen, and thoſe referred to in the waſte book may be underſtood as arranged in the ſame manner.

Invoice of Sugar ſhipped on board the Neptune, Henry Marſom, Maſter, for Naples, by order of William Pemberton, Merchant there, for his Account and Riſk, and to him conſigned.

London, Jan. 1, 1805.

W.P. No.	No.	Cwt.		Cwt.				
1 *a* 4	1 Groſs	9 1 20	Tare	1 1 11				
	2 —	9 0 25	—	1 0 27				
	3 —	9 2 17	—	1 1 0				
	4 —	9 1 26	—	1 1 2				
	Groſs	37 3 4		5 0 12				
	Tare	5 0 12						
	Neat	32 2 20	at 5l. 3s. ℘ Cwt.			168	5	10
	CHARGES.							
	Debenture Entry - - -				4 9 0			
	Coſt of Hogſheads - - -				1 12 6			
	Cartage, Wharfage, Lighterage, and Bills of Lading - -				1 4 6			
						7	6	0
	Commiſſion on 176l. 1s. 10d. at 2¼ ℘ *Cent.*					3	19	2
	Premium of Inſurance on 190l. at 1½				2 17 0			
	Policy Duty - -				0 5 0			
	Commiſſion ½ ℘ *Cent.* -				0 19 0			
						4	1	0
						183	12	0
	Drawback allowed at the Cuſtom-Houſe -					40	4	0
	Entd. Jour. P. 3.					143	8	0

THE SALES BOOK, OR FACTORY BOOK.

This book is uſed to trace the net proceeds of any cargo or conſignment ſold upon commiſſion.

An account ſales generally occupies two pages, with a preamble over both, ſetting forth the names of the goods, ſhip, and perſon, from whom the conſignment is received. The firſt, or left-hand page, contains an account of the various charges incurred by the tranſaction, ſuch as freight, cuſtom, expences of landing and ſelling, together with the brokerage, and factor's commiſſion, both of which are charged on the groſs amount of the Sales. Commiſſion is ſometimes charged on money advanced for duty, together with the groſs amount of the conſignment; and ſome factors likewiſe charge intereſt on all advances.

The ſecond, or right-hand page, contains an account of the quantity, price, and amount of the goods ſold, with the buyer's name, and the time of payment. The difference between this groſs amount, and the charges, is the net proceeds: for which the factor gives his correſpondent credit, and ſends him a copy of the account ſales, to which he generally ſigns his name, with the words *Errors excepted.*

In ſmall conſignments, an account of ſales may be compriſed in one page, beginning either with the charges, or with the amount of the goods. The forms of theſe accounts are various, but all tend to the ſame object, that of aſcertaining the net proceeds.

CHARGES,

Dr. *Account Sales of* 10 *Pipes of Port Wine, received* ℘ *the Nancy, from Oporto, on Account of Millman and Son,* *Cr.*

1805.	Charges.	£	s	d	£	s	d
Jan. 23.	To Duty * on 1374 Galls. at 1s. 6⅔d. per Gall.	106	17	4			
	Exciſe, at 11l. 18s. ℘ Tun of 252 Galls.	64	17	8			
	Freight, Primage, &c. -	10	7	6			
					182	2	6
	Cooperage, 3s. ℘ Pipe	1	10	0			
	Cartage, Wharfage, &c. as ℘ Cooper's Account	6	9	0			
	Vault Rent, Inſurance from Fire, and taking Stock - -	3	0	0			
	Brokerage, 5s. ℘ Pipe -	2	10	0			
	Landwaiter's Fees - -	0	10	0			
	Poſtage of Letters - -	0	10	3			
					14	9	3
	Intereſt on Duty advanced to this Day, 96 Days, at 5 ℘ *Cent.* -				2	5	2
	Commiſſion at 2½ ℘ *Cent.*				8	18	9
					207	15	8
Jan. 31.	To Millman and Son, for Net Proceeds due this Day -				149	17	3
					357	12	11

1805.		No.	Gall.		£	s	d
Jan. 31.	By Smithſon and Co. ſold them payable at 2 Months 6 *Pipes,*						
		1	137				
		2	140				
		3	140				
		4	139				
		5	141				
		6	141				
			838	Leſs two Gall. allowed for Ullage, viz. 836 Galls. at 36l. ℘ Pipe of 138 Gallons.	218	1	8
Jan. 31.	By George Holland, ſold him payable in 3 Months. 4 *Pipes,*						
		7	138				
		8	140				
		9	118				
		10	140				
			536	Leſs 1 Gall. for Ullage, 535 Gall. at 36l. ℘ Pipe of 138 Gallons.	139	11	3
					357	12	11

Ent

Entd. Journ. P. 4. and 6.

The Cash Book.

The caſh book contains an account of all money tranſactions; it is kept in a folio form like the ledger, with *Dr.* marked on the left-hand page, and *Cr.* on the right. On the *Dr.* ſide is entered all money received, and on the *Cr.* all money paid.

The amount of theſe receipts or diſburſements may be carried in one ſum to the ledger, for every month, week, or day, according to the extent of the buſineſs; but monthly diviſions are moſt general; and it is found convenient to transfer the caſh book firſt to the journal, claſſing articles of the ſame kind together.

The following caſh book is formed from the waſte and ſubſidiary books, by obſerving thoſe tranſactions where money is either paid or received, and entering them accordingly with dates, names, and other neceſſary particulars. In real buſineſs, however, ſuch tranſactions ſhould be entered at the time they take place.

Separate columns are ſometimes allotted in the caſh book for money kept at different places; ſuch as, at a banker's, at the bank, and at home. The banker's book is occaſionally found uſeful in correcting and abridging the caſh book, which may be alſo abridged by the help of a petty caſh book, containing an account of ſmall charges on merchandize, and of other incidental expences.

The caſh book ſometimes contains accounts that need not be transferred to the journal; ſuch as loans and accommodations, which are to be ſoon repaid; theſe may be entered ſhort, and when ſettled, they of courſe, balance themſelves.

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* The above Sales took place in 1790, ſince which period the duty has been advanced to 3s. 4d. per gall. and the exciſe to 44l. 11s. per tun. As theſe charges are liable to continual alteration, the old rates are here continued as being equally proper to ſhew the form of an Account Sales.

Cash,				Dr.
1805.				
Jan. 5.	To Intereſt for diſcounting H. Barlow's Bill, No. 215	1	12	6
15	To Bills Receivable, No. 210, Ramſay and Co.	520	0	0
25	——— No. 424, E. Malone	400	0	0
	——— No. 235, ditto	383	10	0
27	To Ship Charlotte, received for freight	138	10	0
28	To Farm in Kent	54	10	0
31	To Debentures	195	10	6
	To Intereſt, received a Dividend at the Bank	80	0	0
	To Funded Property, ſold 2000l. ſtock at 79⅞ and ⅛	1595	0	0
	Entd. Jour. P. 1. and 2.			
		3368	13	0

Contra,				Cr.
1805.				
Jan. 1.	By Charges on Merchandize, ꝑ Nancy, for Naples	7	16	0
5	By Bills Payable, No. 215, H. Barlow	410	0	0
12	By Charges on Merchandize, ꝑ Swan, for Bilboa	10	13	8
	By Bills Payable, No. 213, C. Mills	713	11	0
15	By Charges on Merchandize, ꝑ Betſey, for Leghorn	0	2	6
23	By ditto for Sales, ꝑ Nancy, paid Cuſtoms, &c.	196	11	9
26	By Bills Payable, No. 214, J. Gibſon	431	15	9
	——— No. 219, J. Harriſon	210	10	6
30	By Ship Charlotte, paid for Repairs	43	15	0
	By Bills Payable, No. 216, W. Hume	610	15	3
	——— No. 218, F. Pembroke	105	11	6
31	By Charges on Merchandize, ꝑ Hope for Jamaica	44	9	8
	By Houſe Expences	68	10	0
		2854	2	7

JOURNAL.

The journal opens with the inventory of ſtock; after which the ſubſidiary books are journalized ſeparately, according to the following rules, and then ſuch tranſactions of the waſte book as are not contained in any of the ſubſidiary books, cloſe the journal for the month.

Rules for journalizing the Subſidiary Books.

1. To journalize the caſh book.

For all money received, "Caſh *Dr.* to Sundries;" for all money paid, "Sundries *Drs.* to Caſh;" ſpecifying particulars, and claſſing items of the ſame kind together. See p. 1. and 2. journal.

2. To journalize the bill book.

For all bills received, "Bills receivable *Dr.* to Sundries;" for all bills accepted, "Sundries *Drs.* to Bills payable;" ſetting forth names, numbers, and other neceſſary particulars. See p. 2. journal.

3. To journalize the invoice book.

The perſon, for whoſe account the invoice is ſent, "*Dr.* to Sundries," viz.

"To Merchandize;" for amount of goods.

"To Charges on Merchandize," for ſhipping, and other charges.

"To Commiſſion," for the factor's commiſſion.

"To Inſurance," for premium of inſurance. See p. 3. journal.

When ſeveral invoices are ſent by the ſame ſhip, they may be arranged in columns, as in p. 5. journal; a method which promotes both accuracy and diſpatch, and which might be alſo uſed with the invoice book in general, and with the ſales book.

4. To journalize the ſales book.

The perſon, to whom the goods are ſold, is debited for the ſales; and if they are ſold for ready money, the account is entered accordingly in the caſh book. Then,

"Sales (ꝑ the ſhip's name, &c.) *Dr.* to Sundries."

"To Charges on Merchandize," for charges at landing, &c.

"To Intereſt," for intereſt, if charged on money advanced.

"To Commiſſion," for the factor's commiſſion.

"To A.B. (the conſigner)," for net proceeds. See p. 4. and 6. journal.

The above titles vary in different houſes; as "Sales of Cotton, Sugar, &c. per the ſhip, *Dr*;" "Merchandize imported, *Dr.*;" and the charges on ſales and invoices, viz. "Freight," "Convoy," "Duty," and "Cuſtoms," are moſtly arranged under ſeparate heads. But, however theſe modes and terms may vary, the principles and reſult are the ſame.

Note. The pages of the different books are put in parentheſes in the corners; and in the ledger the page of the journal, where the article is to be found, is inſerted in a column next to the date; and the reference next to the money column ſhews the folio of the ledger where the ſecond entry is made: but here there can be no figure for "Sundries," as the ſundry accounts may occupy different folios; this is an inconvenience which can be only remedied by turning to the journal, where the ſundries are ſpecified, and where the folio of each ledger account is marked in the margin.

(1) *JOURNAL, Jan.* 1805.

Date.	Fol. Ledg.					
1	1	SUNDRIES *Drs.* to Stock. For the following Balances in my favour the 31ſt ult. transferred.				
	1	Caſh—for balance in hand - -		11700	0	0
	1	Funded Property 4000l. at $78\frac{1}{4}$ in the 4 per cents. - - - - -		3130	0	0
	1	Farm in Kent - - - -		1520	0	0
	2	Houſe at Richmond - - -		500	0	0
	2	Houſehold Furniture - - -		750	0	0
	2	Ship Charlotte—my half - -		3120	0	0
	2	Merchandize—for balance in hand -		2165	10	6
	4	Debentures { for balance due at the Cuſtom-houſe }		462	10	0
	3	Bills receivable, for the amount of bills due to me - - - - -		2225	10	0
	4	Millman and Son Liſbon -		572	10	0
	4	Charles Le Coin Paris -		389	15	0
	5	William Lamos Bilboa -		428	12	0
	5	William Chulmley Hamburgh -		310	13	9
	5	William Pemberton Naples -		721	13	5
	5	Wilſon and Vanelli Leghorn		570	2	6
				28566	17	2
1	1	STOCK *Dr.* to Sundries. For the following Balances againſt me the 31ſt ult. transferred.				
	6	To Smithſon and Co. London -		820	5	0
	6	To George Holland Ditto - -		421	11	6
	6	To Gibſon and Carr Birmingham		268	11	4
	6	To Winter and Weſt Jamaica -		506	0	0
	7	To Hampton and Co. Ditto - -		173	10	0
	7	To Edward White Ditto - -		316	4	0
	7	To James Prime Ditto - -		516	19	0
	7	To Edmund Connor Ditto - -		721	18	0
	8	To Richard Broadly Ditto - -		216	9	0
	4	To Bills payable, for my acceptances unpaid - - - - -		2608	4	0
				6569	11	10
	1	CASH *Dr.* to Sundries. For the following Sums received this Month, as per C. B.				
5	8	To Intereſt - -	1 12 6			
31	8	To ditto - - -	80 0 0			
				81	12	6
15	4	To Bills receivable, No. 210,	520 0 0			
25		——————— 224,	400 0 0			
		——————— 235,	383 10 0			
				1303	10	0
27	2	To Ship Charlotte - - -		138	10	0
28	1	To Farm in Kent - - -		54	10	0
31	4	To Debentures - - - - -		195	10	6
	1	To Funded Property - - -		1595	0	0
				3368	13	0

(2) *JOURNAL, Jan.* 1805.

Date.	Fol. Ledg.					
	1	SUNDRIES *Drs.* to Caſh. For the following Sums paid this Month, as per C. B.				
1	3	Chgs. on merch. ꝑ Neptune, for Naples - -	7 16 0			
12		——————— ꝑ Swan, for Bilboa - -	10 13 8			
15		——————— ꝑ Betſey, for Leghorn - -	0 2 6			
23		——————— ꝑ Nancy, from Oporto - -	196 11 9			
31		——————— ꝑ Hope, for Jamaica - -	44 9 8			
				259	13	7
5	4	Bills payable, No. 215 -	410 0 0			
12		——————— 213 -	713 11 0			
26		——————— 214 -	431 15 9			
26		——————— 219 -	210 10 6			
30		——————— 216 -	610 15 3			
30		——————— 218 -	105 11 6			
				2482	4	0
30	2	Ship Charlotte - - - -		43	15	0
31	8	Houſe Expences - - - -		68	10	0
				2854	2	7
	4	BILLS RECEIVABLE *Dr.* to Sundries. For the following Bills received this Month, as per B. R.				
3	4	To C. Le Coin, N° 1, due Mar. 6		85	14	7
19	5	To W. Chulmley, 2,—Feb. 22,	210 0 0			
		——————— 3,——— 12,	372 10 0			
				582	10	0
25	5	To Will. Lamos, 4,—Mar. 28,	250 0 0			
		——————— 5,——— 28,	310 0 0			
		——————— 6,——— 28,	240 0 0			
				800	0	0
				1468	4	7
	5	SUNDRIES *Drs.* to Bills payable. For the following Bills accepted by me this Month, as per B. P.				
2	6	G. Holland, N° 1, due Feb. 5		400	0	0
16	6	Gibſon and Carr, 2, ——— 15		300	0	0
21	9	S. Lightfoot, 3, ——— 24,	500 0 0			
		——————— 4,—Mar. 27,	550 0 0			
				1050	0	0
29	6	Smithſon & Co. 5,—Feb. 21,	237 10 0			
		——————— 6,—Mar. 3,	310 10 0			
		——————— 7,——— 3,	272 5 0			
				820	5	0
				2570	5	0

(3) *JOURNAL, Jan.* 1805.

Date.	Fol. Ledg.			
1	5	**William Pemberton** *Dr.* to Sundries.		
		For Amount of Invoice of Sugar per Neptune, for Naples, as per W. B. p. 2.		
	2	To Merchandize -	128 1 10	
	3	To Charges on Merchandize	7 16 0	
	3	To Commiſſion - -	4 18 2	
	3	To Inſurance - -	3 2 0	
				143 18 0
12	6	**William Lamos** *Dr.* to Sundries.		
		For Amount of Invoice per Swan, for Bilboa, as per W. B. p. 2.		
	2	To Merchandize -	635 19 10	
	3	To Charges on Merchandize	10 13 8	
	3	To Commiſſion - -	19 11 4	
	3	To Inſurance - -	11 1 6	
				677 6 4
15	5	**Wilson and Vanelli** *Dr.* to Sundries.		
		For Amount of Invoice of Lead per Betſey, for Leghorn, as per W. B. p. 3.		
	2	To Merchandize - -	213 4 5	
	3	To Charges on Merchandize	0 2 6	
	3	To Commiſſion - -	4 17 2	
	3	To Inſurance - -	3 15 0	
				221 19 1

(4) *JOURNAL, Jan.* 1805.

Date.	Fol. Ledg.			
18	2	**Merchandize** *Dr.* to Samuel Lightfoot.		
	9	For amount of goods bought of him, as ℔ B. P. - - - - -		3050 0 0
31	3 9	**Insurance** *Dr.* to the London Aſſurance Company.		
		For Amount of Inſurances made this Month, as per I. B.		
		℔ Nancy, for Naples -	3 2 0	
		℔ Swan, for Bilboa -	11 1 6	
		℔ Betſey, for Leghorn -	3 15 0	
		℔ Hope, for Jamaica -	123 8 5	
				141 6 11
31	4 2	**Debentures** *Dr.* to Merchandize.		
		For Drawbacks received this Month -		138 15 0
	8	**Sundries** *Drs.* to Sales ℔ the Nancy.		
		For Amount of 10 Pipes of Port, for Account of Millman and Son, as per S. B.		
31	6	Smithſon and Co. 6 pipes at 2 months -	218 1 8	
31	6	George Holland, 4 do. at 3 months - -	139 11 3	
				357 12 11

(5) *JOURNAL, Jan.* 31. 1805.

Sundries *Drs.* to Sundries.

For Amount of Invoices per the Hope, for Jamaica, as per W. B. p. 3.

	Fol. of Led.		Pa. Inv.	Merchandize.	Charges on ditto.	Commiſſion.	Inſurance.	
1		*Drs.*						
	6	Winter and Weſt - - - - -		375 9 9	3 19 5	11 10 8	12 18 6	403 18 4
	7	Hampton and Co. - - - - - -		170 2 0	7 12 6	5 7 10	5 19 0	189 1 4
	7	Edward White - - - - - -		608 2 6	5 5 0	18 11 8	20 7 6	652 6 8
	7	James Prime - - - - - -		603 13 6	9 9 2	18 11 6	20 7 6	652 1 8
	7	Edmund Connor - - - - - -		704 12 11	9 9 2	21 12 11	27 10 11	763 5 11
	8	Adventure to Jamaica, in company with R. Broadley, my half - - - - -		923 15 3	8 14 5	28 6 2	36 5 0	498 10 5
	8	Richard Broadley, his half - - -	--	- - - -	- - -	- - -	- - -	498 10 5
		Crs.						
	2	Merchandize - - - - - - -		3385 15 11				
	3	Charges on Merchandize - - - - - - -			44 9 8			
	3	Commiſſion - - - - - - - - - - - -				104 0 9		
	3	Inſurance - - - - - - - - - - - - - -					123 8 5	
								3657 14 9

(6) *JOURNAL, Jan.* 1805.

Date.	Fol. Ledg.							
3	8	Sales ℘ the Nancy *Dr.* to Sundries.						
23	3	To charges on Merchandize	196	11	9			
	3	To Commiſſion -	8	18	9			
	8	To Intereſt -	2	5	2			
31	4	To Millman and Son, for net proceeds of 10 pipes of port, as ℘ S.B.	149	17	3			
						357	12	11

LEDGER.

The rules already laid down in the introductory part will apply in all caſes that can occur for poſting the journal into the ledger: ſome further explanations, however, may be here uſeful with reſpect to new forms and arrangements.

In the following ledger the accounts are arranged in the ſame order as in the journal, except in folios 2, 3, and 4, where articles, which are often referred to at the ſame time, are contiguouſly placed, to ſave the trouble of frequently turning to the index. This method of claſſing accounts of the ſame deſcription is found very convenient in extenſive buſineſs; but in the theory of book-keeping it is more obvious and regular to follow the order of the journal.

When all the accounts are opened in the ledger from the inventory of ſtock, let the ſubſidiary books in the journal, for each month, be poſted in the following manner:

1. *To poſt the journal of the caſh book.*

Debit the caſh account—to ſundries, for the amount received.

Credit the caſh account—by ſundries, for the amount paid.

Then, for the ſecond or double entry.

Credit each account ſeparately—by caſh, for the reſpective ſums received.

Debit each account ſeparately—to caſh, for the reſpective ſums paid.

2. *To poſt the journal of the bill book.*

Debit bills receivable—to ſundries, for their whole amount.

Credit each perſon from whom they have been received—by bills receivable for their reſpective amounts.—Again,

Credit bills payable—by ſundries, for their whole amount.

Debit each perſon for whom they have been accepted—to bills payable, for their reſpective amounts.

3. *To poſt the journal of the invoice book.*

Debit the perſon to whom the invoice is ſent—to ſundries, for the whole amount.

Credit merchandize, charges, commiſſion, and inſurance reſpectively—by the ſaid perſon, for the reſpective ſums annexed to theſe terms.

When ſeveral invoices are journalized together in columns, (as in page 5 of the journal,) the whole amounts of merchandize, charges, commiſſion, and inſurance, are each poſted in one entry. This arrangement not only ſaves labour and repetition in the journal, and affords checks againſt error, but is alſo greatly ſhortens and ſimplifies the ledger. Had thoſe ſix invoices been journalized ſeparately, there muſt have been twenty-four entries in the journal, and the ſame number in the ledger, which, by this method, are compriſed in four.

4. *To poſt the journal of the ſales book.*

Debit the perſon or perſons to whom the conſigment is ſold—to ſales (℘ the ſhip's name) for the amount,—and

Credit charges, commiſſion, intereſt, and the conſigner—by ſales for the ſums annexed to theſe titles reſpectively.

Some merchants open alſo a general account of ſales, to which they transfer the amount of Dr. and Cr. ſides of the factory book.

When the other articles of the journal are poſted, a trial balance ſhould take place. This uſeful check may be applied either monthly, weekly, or daily, according to the extent of the buſineſs.

In making the general balance, the reſidue of funded property, houſes, lands, furniture, ſhips, or goods unſold, is ſet down at the firſt coſt; but in real buſineſs, it is more correct and ſatisfactory to enter ſuch balances at their actual value, and to debit or credit profit and loſs for the difference between their preſent worth and prime coſt. Such a valuation becomes neceſſary, when any change takes place in the firm of a houſe, or in the terms of copartnerſhip; and in order, at any time, to make a true eſtimate of profit and loſs, intereſt ſhould be charged on all property as well as on debts.

Partnerſhip accounts are made very obſcure and perplexing in moſt old ſyſtems of book-keeping, though in real buſineſs no ſuch difficulty occurs. The general practice is to keep the books of a joint concern as if they belonged to one perſon only:—to open a ſeparate account for each partner like that of any other individual, and on cloſing the books to divide the profits and loſſes according to the terms of copartnerſhips.

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(1) LEDGER.

STOCK.

		Dr.							*Cr.*				
Jan. 1.	1	To Sundries - - - -		6569	11	10	Jan. 1.	1	By Sundries - - -		28566	17	2
Jan. 31.		To Balance - - -	10	22334	4	2	Jan. 31.		By Profit and Loſs - -	9	336	18	10
				28903	16	0					28903	16	0

CASH.

		Dr.							*Cr.*				
Jan. 1	1	To Stock - - -	1	11700	0	0	Jan. 3	2	By Sundries - - -		2854	2	7
Jan.	1	To Sundries - - -		3368	13	0	Jan. 31.		By Balance - - -	10	12214	10	5
				15068	13	0					15068	13	0

FUNDED PROPERTY.

		Dr.							*Cr.*				
Jan. 1.	1	To Stock, 400l. *a* 78¼ -	1	3130	0	0	Jan. 31.	1	By Caſh, 2000l. *a* 79¾ -	1	1595	0	0
Jan. 31.		To Profit and Loſs - -	9	30	0	0			By Balance, 2000l. *a* 78¼ -	10	1565	0	0
				3160	0	0					3160	0	0

FARM IN KENT.

		Dr.							*Cr.*				
Jan. 1.	1	To Stock - - - -	1	1520	0	0	Jan. 28.	1	By Caſh - - -	1	54	10	0
Jan. 31.		To Profit and Loſs - -	9	54	10	0	Jan. 31.		By Balance - - -	10	1520	0	0
				1574	10	0					1574	10	0

(2) LEDGER.

Dr. HOUSE AT RICHMOND. *Cr.*

Jan. 1	1	To Stock - - -	1	500	0	0	Jan. 31		By Balance - - -	10	500	0	0

Dr. HOUSEHOLD FURNITURE. *Cr.*

Jan. 11	1	To Stock - - -	1	750	0	0	Jan. 31		By Balance - - -	10	750	0	0

Dr. SHIP CHARLOTTE. *Cr.*

Jan. 1	1	To Stock - - -	1	3120	0	0	Jan. 27	1	By Caſh - - - -	1	138	10	0
	2	To Caſh - - -	1	43	15	0	31		By Balance - - -	10	3120	0	0
31		To Profit and Loſs - -	9	94	15	0							
				3258	10	0					3258	10	0

Dr. MERCHANDIZE. *Cr.*

Jan. 1	1	To Stock - - -	7	2165	10	6	Jan. 1	3	By William Pemberton - -	3	128	1	10
18	4	To Samuel Lightfoot -	9	3050	0	0		3	By William Lamos - -	3	635	19	10
								3	By Wilſon and Vanelli - -	3	213	4	5
				5215	10	6		5	By Sundries - - -		3385	15	11
								4	By Debentures - - -	4	138	15	0
							31		By Balance - - -	10	713	13	6
											5215	10	6

LEDGER.

CHARGES ON MERCHANDIZE.

Dr.												*Cr.*			
Jan.	1	1	To Caſh - - - - -	1	259	13	7	Jan.	1	3	By William Pemberton - -	5	7	16	0
									12	3	By W. Lamos - -	5	10	13	8
									15	3	By Wilſon and Vanelli - -	5	—	2	6
									31	5	By Sundries - - -		44	9	8
									23	6	By Sales ℘ the Nancy - -	8	196	11	9
													259	13	7

COMMISSION.

Dr.												*Cr.*			
Jan.	31		To Profit and Loſs - -	9	142	6	2	Jan.	1	3	By W. Pemberton - - -	5	4	18	2
									12	3	By W. Lamos - -	5	19	11	4
									15	3	By Wilſon and Vanelli - -	5	4	17	2
									31	5	By Sundries - - -		104	0	9
									4	6	By Sales ℘ the Nancy - -	8	8	18	9
													142	6	2

INSURANCE.

Dr.												*Cr.*			
Jan.	31	4	To the London Aſſurance Company - - -	9	141	6	11	Jan.	1	3	By W. Pemberton - - -	5	3	2	0
									12	3	By W. Lamos - -	5	11	1	6
									15	3	By Wilſon and Vanelli - -	5	3	15	0
									31	5	By Sundries - - -		123	8	5
													141	6	11

BILLS RECEIVABLE.

Dr.												*Cr.*			
Jan.	1	1	To Stock - - -	1	2225	10	0	Jan.	3	1	By Caſh - - -	1	1303	10	0
		2	To Sundries - -		1468	4	7		31		By Balance - - -	10	2390	4	7
					3693	14	7						3693	14	7

(4) LEDGER.

Dr. BILLS PAYABLE. *Cr.*

Jan.	31	1	To Caſh	1	2482	4	0	Jan.	1	1	By Stock	1	2608	4	0
			To Balance	10	2696	5	0		31	2	By Sundries		2570	5	0
					5178	9	0						5178	9	0

Dr. DEBENTURES. *Cr.*

Jan.	1	1	To Stock	1	462	10	0	Jan.	31	1	By Caſh	1	195	10	6
		4	To Merchandize	2	138	15	0		31		By Balance	10	405	14	6
					601	5	0						601	5	0

Dr. MILLMAN AND SON. *Cr.*

Jan.	1	1	To Stock	1	572	10	0	Jan.	31	6	By Sales ꝑ the Nancy	8	149	17	3
									31		By Balance	10	422	12	9
													572	10	0

Dr. CHARLES LE COIN. *Cr.*

Jan.	1	1	To Stock	1	389	15	0	Jan.	31	2	By Bills receivable	3	85	14	7
									31		By Balance	10	304	0	5
													389	15	0

(5)

LEDGER.

WILLIAM LAMOS.

Dr.												*Cr.*			
Jan. 1	1	To Stock - - -	1	428	12	0	Jan. 23	2	By Bills receivable - -	3	800	0	0
12	3	To Sundries - - -	0	677	6	4	31		By Balance - - -	10	305	18	4
				1105	18	4					1105	18	4

WILLIAM CHULMLEY.

Dr.											*Cr.*		
Jan. 1	1	To Stock - - -	1	310	13	0	Jan. 19	2	To Bills receivable - -	3	582	10	0
31		To Balance - - -	10	271	17	0							
				582	10	0							

WILLIAM PEMBERTON.

Dr.											*Cr.*		
Jan. 1	1	To Stock - - -	7	721	13	5	Jan. 31		By Balance - - -	10	865	12	2
1	3	To Sundries - - -		143	18	9							
				865	12	2							

WILSON AND VANELLI.

Dr.											*Cr.*		
Jan. 1	1	To Stock - - -	1	570	2	6	Jan. 31		By Balance - - -	10	792	1	7
15	3	To Sundries - - -		221	19	1							
				792	1	7							

(6)

LEDGER.

SMITHSON AND CO.

Dr.										*Cr.*			
Jan. 29	2	To Bills payable - -	4	820	5	0	Jan. 1	1	By Stock - - -	1	820	5	0
	4	To Sales ⅌ Nancy - -	8	218	1	8	31		By Balance - - - -	10	218	1	8
				1038	6	8					1038	6	8

GEORGE HOLLAND.

Dr.										*Cr.*			
Jan. 2	2	To Bills payable - -	4	400	0	0	Jan. 1	1	By Stock - - -	1	421	11	6
	4	To Sales ⅌ Nancy - -	8	139	11	3	31		By Balance - - -	10	117	19	9
				539	11	3					539	11	3

GIBSON AND CARR.

Dr.										*Cr.*			
Jan. 16	2	To Bills payable - -	4	300	0	0	Jan. 1	1	By Stock - - -	1	268	11	4
							31		By Balance - - -	10	31	8	8
											300	0	0

WINTER AND WEST.

Dr.										*Cr.*			
Jna. 31	5	To Sundries - - -		403	18	4	Jan. 1	1	By Balance - - -	1	506	0	0
31		To Balance - - -	10	102	1	8							
				506	0	0							

(7) LEDGER.

Dr. HAMPTON AND CO. *Cr.*

Jan.	31	5	To Sundries - - -		189	1	4	Jan. 1	1	By Stock - - -	1	173	10	0
								31		By Balance - - -	10	15	11	4
												189	1	4

Dr. EDWARD WHITE. *Cr.*

Jan.	1	5	To Sundries - - -		652	6	8	Jan. 1	1	By Stock - - -	1	316	4	0
								31		By Balance - - -	10	336	2	8
												652	6	8

Dr. JAMES PRIME. *Cr.*

Jan.	31	5	To Sundries - - -		652	1	8	Jan. 1	1	By Stock - - -	1	516	19	0
								31		By Balance - - -	10	135	2	8
												652	1	8

Dr. EDMUND CONNOR. *Cr.*

Jan.	31	5	To Sundries - - -		763	5	11	Jan. 1	1	By Stock - - -	1	721	18	0
								31		By Balance - - -	10	41	7	11
												763	5	11

LEDGER.

RICHARD BROADLEY.

Dr.							*Cr.*						
Jan. 31	5	To Adventure to Jamaica -	9	498	10	5	Jan. 1	1	By Stock - - -	1	216	9	0
							31		By Balance - - -	10	282	1	5
											498	10	5

ADVENTURE TO JAMAICA.

Dr.							*Cr.*						
Jan. 31	5	To Sundries, my ½ - -		498	10	5	Jan. 31		By Balance - - -	10	498	10	5

SALES PER THE NANCY.

Dr.							*Cr.*						
Jan. 31	4	To Sundries - - -		357	12	10	Jan. 31	6	By Sundries - - -	6	357	12	10

INTEREST.

Dr.							*Cr.*						
Jan. 31		To Profit and Loſs - -	9	83	17	8	Jan. 5	1	By Caſh - - - -	1	81	12	6
								6	By Sales ℘ Nancy - -	8	2	5	2
											83	17	8

(9)

LEDGER.

HOUSE EXPENCES.

Dr.				£	s.	d.			*Cr.*		£	s.	d.
Jan. 31	1	To Caſh	1	68	10	0	Jan. 31		By Profit and Loſs	9	68	10	0

SAMUEL LIGHTFOOT.

Dr.				£	s.	d.			*Cr.*		£	s.	d.
Jan. 2	2	To Bills payable	4	1050	0	0	Jan. 18	4	By Mercnhandize	3	3050	0	0
31		To Balance	10	2000	0	0							
				3050	0	0							

LONDON ASSURANCE COMPANY.

Dr.				£	s.	d.			*Cr.*		£	s.	d.
Jan. 31		To Balance		141	6	11	Jan. 31		By Inſurance	3	141	6	11

PROFIT AND LOSS.

Dr.				£	s.	d.			*Cr.*		£	s.	d.
Jan. 31	2	To Houſe Expences	8	68	10	0	Jan. 31		By Funded Property	1	30	0	0
		To Stock	1	336	18	10			By Farm in Kent	1	54	10	0
									By Ship Charlotte	2	94	15	0
									By Commiſſion	3	142	6	2
									By Intereſt	8	83	17	8
				405	8	10					405	8	10

	Dr.					BALANCE.					Cr.
Jan. 31.	To Caſh	1	12214	10	5	Jan. 31.	By Bills Payable	4	2696	5	0
	To Funded Property	1	1565	0	0		By William Chulmley	5	271	17	0
	To Farm in Kent	1	1520	0	0		By Winter and Weſt	6	102	1	8
	To Houſe at Richmond	2	500	0	0		By Samuel Lightfoot	9	2000	0	0
	To Houſehold Furniture	2	750	0	0		By London Aſſurance Company	9	141	6	11
	To Ship Charlotte	2	3120	0	0		By Stock	1	22334	4	2
	To Merchandize	2	713	13	6						
	To Bills receivable	3	2390	4	7				27545	14	9
	To Debentures	4	405	14	6						
	To Millman and Son	4	422	12	9						
	To Charles Le Coin	4	304	0	5						
	To William Lamos	5	305	18	4						
	To William Pemberton	5	865	12	2						
	To Wilſon and Vanelli	5	792	1	7						
	To Smithſon and Co.	6	218	1	8						
	To George Holland	6	117	19	9						
	To Gibſon and Carr	6	31	8	8						
	To Hampton and Co.	7	15	11	4						
	To Edward White	7	336	2	8						
	To James Prime	7	135	2	8						
	To Edmund Connor	7	41	7	11						
	To Richard Broadley	8	282	1	5						
	To Adventure to Jamaica	8	498	10	5						
			27545	14	9						

Remarks on the Ledger and Subſidiary Books.

As intereſt ſhould be charged in the ledger upon every article, or debt, from the time it becomes due to the period of ſettlement, the operation ought to take place before the general balance, and the difference between the intereſt of the *Dr.* and *Cr.* ſides of each account of the ledger ſhould be carried back to the journal, making "Sundries *Drs.* to Intereſt" for the balance in favour of ſtock, and "Intereſt *Dr.* to Sundries" for the balances on the other ſide. Theſe entries ſhould then be poſted to their reſpective accounts in the ledger; and it is common, at the ſame time, to inſert poſtage of letters, and other ſmall charges on merchandize.

The manner of inſerting the balance, and profit and loſs accounts, in the ledger, varies in different counting-houſes. In ſome they are placed as in the foregoing ſpecimen: in others, the particulars of thoſe accounts are inſerted at the end of the journal, and the ſum total only of each transferred to its proper place in the ledger; a method that is found very convenient in extenſive buſineſs, where accounts in the ledger may be thus cloſed as the goods are ſold off, which greatly diminiſhes the labour of the general balance.

Beſides the ſubſidiary books already explained, there are various others peculiar to certain kinds of buſineſs; ſuch as *Books of Inſurance*, and *Shipping Accounts*. There are alſo ſeveral, the titles of which are ſufficiently explanatory of their uſes; ſuch as the *Order Book*, *Letter Book*, *Petty Caſh Book*, *Diary*, and *Debenture Book*. In ſome houſes, a *Stock Book* is kept, which ſhews the quantity and price of each article bought and ſold; thus ſerving as a ſubſtitute for real accounts in the ledger; a purpoſe which is ſometimes effected by the *Warehouſe Book*. It ſhould be obſerved, that the *Account Current Book* is univerſally neceſſary, as it ſhews the ſtate of each perſonal account in the ledger drawn out in a detailed and ſimple form, in order to tranſmit a copy or duplicate of each perſon's account to him at the period of ſettlement.

Factorage and Exchange Accounts.

When a merchant and his agent or factor reſide in countries where different currencies are uſed, the factor keeps his employer's accounts in the currency of his own country, and the employer, that their books may agree, keeps the ſame accounts in the ſame currency; but he alſo allots an adjoining column in his ledger for the correſponding value in his own money, by which he aſcertains what profits or loſſes may ariſe from the fluctuation of exchange.

In order to explain ſuch an exchange account, the following has been ſelected from the ledger of a London merchant, who (as appears by the ſtatement) remitted bills to his factor at Hamburgh, and drew upon him for his reimburſement or returns; he therefore debits his factor for the remittances, and credits him for the drafts; the different amounts are firſt entered in the inner columns in banco marks, and then in the outer columns in ſterling, according to the rate of exchange at which they were negotiated, and hence ariſes the profit or loſs: thus, if the merchant buys the bills which he remits at a cheaper rate of exchange than he ſells the drafts which he draws on his factor, there is a gain; but if otherwiſe, a loſs. On the ſame principle, if he had paid debts which he owed, or received debts due to him at a more advantageous rate of exchange than thoſe debts were contracted for, there would have been a gain, but a loſs if the contrary.

An exchange account is balanced by firſt comparing the inner columns; and when they are equal, there is nothing due from one party to the other. The difference between the outer columns is profit and loſs; but if the inner columns be unequal, the balance is what one party owes to the other, which muſt be carried to the outer column at the current rate of exchange, and then the difference between the outer columns is the profit or loſs.

The letters M|A (my account) are uſed by the merchant in keeping the account which his factor likewiſe keeps, who, in ſtating the ſame tranſactions, annexes to his employer's name H|A (his account); and their ledgers are reverſed with reſpect to the *Dr.* and *Cr.* ſides. Thus, the factor, in his account of the following tranſaction, debits his employer for the drafts or bills drawn on him, and credits him for the remittances which he receives; and as all the bills were drawn in marks (the money of the place where they were to be paid), the factor has no concern with any other money; therefore, he debits his employer for commiſſion, brokerage, diſcount, and poſtage, in marks, for which his employer alſo credits him, and values thoſe marks at the rate of exchange which exiſts when the account is balanced.

There are other kinds of exchange accounts kept between Cambiſts, or dealers in exchange, who reſide in different countries, and who agree to tranſact each other's buſineſs (commiſſion free), and divide the gains or loſſes. Such accounts, like all other partnerſhip concerns, require intereſt calculations, according as one party may be in advance for the other: this is the caſe when bills remitted are at a long date, and drafts at a ſhort one, or the contrary; but it frequently happens that one party may be in advance for ſums which have not been received by the other party, who is therefore only anſwerable for the advances in his poſſeſſion, and the intereſt on the remainder ſhould be paid out of the general profits.

Theſe exchange accounts are kept by both parties according to the following plan; and when they agree, the *Dr.* ſide of one account is equal to the *Cr.* of the other, and the inner columns of one to the outer columns of the other, and *vice verſâ*.

Dr. Mr. JOHN FACTOR, of Hamburgh, M|A. *Cr.*

		Banco Marks.	S.	P.	Rate.	£.	s.	d.			Banco Marks.	S.	P.	Rate.	£.	s.	d.
1801.									1801.								
Jan. 30.	To Balance of old account -	1182	11	0	31	101	14	9	July 17	By Draft, *a* 2½ Us -	9718	4	0	31 4	827	1	8
18	To Remittance -	9500	—	—	31 8	800	0	0	24	By ditto, *a* 2 Us -	15002	8	0	31 3	1306	17	7
25	To ditto - -	14175	—	—	31 6	1200	0	0	Dec. 31	By Commiſſion, Diſcount, Brokerage, &c. -	457	11	—	31 8	38	10	10
Dec. 30	To Balance carried to new account - -	320	12	0	31 8	27	0	0									
31	To Profit and Loſs gained by the re-exchange -	- - -	—	—	- -	43	15	4									
		25178	7	0		2172	10	1			25178	7	0		2172	10	1
										By Balance brought down	320	12	0		27	0	0

* * *

Book *of rates*, is a book eſtabliſhed in parliament, ſhewing at what value goods, which pay the duty of tonnage and poundage, are to be reckoned at the cuſtom-houſe. See Custom, Duty, Poundage, and Tonnage.

The book of rates annexed to the act of tonnage and poundage made in the 12th year of king Charles II. was ſubſcribed with the hand of ſir Harbottle Grimſtone, then ſpeaker of the houſe of Commons. An additional book of rates of goods and merchandizes uſually imported, and not particularly rated in the former, with rules, orders, &c. was ſigned by Spencer Compton, eſq. ſpeaker of the houſe of commons, 11 Geo. I. c. 7.

Aliens uſed to pay a larger proportion than natural ſubjects, generally called the aliens' duty; now repealed by ſtat. 24 Geo. III. ſeſſ. 2. c. 16. except as to ſcavage duties, granted to the city of London. By ſtat. 27 Geo. III. c. 13. called the "Conſolidation Act," all the former ſtatutes, impoſing duties of cuſtoms and exciſe, were repealed with regard to the quantum of the duty; and the two books of rates above-mentioned, were declared to be of no avail for the future; but all the former duties were conſolidated, and were ordered to be paid according to a new book of rates annexed to that ſtatute. By the improvement of this ſtatute, the duty upon the exportation or importation of any article may be eaſily found, or the exciſe duty to which any commodity is ſubject, in an alphabetical table.

Book-seller, a profeſſed trader in books; whether he prints them himſelf, or procures them to be printed by others, for ſale.

Book-ſellers, among us, are the ſame with *bibliopolæ* among the ancients, whoſe office was diſtinct from that of *librarii*. Petty dealers, or venders of ſmall ware, like our publiſhers, were more particularly denominated *libelliones*. At Rome, the Argiletum was the mart of books, as St. Paul's Church-yard, or Fleet-ſtreet, and Paternoſter-row, have been among us; whence that of Martial.

> *Argiletanas mavis habitare tabernas,*
> *Cum tibi, parve liber, ſcrinia noſtro vacent.*

Book-ſellers are a kind of agents, or curators in the republic of letters: in many places they are ranked among the members of univerſities, and entitled to the privileges of ſtudents: as at Tubingen, Saltzburg, and Paris, where they have always been diſtinguiſhed from the vulgar and mechanical traders, and exempted from divers taxes and impoſitions laid on other companies.

Formerly the offices of book-ſellers and printers were united in the ſame perſons. Paper, and all other materials, as well as labour, were, in the infancy of the art, exceedingly dear; and, on the other hand, the purchaſers of books were few, partly becauſe the price of them was high, and partly becauſe knowledge being leſs widely diffuſed, they were not ſo generally read as at preſent. For theſe reaſons, many of the principal printers, notwithſtanding their learning or ingenuity, became poor. The printers were, therefore, induced to give up the book-ſelling part of the buſineſs, and to retain only that of printing. Sometimes, indeed, there were rich people of all conditions, particularly eminent merchants, more eſpecially in Germany, who cauſed books, which they ſold, to be printed at their own expence. Thus Henry Stephens was printer at Paris to Ulric Fugger at Augſburg, from whom he received a ſalary for printing the many MSS. which he purchaſed. In ſome editions, from 1538 to 1567, he ſubſcribes himſelf "Henricus Stephanus, illuſtris viri Hulderici Fuggeri typographus." In like manner, towards the beginning of the 17th century, a ſociety of learned and rich citizens of Augſburg printed a great number of books, which had commonly at the end theſe words: "Ad inſigne pinus." Printing, therefore, thus gave riſe to a new and important branch of trade, that of book-ſelling, which was eſtabliſhed in Germany, chiefly at Frankfort on the Mayn, where is a ſtreet, conſiſting of ſeveral large book-ſellers' ſhops, and called "Book-ſtreet."

Labbe gives a liſt of learned book-ſellers, moſt of whom were alſo authors. Of late days, book-ſellers have drawn their buſineſs into leſs compaſs, and leaving the labour of compoſing books to one ſet of perſons, and that of printing them to another, content themſelves with the gainful part; thus miniſtering to the republic of letters not with the head, or the hand, but the purſe only.

In this view, they have been very important and uſeful agents between authors and the public; and have contributed, in no ſmall degree, to the encouragement of genius and literary induſtry, and the ſpread of ſcience. There are few authors, who have undertaken the printing and publiſhing of any work likely to be tranſmitted to poſterity, without being connected with ſome book-ſeller or book-ſellers, eminent in their profeſſion.

The fairs of Frankfort and Leipſic are famous for the reſort of book-ſellers, not only from all parts of the empire, but Holland, Flanders, &c. They have each their ſhop or warehouſe, over which is inſcribed the name of ſome celebrated book-ſeller of former times; *officina Elzeviriana*, *Frobeniana*, *Morelliana*, *Janſoniana*, &c.

An acquaintance with the book-ſellers' marks or ſigns, frequently expreſſed on the title pages of their books, is of ſome uſe; becauſe many books, eſpecially in the 17th century, have no other deſignation either of printer, book-ſeller, or even city. The *anchor* is the mark of Raphelengius at Leyden; and the ſame with a *dolphin* twiſted round it, of the Manutii at Venice and Rome; the *Arion* denotes a book printed by Oporinus at Baſil; the *caduceus*, or *pegaſus*, by the Wecheliuſes at Paris and Frankfort; the *cranes*, by Cramoiſy; the *compaſs*, by Plantin at Antwerp; the *fountain*, by Vaſcoſan at Paris; the *ſphere* in a balance, by Janſon or Blaew, at Amſterdam; the *lily*, by the Juntas at Venice, Florence, Lyons, and Rome; the *mulberry-tree*, by Morel at Paris; the *olive-tree*, by the Stephenſes at Paris and Geneva, and the Elzevirs at Amſterdam and Leyden; the *bird between two ſerpents*, by the Frobeniuſes at Baſil; the *truth*, by the Commelins at Heidelberg and Paris; the *Saturn*, by Collinæus; the *printing-preſs*, by Badius Aſcenſius, &c.

Chevillier ſhews, that the univerſity of Paris had formerly the ſole power of creating and appointing book-ſellers, who were to take an oath to the univerſity; and were reputed part of the academical body, and as ſuch entitled to the exemptions of the other members thereof. They were to give ſecurity to the univerſity for their behaviour, and produce atteſtations of their capacity for the diſcharge of their office: the univerſity alſo depoſed and expelled them at diſcretion: they were obliged to appear at all aſſemblies of the univerſity, when ſummoned, and aſſiſted at the public proceſſions thereof: they were obliged to lend their books to be read, or even copied by ſuch as were diſpoſed to borrow, on certain conditions, preſcribed by the univerſity. If they kept any books by them which were not correct, the univerſity puniſhed them: they were not allowed to buy any book of a ſtudent, without leave of the rector; nor were they allowed to gain above four *deniers* in a *livre*, by any copies ſold to the members of the univerſity. Every book-ſeller was obliged to have a catalogue of all his books hung up in the ſhop, with the prices as rated by the univerſity: no book-ſeller, who had not taken the oaths to the univerſity, might ſell a book of above ten *ſols* value. Diſſ. de l'Orig. de l'Imprim. l. iv.

This ſtate laſted from the thirteenth century to the invention of printing, and even till the end of the fifteenth century; during which time there were only allowed twenty-four book-ſellers, two binders, two illuminers, and two ſworn book-writers, or copyiſts. But from that time the kings of France began to take cognizance of them; Louis XI. thought fit to preſcribe ſome new regulations in 1467. Under Francis I. the book-ſellers were brought wholly under the royal authority, and received ſtatutes from the king.

The chief ſcience of book-ſellers, is the knowledge of the titles, different editions, prices, and ſcarcity of books, without regard to their contents, or qualities, otherwiſe than as theſe affect the ſale of them. See Literary Property.

Book-worm, in *Entomology*. It would be no eaſy taſk to ſay of what preciſe deſcription thoſe creatures are, which the old writers meant by the indefinite expreſſion of *Book-worm*. They ſpeak of it as an inſect of the mite kind, which afterwards becomes a fly, bred from eggs depoſited in the month of Auguſt in books, eſpecially in the leaves neareſt the covers; and which, upon the whole, bears a ſtrong reſemblance to the mite or *blatta* found in *corn*. All this muſt naturally lead to a concluſion, that, under the general appellation of book-worm, they included every inſect of whatſoever kind that was known to be deſtructive to books. Among this hoſt of latent enemies to our libraries, the mite is highly injurious. When books are careleſsly left expoſed in damp places for any length of time, they ſeldom eſcape the ravages of this imperceptible creature. The ſpecies *deſtructor* is very detrimental, as is likewiſe *eruditus*; the latter of which directs its attacks to thoſe parts which are ſewed together, or glued down. Both ſpecies are inviſible to the naked eye, but their preſence is eaſily known by the ill effects they produce. Another miſchievous creature is the larva of a ſmall moth of the tinea kind, which is inſinuated in the egg ſtate into the paper, and, hatching, the larva gnaws cylindrical cavities through the leaves, and ſpins a web, in which it lies ſecure, till after paſſing through the pupa ſtate it becomes a moth. The larvæ of ſeveral ſpecies of the dermeſtes, in like manner, prey upon books, attacking the leather covers as well as the paper. Of this kind, Dermeſtes lardarius is one of the moſt injurious. The mixture of the juice of wormwood, and other bitter ingredients, in the paſte employed by book-binders, as an expedient for the ſecurity of books againſt the attacks of thoſe inſects, is of no utility. Mineral ſalts are recommended for this purpoſe inſtead of it, under an idea, falſely conceived, that inſects, in that caſe, would not prey upon them. Mr. Prediger, among other inſtructions to German book-binders, printed at Leipſic in 1741, adviſes their making paſte of ſtarch inſtead of flour: he wiſhes them to powder ſlightly the books, the covers, and even the ſhelves on which they ſtand, with a mixture of powdered alum and fine pepper; and is alſo of opinion, that in the months of March, July, and September, books ſhould be rubbed with a piece of woollen cloth ſteeped in powdered alum. *Melang. d'Hiſt. Nat.* t. v. 296. For the preſervation of books from the depredations of the inſects above deſcribed, it will be only requiſite to attend occaſionally to wipe and duſt them, obſerving that the library be not kept in a damp ſituation. Wiping, and an expoſure of the book to the heat of a good fire, will immediately deſtroy the mites contracted in the damp, and, of courſe, prevent farther injury from that race of vermin. Corroſive powders, even arſenic itſelf, would be employed in vain for the deſtruction of the larva either of the *tinea*, or the *dermeſtes*; but the fumigation of tobacco, a cloſe heat, like that of a ſlow oven, or the ſcent of camphor, will effectually deſtroy them. The laſt remedy we are certain, from experience, to be excellent. Muſk might, perhaps, anſwer nearly as well; or, laſtly, if alum be preferred, let it be firſt burnt to a powder. When M. Prediger recommended his preparation of powder-alum, he did not ſeem to be aware, that if employed in a crude, unburnt ſtate, it could produce no effect upon the inſects intended to be deſtroyed.

BOOKING, among *Merchants*, &c. the making an entry of any matter in the journal. See Book, Book-keeping, and Journal.

BOOM, in the *Sea-language*, a long pole employed in extending the ſails of a ſhip, principally in moderate breezes of wind. Of theſe there are various kinds, according to the purpoſes for which they are intended.

Booms, ſimply ſo called, are thoſe employed in extending the lower ſails when the ſhip is going large; which is done by putting one end of the boom into the clue of the ſail, and the other end to a but againſt the ſide of the ſhip. Theſe booms are retained in their proper poſitions by means of ropes called *guys*.

Driver-boom, is that which is uſed in extending the lower part of the driver.

Jib-boom, is a ſpar run out from the bowſprit, and is, therefore, a continuation of it, in the ſame manner as the top-maſt is that of the maſt. Upon this boom the jib, in ſquare-rigged veſſels, is ſet; and hence its name. In ſome veſſels, the length of the boom is ſo much increaſed, as to carry a flying jib.

Main-boom, is that which ſerves to extend the lower part of the main-ſail in veſſels having only one maſt: in brigs, &c. it extends the lower part of the fore and aft main-ſail, the upper part, in either caſe, being extended by a gaff.

Spanker-boom, a boom projecting from the mizen-maſt, conſiderably beyond the taffrail, by which a larger ſail can be extended than by the common boom.

Studding-ſail-booms, are booms run out from the yard arms, from which the ſtudding-ſails are ſuſpended.

To Boom off, is to puſh any thing away, as a ſhip, &c. by means of a rod or boom.

Boom alſo denotes a pole with a buſh or baſket on the top, placed to direct ſhips how to ſteer into a channel; otherwiſe called a beacon.

Boom likewiſe is uſed, in *Marine Fortification*, to denote a cable or cables ſtretched athwart the mouth of a river, or harbour, with yards, top-maſts, battlings, or ſpars of wood, laſhed to it, and girded with iron hoops rivetted together and nailed to the ſpars, to prevent an enemy's entering. Such a boom M. Chateau Renault had with diligence and art prepared at Vigo, for the defence of the plate fleet lying there in 1702; but how ſtrong ſoever, it was forced by Vice-Admiral Hopſon, on the Torbay.

To lay a boom, provide a great number of wooden battlings or ſpars, of about 20, 30, or 40 feet length, and between 5 and 10 inches diameter; then moor two boats, having a ſheet-anchor in each, in the place near one ſide of the river where it is intended the boom ſhall begin; bend two cables to theſe anchors, and round them place the ſpars or poles, frapping on each with rattling ſtuff, or with four-inch rope, until the boom is 7, 8, 9, 10, or more feet in diameter, according to the hands employed, the cables being in the middle; then, with iron hoops rivetted together, worm the boom, and drive through the hoop a nail into almoſt every ſpar. After having wrought a good birth for the anchors, drop them, and continue the work till it is brought near the other edge of the river, and there drop two anchors more, with the cables bent to them. Over all laſh the ſpare yards and top-maſts, with the top-chains, ſo far as the channel goes. To that part of the cable within the boom, over the channel, let two or more cables be faſtened, and bent to anchors laid down the ſtream; over the clinch of theſe cables let battlings or ſpars be wrought for near 15 fathoms down the ſtream, that the enemy may not cut theſe cables. Theſe will be ſerviceable when the enemy's ſhips come "ſtemlings" againſt the boom; for if he force it in one place, the whole will not be opened by that fracture. In places where wood is ſcarce, and ſpars cannot be readily procured, or in caſes, where there is not time enough for preparing them, it may be ſufficient to woold two cables together with old ropes, laſhing to them the oars, top-maſts, and yards, and worming the whole about with iron hoops; and let every part be well "payed" with pitch, and ſmall gravel ſtrewed in it while the pitch is warm. A boom ſo prepared cannot be eaſily cut. The boom ſhould generally be ſo contrived, as to open at one end for the paſſage of veſſels; and there are ſeveral ways of doing this. One is, to clinch one end of the cable to an end of a large mooring-chain, the other end floating with a buoy, and this end fixed to the ring of an anchor by a ſhackle. The chain being looſed from the anchor at the ebb, with a ſlack hawſer fixed to it, the boom will ſwing down the ſtream during the ebb; and, upon the flood, the boom may be re-laid, if the enemy appear in ſight, which he muſt do at the firſt of the tide, for, upon the ebb, there is no danger of his coming; becauſe, if the wind is right in, a prudent enemy will not venture againſt the tide, a ſhip then making ſuch wild ſteerage; and ſhould ſhe ground, ſhe muſt lie there till flood, which may prove fatal to her from the batteries aſhore; and, againſt both wind and tide, the enemy cannot come in. On the contrary, ſhould the boom be carried up the flood, and the enemy appear at the beginning of the next flood, the boom cannot be re-laid till the ebb, and before that time the enemy may have accompliſhed his deſign. If acceſs can be had to plenty of timber, a "ſtockado" may be made, by driving ſeveral rows of piles in the channel before the boom; or, if the depth of water ſhould not allow of this work, the trees may be uſefully applied in making a raft to ride before the boom by good anchors, ſo that the cables be made too faſt for the enemy to cut them. Theſe rafts may be of ſingular uſe, by making fires on them, when the enemy appears, which will produce a conſternation, that may cauſe him to chop to anchor, and loſe time, or his tide;

and this may be done each flood, obſerving not to have the ſmoke drive into the works, which might give the enemy too great an advantage.

To lay a boom in a ſtraight channel. If the wind for the moſt part blow obliquely acroſs the river or channel, on the ſtarboard quarter going up the river, and the boom be laid directly athwart the channel, which was the caſe at Londonderry in 1689, when it was forced, the ſhips coming with the tide of flood, and a leading gale, will run ſtemlings againſt it, and poſſibly break it, by ſtriking with a direct force: whereas, if the boom could be laid obliquely athwart the river, nearly in a line with the wind, ſo that the ſhip muſt take it with her bow, the blow would be diverted by the ſhip's caſting, becauſe, in this poſition, the enemy cannot run ſtemlings againſt it; for, in ſailing up the river, the ſhip muſt be near before the helm; and to bring her head to a boom laid obliquely, the helm muſt be put down, and then it will be a great chance if ſhe comes to ſo nicely as to take the boom: beſides, miſtakes may be committed in the confuſion by the man at the helm, and by him upon the land, and by reaſon of the ſmoke; and, excluſively of all theſe, it may be taken for granted, that the ſhip would caſt along-ſide the boom; and then the batteries at the end of the boom on the larboard ſide would rake it fore and aft, while the oppoſite batteries on the ſtarboard ſide, playing on the broadſide with double-round and partridge, muſt make a great ſlaughter among the men cutting at the boom. And if it ſhould not ſwing along-ſide the boom, but lie ſtemlings againſt it, the batteries on the ſtarboard ſide of the river, which are to be made above the weather-end of the boom, will rake it fore and aſt, while thoſe on the larboard ſide play on its quarter, or broad-ſide. The ſhips within the boom, protected by it, ſhould be moored in a kind of half-moon, with their broad ſides flanking the boom: and ſeveral old, or, at leaſt, uſeleſs ſhips, may be ſunk, as ſoon as a ſignal is given from one of the ſorts, ſignifying that the boom will be cut. For this purpoſe, thoſe ſhips ſhould have large ſcuttles ready cut; and, for a farther ſecurity, it would be very proper to have a ſmall boom to divert the enemy, that the ſhips may be ſunk in the channel before he boards them. The chief ſtrength, however, is in the boom; and if a double, triple, or four-fold boom, were laid, provided materials could be procured, and the value of the ſhipping and cargoes warranted the expence and labour, it would make the place ſo much the ſtronger, and the enterprize of the enemy more hazardous. In ſtretching theſe booms, the trouble of many anchors may be ſpared, by making all the cables faſt to the firſt, and ſo let them float in a bight, and by a ſmall anchor ride upon the ebb, to keep clear of one another.

To lay a boom in the bend of a river. From the point formed by its end, ſtretch two booms acroſs the channel, one towards the middle of the oppoſite bight, and the other ſo much higher, as to lie directly athwart the channel, leaving a kind of angular ſpace between them. Next the point from whence the two booms ſtretch, erect a proper fort or battery, to command the channel below and above the bend. On the other ſide of the river, erect another fort or battery againſt the bight a little above the end of the lower boom, and ſo diſpoſed, that its cannon may rake the channel coming up, as well as command both the booms. From ſuch a diſpoſition, it is a great chance if a ſhip anſwer her helm ſo exactly as to time, in bearing or looſing about the point, as to take the boom ſtemlings; and if ſhe ſmite it with her bow, ſhe caſts; and, in either caſe, ſhe will be raked fore and aſt by one fort, and have her broadſide battered by the other. Let ſome old veſſels be fitted up for fire-ſhips, and placed between the two booms; from each ſhip let two hawſers be carried aſhore, one on each ſide, and fixed to crabs, or capſtans ſet up; ſo that as ſoon as the enemy has paſſed the firſt boom, theſe ſhips being ſet on fire, and heaved in their way, nothing can hinder the enemy's deſtruction. The ſhips to be defended may be moored in a half moon, with their broadſides ſo laid as to batter the enemy when he attempts the boom. When no ſtrong attacks by land are to be feared, the mooring of ſhips behind a point is beſt, on account of laying the boom. If the boom ſhould be forced, which muſt be upon the flood, a fire-ſhip, inſtead of falling on board a ſhip thus moored, will, by the tide, be hurried beyond her; and if the place be favourable to the ſhips moored there, it will be found impracticable to board a ſhip thus moored, with ſuch a wind and tide as the enemy muſt have to break the boom, unleſs he expoſe his boats in carrying out an anchor to warp over, which will be a very dangerous attempt, or ſome unaccountable accident intervene.

Boom, *drift*, any yard, ſpar, &c. by which a boat may ride ſtem on to the ſea in a gale of wind, and drive to leeward. The uſual method is to make faſt a rope, about twice the length of the ſpar, to each end of it, and to the middle of the ſpar the boat-rope is to be bent. By this contrivance, a boat, in a gale of wind, will drive ſtem on to the ſea, and the drift-boom will prevent the ſea from breaking over the boat. See Boat.

Boom-*irons*, in a *Ship*, are two flat iron rings formed into one piece one above the other, employed to connect the booms to the yards, &c.; the lower ring is the largeſt, and is driven on the yard. Some boom-irons faſten on the yards with a crotch or ſtrap, ſecured by nails and hoops.

Boom-*Tackle*. See Tackle.

Boom, in *Geography*, the principal place of a canton, in the department of Deux Neuthes, and diſtrict of Anvers. The place contains 3428, and the canton 14,519 inhabitants. The territory comprehends 92½ kiliometres and 11 communes.

Boom-*channel*. See Brandaries.

BOOMAZOOSE, a river of Africa, in the province of Conſtantina, which bounds on one ſide the plain, in which are found the ruins of the ancient Thubuna, now Tubna; and the river Bareekah bounds it on the other ſide.

BOOMBANI, a town of Africa, in Ludamar, north-eaſt of Jarra, and north-weſt of Benowm. N. lat. 15° 10′. W. long. 7° 12′.

BOOMITES, a term uſed by ſome authors to expreſs a kind of agate, of a very remarkable brightneſs and tranſparence, which repreſents the figures of ſhrubs, trees, moſſes, &c. in the manner of the *dendrachates*, a common *mocho-ſtone*. This is, however, very different in the degree of tranſparence and brightneſs.

BOOMKIN. See Bumpkin.

BOOMLAND, or *Laland* bank, in *Geography*, is the ſecond bank from the ſhore, ending nearly againſt Nieuport, on the coaſt of Flanders, betwixt that and Oſtend. Between that and the firſt bank, called the Geer, a channel of eight or nine fathoms paſſes through. All the banks begin off Oſtend, being four, and what are called the Flemiſh banks.

BOOMOE-*Oſte-Sando*, a ſmall iſland near the coaſt of Norway, 12 miles W. of Suroy.

BOOMUGGAR, a diſtrict of Africa, in the province of Conſtantina, which is very fertile, and bears ſeveral traces of ancient buildings.

BOON, in *Ancient Geography*, a port of Cappadocia on the Euxine ſea, between Cotyora and the promontory of Jaſon, according to Arrian.—Alſo, a village of Ethiopia, near the Nile, and on the weſt ſide of it. Ptolemy.

Boon-*Iſland*, in *Geography*, an iſland of America, on the coaſt of the diſtrict of Maine, between the mouth of York river and Cape Neddock.

Boon's-*Creek*, a ſmall north branch of Kentucky river.

Boon's-*Point*, the moſt northerly point of the iſland of Antigua. N. lat. 17° 7′. W. long. 62°.

BOONDY, or Boondee, a town of Hindooſtan, in the country of Agimere, 84 miles S. E. of Agimere, and 65 S. S. W. of Rantampour. The town is ſituated on the ſouthern declivity of a long range of hills, which runs nearly from E. to W. The palace of the rajah, a large and maſſy building of ſtone, is about half way up; and a kind of ſtone fortification runs to the top of the hill. The paſs through the hill lies to the eaſt of the town, and is ſecured by a gate at each end. The poſſeſſions of the rajah of Bondee have been reduced by the irruptions of the Mahrattas, and encroachments of the Kotah family, to the revenue of ſix lacks, of which a fourth part, or chout, is paid to the Mahrattas.

BOONE Bay, lies on the weſtern ſide of the iſland of Newfoundland, 22 leagues N. by E. from St. George's harbour. N. lat. 49° 35′.

BOONEN, Arnold, in *Biography*, a portrait painter, was born at Dort, in 1669; and after having been for ſome time a diſciple of Arnold Verbuis, placed himſelf under Godfrey Schalcken, who recommended to him, after having received his inſtructions for ſix years, to ſtudy nature. By following this advice, Boonen obtained the reputation of a great maſter at the age of 25 years. His ſtyle of colouring was extremely good; the attitudes of his figures were elegantly diſpoſed; his touch neat. The whole poſſeſſed ſuch harmony, and his portraits maintained ſuch a ſtriking likeneſs, that he was ranked among the ableſt artiſts of his time; he had a number of admirers, and a demand for works which he was unable to execute. He had the honour of painting the portraits of the czar of Muſcovy, of Frederick I. king of Pruſſia, of the victorious duke of Marlborough, as well as of many of the princes of Germany, and moſt of the noblemen who attended the czar. His health was impaired by his exceſſive application, and he died rich in 1729. Pillington.

BOONERSCHANS, in *Geography*, a fortreſs of Groningen, on the borders of Eaſt Frieſland, about a league from Dollart bay; 5 leagues S. of Embden.

BOONETON, a ſmall poſt-town of America, in Suſſex county, New Jerſey, on the poſt-road between Rockaway, and Suſſex court-houſe; 116 miles from Philadelphia.

BOONSBOROUGH, a town of America, in the county of Maddiſon, and ſtate of Kentucky, ſeated at the mouth of Otter creek, 30 miles S. E. of Lexington, and as far N. E. from Danville. N. lat. 37° 57′.

BOO-ONK, or Long Neck, in *Ornithology*, one of the names of the little Bittern, *Ardea minuta*. *Ruſſel's Aleppo.*

BOOPHTHALMUS, derived from βȣς, *an ox*, and οφθαλμος, *eye*, *Ox-eye* ſtone, in *Natural Hiſtory*, a name given by Scheuchzer to a peculiar agate, in which there frequently appear circles of conſiderable ſize, reſembling ſome large animal's eye. The ground colour of the ſtone is grey, and the circles of a deep bluiſh black.

BOOPS, in *Entomology*, a ſpecies of Sphex that inhabits Germany, in the environs of Vienna. It is of a black colour, with three ſegments of the abdomen, and the tarſi of the legs teſtaceous. Schranck. Inſ. Auſtr.—Obſ. The eyes are large, the abdomen ovate.

Boops, in *Ichthyology*, a ſpecies of Labrus, found in the ſeas about Japan. It is ſpecifically diſtinguiſhed by having the lower jaw rather longer than the upper one, and having two fins on the back. *Houttuyn act Haarl.* The eyes of this fiſh are very large; the teeth in the lower jaw large and acute.

Boops, a ſpecies of Sparus, of the lineated kind, found in the Japan ſeas. The body is marked with obſcure longitudinal lines, of which the four loweſt are gold and ſilvery. Artedi deſcribes this fiſh. Gmel.

Boops, in *Zoology*, the ſpecific name of the *Pike-headed whale*; *Balæna boops*, of Linnæus. It is diſtinguiſhed by having double ſpiracles on the ſnout, and a horny protuberance at the extremity of the back. Linn. This is the Jupiter fiſh of Anderſon; the French name it la Jubarte.

The pike-headed whale is a native both of the northern and ſouthern ocean, and grows to the length of forty or fifty feet, and ſometimes more. The body is round, eſpecially towards the head, from whence it ſlopes gradually to the tail. The head is large, and of a ſomewhat lengthened form, though terminating in an obtuſe tip. Before the noſtrils are three rows of circular convexities, the utility of which has not yet been aſcertained. Above theſe is the double ſpiracle through which the animal ejects the water in the ſame manner as the other whales. The eyes are ſituated beyond the ſpiracles on each ſide of the head. Juſt behind the orbit of the eyes are the ears, the apertures of which are ſcarcely perceptible. In the upper jaw are numerous laminæ of black whalebone, not above a foot in length. The tongue is large, fat, ſpongy, and furniſhed with an appendage towards the throat, a kind of looſe ſkin like an operculum. The lateral, or pectoral fins are large, oval, entire, on the poſterior edge, but rounded and crenulated on the front. The dorſal fin is of a fatty cartilaginous ſubſtance; it is placed on the hind part of the back, above the vent, in a poſition nearly perpendicular. The tail, which is horizontal, is divided into two lobes, both of which are pointed at the extremity. The ſides below the pectoral fin, together with the anterior part of the belly, is deeply wrinkled with a number of longitudinal plaits, or furrows, which may be contracted or dilated at the pleaſure of the animal. All the upper parts of this kind of whale are of a dark brown, or black colour, obſcurely marbled; the prevailing colour beneath is white, except the furrows between the abdominal plaits, which diſtend as the animal opens its mouth and then appear of a bright red.

This is repreſented as a very timid creature. There are occaſions, however, in which it has evinced a conſiderable ſhare of courage, ſuch as being ſtranded on the ſhore in a ſtorm, when it has been known to defend itſelf with great vigour, and do no ſmall miſchief before it could be overcome. When the male has been ſtranded with the female, of which inſtances do ſometimes occur in the north, they will defend each other with uncommon ſpirit, emitting at the ſame time a moſt horrible grunting noiſe, ſomewhat ſimilar to that of a pig when ſtuck for killing. Its greateſt enemy in its native element is the phyſeter microps. This ſpecies lives principally on the ſalmo arcticus, the ammodytes tobianus, and on the teſtaceous, and other vermes. Its fleſh and oil are uſed like thoſe of other whales. The Greenlanders, where thoſe animals are moſt frequent, call this particular kind keporkak.

BOORS, in *Geography*, the appellation of a very numerous claſs of the inhabitants of Ruſſia, uſually called ſimply boors, but more accurately denominated vaſſal-boors, in order to diſtinguiſh them from the free-boors, or free-peaſants. Theſe latter, though often comprehended among the boors in ſtate papers, and in the enumeration of the people, are really of a different claſs, and form a kind of middle ſtation between the burghers and the vaſſal-boors. In virtue of their freedom, no man can alienate or ſell them; they educate their children as they pleaſe; moſt of them poſſeſs immoveable

moveable property; what they earn cannot be taken from them, provided they duly pay their common taxes, or perform their ſtated taſks of labour; nor are they under any arbitrary command, but, like thoſe of ſuperior rank, own no authority beſides that of the general laws of the ſtate. Among theſe, however, there are various gradations, as all of them do not enjoy the ſame degree of liberty. Some are expreſsly called boors, and without violation of their freedom are treated as ſuch, though with ſomewhat more gentleneſs than vaſſals. Others poſſeſs true civil liberty, and differ only by their place of abode and cuſtomary occupations from town's people. To this claſs belong the foreign coloniſts, ſettled here as huſbandmen or farmers, ſo that by their occupation they are boors; but on account of the land which they poſſeſs, this appellation does not juſtly belong to them. To the free-peaſants we may alſo refer the "Odnodvortzi," as they are called, or one-houſe owners, whoſe perſons are free, and who poſſeſs their houſes with the lands belonging to them, as real property, for which they neither perform feudal ſervices nor give any of their products: but they are obliged to furniſh recruits, to pay the pole tax, and obrok, and they are not allowed to buy villages nor to poſſeſs vaſſals as property. The kozaks, or coſſacks, in all their ſtems and branches, the tartar tribes, the baſhkirs, vogules, kalmucks, with moſt of the monadic tribes, and people of the ſteppes, poſſeſs their lands as real and heritable property, and therefore belong to the ſame claſs of free-peaſants. This is alſo the caſe with reſpect to diſbanded ſoldiers, who live in the country; emancipated ſerfs, who have either bought their freedom of their lord, or obtained it gratuitouſly in reward for faithful ſervice; malo-Ruſſian boors, or boors of Little Ruſſia, who are neither coſſacks nor vaſſals, but free people, and free-peaſants, who belong to their land, and can neither be ſold nor alienated ſeparately from it.

The vaſſal-boors, as diſtinguiſhed from thoſe we have now deſcribed, have no civil liberty; their children belong not to them, but to their manorial lord, on whoſe will they depend; they alſo, with their children, ſingly or in families, may be alienated, ſold, and exchanged; they poſſeſs no immoveable property, but they themſelves are treated ſometimes as the moveable, ſometimes as the immoveable property of another. Theſe boors were originally free, but in Great Ruſſia they became gradually vaſſals, or heritable ſerfs. They are commonly divided into three kinds; but it will be more convenient to diſtribute them into four claſſes. The firſt conſiſts of "crown-boors," called vulgarly, in Livonia, public-boors; who are very numerous, and are the people belonging to the crown. It is neceſſary, however, to diſtinguiſh between boors whom the crown can grant away, as its real vaſſals, and who poſſeſs no real property, and thoſe tribes of people who are owners of immoveable poſſeſſions, and enjoy certain rights and privileges. But there are, excluſively of theſe real vaſſals, boors belonging to the crown, whom the crown cannot with propriety give away, being attached as workmen to the mines, either of the crown, or of private individuals. Moſt of the crown-boors pay, beſides the head-money, the obrok, i. e. a ſum of money for every male ſoul, and this is the only benefit which the crown derives from them. In ſome diſtricts they do taſk-work, or pay of their products; or, in Livonia, they do both inſtead of the obrok. Among theſe there are ſome that are not only in good circumſtances, but even rich; nor would they be ſenſible of their vaſſalage, if the crown did not poſſeſs the power of granting them away. Boors of this claſs are mentioned under ſeveral denominations; as boors of the black plough, boors of the empire, imperial boors, poſt-boors, and court-boors. In the Ruſſian laws and ukaſes, the following eight diſtinct kinds of crown-boors are mentioned, viz. empire-boors, who belong neither to the court, nor to the nobility, nor to the monaſteries, but are members, or burghers of the empire; imperial-boors, who belong to the monarch perſonally, or rather to the court; boors of the black plough, inhabiting a great part of the northern Ruſſia, as far as Archangel; poſt-boors, who are bound, in lieu of the impoſts, to keep poſt-horſes; court-boors, whoſe ſervice and tributes are deſtined to the ſupport of the imperial court; monaſtery-boors, who formerly belonged to the monaſteries, but now every where in Great, Little, and White Ruſſia, are under the kameral-hofs; economy-boors, who in Great Ruſſia were thoſe boors, who, about the year 1764, were taken from the monaſteries and churches, and made ſubordinate to a particular college of economy, eſtabliſhed for that purpoſe, but now aboliſhed, ſo that the boors are under the kameral-hofs, retaining their former name; and peltry tribute paying boors, who deliver their tribute in peltry or furs. One privilege of the crown-boors conſiſts in this, that they may buy of noblemen villages and lands, with the vaſſals belonging to them.

The ſecond claſs of crown-boors bears the denomination of "crown-boors," who belonged formerly to the biſhops, churches, and monaſteries, but were taken from them in the year 1764; they are much the ſame with thoſe of the crown-boors already mentioned, paying particular taxes, and enjoying certain privileges. The boors of the third claſs are, "boors of the mines," who can never be ſeparated from particular mines, and can never be ſold or exchanged apart, though they are transferrable with the works to another maſter. The fourth claſs comprehends "noble, or private-boors;" the condition of theſe depends very much on the humour or caprice of their lord; nevertheleſs, thoſe of them who belong to wealthy lords, requiring neither taſk-ſervice, nor deliveries of products, and contenting themſelves with a moderate obrok, live happily, grow rich, and would hardly exchange their condition with that of many who enjoy nominal freedom. However, the dues from theſe boors to their lord are ſettled by no laws; ſome pay the obrok, others perform taſk-ſervice, or, in lieu of it, deliver certain portions of their natural products; from others all theſe are demanded; but the obrok alone, where the lord is rich, is the moſt uſual. Many take for every male head only three, others five, and ſome from the moſt opulent of the boors, twenty-five rubles, or even more. Thoſe, who fare the worſt, are the private boors, who are obliged to perform taſk-ſervice, in lieu of the obrok, at the mine-works of their lord, which may be at a great diſtance, and with reſpect to whom the diſtance is not conſidered. The late empreſs declared it to be her wiſh and inclination, that vaſſalage ſhould be aboliſhed; or at leaſt, that the condition of the boors might be ameliorated, and all oppreſſive abuſes reſtrained. She actually adopted ſeveral meaſures for accompliſhing her benevolent wiſhes, by inſtituting a regular tribunal for the boors, entirely choſen out of their own body; delivering the boors at the mines from oppreſſion; appointing overſeers and guardians to prevent every ſpecies of violence; and on every occaſion recommending gentleneſs and humanity, of which ſhe herſelf is ſaid to have exhibited an illuſtrious example. Under her adminiſtration inſtances occurred of noblemen, who were brought to a ſevere account for cruelties exerciſed on their vaſſals. The moſt uſual mode by which a vaſſal becomes ſuch, is, by being born of a vaſſal. By the common law of Livonia, every child born of an unmarried female vaſſal belongs, without regard to the father, to the eſtate on which it is born. Peter I., however, by an ukaſe, in 1716, ordained, that ſuch a child ſhould be free, if a free man have cauſed it to be baptized in his name, as father. Vaſſal-boors pay poll-tax, and furniſh recruits; but the obrok of the crown-boors is not to be conſidered as a public tax, but as a ſort of rent for the occupancy of the lands allotted to them, or for permiſſion to follow any trade they pleaſe. Some of the boors riſe by their good behaviour to be officers in the army; and others of them live decently in their houſes, have a ſufficiency of wholeſome food, are neatly dreſſed, and accumulate a trifling capital, though, as they have no unalienable ſecurity of poſſeſſing it, they frequently bury it in the ground. In ſome noble villages the boors diſplay an opulence which would be looked for in vain in other countries. The Ruſſian boor, indeed, may ſoon become rich, as he underſtands the art of turning every thing to profit, and of being content with a little; for his clothes coſt him nothing, being wholly manufactured at home, and with his diet, which, during the long faſts, is extremely meagre, he is ſupplied from his huſbandry.

The value of an eſtate in Ruſſia is eſtimated principally by the number of male boors belonging to it. The national lombard, in all mortgages, which it accepts, takes the boor at forty rubles; but in the ſale of an eſtate they are ſeldom or never eſtimated at ſo low a price. In the government of St. Peterſburg every ſoul is paid for, according to the quality of the eſtate, from 200 to 300 rubles: in other parts of the empire the price is commonly much lower, but at preſent hardly any where under 100 rubles. On many eſtates the boors work three or even four days in every week for the lord. The boors enrolled to the mines have their labours aſcertained by an edict iſſued in 1782; and thoſe belonging to the crown-mines have always experienced a milder lot, as the crown is always intereſted in their preſervation. According to the enumeration of male inhabitants, made from 1781 to 1783, in the forty one viceroyalties of which Ruſſia at that time conſiſted, the number of crown-boors was 4,674,603, and of private boors 6,678,239. Tooke's View of the Ruſſian empire.

BOOR-Worm, in *Natural Hiſtory*, a name given by Rumphius to a ſort of marine worm, that bores through the bottoms of ſhips; perhaps the *Teredo navalis*.

BOOS, in *Geography*, a town of France, in the department of the Lower Seine, the chief place of a canton, in the diſtrict of Rouen; the place contains 650, and the canton 11,144 inhabitants; the territory comprehends 107½ kiliometres, and 21 communes.

BOOSE, in *Rural Economy*, a provincial term, ſignifying a cow-ſtall.

BOOSHOOANAS, in *Geography*, a tribe of the kaffers, or caffres, inhabiting a finely cultivated and incloſed country in ſouthern Africa. The capital, called Leetakoo, is very large and populous, containing, according to the eſtimation of ſome commiſſioners who viſited it in 1801, between 2 and 3,000 houſes, and from 10 to 15,000 people. It lies nearly in S. lat. 26° 30′. and E. long. 27°. The men are of a tall athletic form; of ſimple paſtoral manners; living almoſt entirely on milk and vegetables, and following the occupation of ſhepherds. The women, like other females in ſavage communities, perform all the drudgery of the family. They break up the ground with a kind of hoe made of iron, and afterwards plant it. They alſo conſtruct their habitations, and collect the neceſſary materials. They reap the grain, clear it from the huſk, and lay it up in the granaries, which, with other earthen pots and veſſels, were the work of their own hands. The men prepare the ſkins and hides which ſerve for ſhoes, and make them up into cloaks for themſelves, their wives, and their children. They alſo attend the cattle, milk the cows, and hunt the antelopes and other game, with a weapon called the "haſſagai," which is uſed alſo in battle.

The houſes of theſe people are built in a circular form, being about ſixteen feet in diameter. The lower part, to the height of four feet from the ground, is formed of ſtone laid in clay with wooden ſpars erected at certain diſtances. A fourth part of the houſe, on the eaſt ſide, is open, and the other three-fourths entirely cloſed. The whole building is covered with a round pointed roof in the form of a tent, well thatched with long reeds, or the ſtraws of the holcus. From the centre to the back part of the houſe, a circular apartment is ſeparated, having a narrow entrance, and in this the head of the family takes his nightly reſt; while the other members of the family ſleep in the fore part, or between the large and ſmall circles of the houſe. All the houſes are encloſed by palliſades; and the ſpace between theſe and the dwelling ſerves for a granary, and ſtore for their grain and pulſe. The granaries are conſtructed in the form of oil jars, of baked clay, each of them containing about 200 gallons; and theſe are ſupported on tripods, compoſed of the ſame material, which raiſe them about nine inches above the ground. They are covered with a round ſtraw roof erected on poles, and of ſuch a height as to admit an opening into the jars, the upper edges of which are from five to ſix feet from the ground.

To the north of the Booſhooanas are ſituated, in a cultivated tract of country, under the ſouthern tropic, a much more powerful tribe, called the "Baroloos." The manners of theſe people are kind and ſimple; they are ſaid to be acquainted with the art of ſmelting copper and iron, for which they have erected furnaces; they are extremely rich in cattle; their lands and houſes are much better than thoſe of the Booſhooanas; and their chief town is repreſented as ſo extenſive, that it is ſaid to be a day's journey in length, and extremely populous. Barrow's Travels into the Interior of Southern Africa, vol. ii.

BOOSSEGA, a river of Africa, in the empire of Morocco, near Tetuan, where the Morocco gallies anchor and winter, under the protection of a bad fort.

BOOSURA, in *Ancient Geography*, a ſmall town of the iſle of Cyprus, towards the ſouth-weſt, between Curtum to the eaſt, and Palæ-paphos to the north-weſt. It is mentioned by Strabo.

BOOT, a leathern cover or defence for the leg, uſed chiefly on horſe-back, both to keep the body more firm, and defend the part from the injuries of the weather.

Boots ſeem to have been called thus from their reſemblance to a ſort of jacks, or leathern bottles, formerly in uſe, and called *bottæ*, in the old French *bouts*. Borel derives the name from the ancient French word *bot, a ſtump*, becauſe the boot gives the leg this appearance.

It is not long that the boots uſed on horſe-back have been called by this name. In the reign of Charles VII. of France, they were called *houſes, hoſe*.

The ancient monks uſually wore boots; that is, the denomination of *bottæ*, or *botti*, was given to their buſkins.

The Chineſe had a kind of boots made of ſilk, or fine ſtuff, lined with cotton, a full inch thick, which they always wore at home and abroad.

There are alſo chirurgical boots, for the cure of *vari & valgi*, or crooked and diſtorted legs.

The boot was much uſed among the ancients, by the foot as well as horſemen.

The boot is the ſame with what was called by the ancient Romans, *ocrea;* in middle-age writers, *greva*, *gamberia*, *bainberga*, *bembarga*, or *beuberga*. Du-Cange Lat. Gloſſ.

The boot is ſaid to have been the invention of the Carians; it was at firſt made of leather, afterwards of braſs and iron, and was proof both againſt cuts and thruſts. It was from this that Homer calls the Greeks brazen-booted. Plin. Hiſt. Nat. lib. vii. cap. 56. Homer. Il. vii. v. 41.

The boot only covered half the leg, ſome ſay only the right leg, which was more expoſed than the left, it being advanced forwards in the attack with the ſword; but in reality it appears to have been uſed on either leg, and ſometimes on both. Thoſe who fought with darts, or miſſive weapons, advanced the left leg foremoſt, ſo that this only was booted. Veget. lib. i. cap. 20. Pitiſc. Lex. Ant. tom. ii. p. 309. and Aquin. Lex. Mil. tom. ii. p. 102.

Boots, *fiſhing*, are a thick ſtrong ſort uſed in dragging ponds, and the like. Hunting-boots, a thinner kind, uſed by ſportſmen. Jack-boots, a kind of very ſtrong boot, uſed by the troopers.

Boot, *bordequin*, is likewiſe a kind of torture for criminals; to extort a confeſſion, by means of a boot, ſtocking, or buſkin of parchment; which being put on the leg moiſt, and brought near the fire, in ſhrinking ſqueezes the leg violently, and occaſions intolerable pain.

There is alſo another kind of boot, conſiſting of four thick ſtrong boards bound round with cords; two of theſe are put between the criminal's legs, and the two others placed one on the outſide of one leg, and the other on the other; then ſqueezing the legs againſt the boards by the cords, the criminal's bones are ſeverely pinched or even broken, &c.

The boot is now diſuſed in England; but it ſubſiſts ſtill in ſome other countries.

Boot-*houſing*. See Housing.

Boot *Iſland*, in *Geography*, the moſt weſterly of ſome ſmall iſlands, about 3 leagues on the north of Cajana, or Cayenne, oppoſite to the river ſo called, on the eaſtern coaſt of South America.

Boot-*laſt*, a wooden cylindric inſtrument, uſed by ſhoemakers for widening the leg of a boot. It is ſlit in two parts, between which a wedge is driven when it is put into the boot.

Boot-*top*, that part of the ſide of a ſhip which is contained between the light water mark and the lower edge of the wales. This part is commonly painted white, and, in that caſe, the ſhip is ſaid to have white boot tops.

Boot-*topping*, in *Sea Language*, the act of cleaning the upper part of the ſhip's bottom, or that part which lies immediately under the ſurface of the water, and daubing it over with tallow, or with a coat or mixture of tallow, ſulphur, reſin, &c.

Boot, Gerard, in *Biography*, of a noble family, was born at Gorcum, in Holland, in 1604. After taking his degree of doctor in medicine, he came to England, and was in ſuch eſtimation for his ſkill in his profeſſion, that he was made phyſician to king Charles I. On the death of that prince he ſettled in Dublin, but died ſoon after, viz. in 1650. In 1630, he publiſhed "Heures de recreation," 4to. in the Dutch language; and in 1640, "Philoſophia naturalis reformata," which are not however much eſteemed.

Boot, Arnold, brother to Gerard, and of equal celebrity with him, was well verſed in the Latin, Greek, Hebrew, and Syriac languages. After taking his degree of doctor in medicine he came alſo to London; but on the breaking out of the troubles here, he removed to Ireland, where he practiſed with ſucceſs and reputation for ſome years. Tired at length with the hurry and confuſion incident to civil commotions, and having experienced ſome loſſes, he went to Paris, and there paſſed the remainder of his life in retirement and ſtudy. He died in 1653. He publiſhed, in 1649, "Obſervationes medicæ de affectibus a veteribus omiſſis," 12mo. Haller gives a particular account of this volume, which contains many intereſting and curious obſervations. Haller Bib. Med. Eloy. Dict. Hiſt.

BOOTAN, in *Geography*, a country of Aſia, occupying an interval of a leaſt a degree of latitude, according to Mr. Rennell, between Bengal and Tibet. Tibet and Bootan are often confounded together; but the latter is a feudatory, or dependent province of the former, and borders on Bengal. The capital of this ſouthern province of Tibet is Taſſaſudon, in N. lat. 27° 43′, and beyond this is Paridrong, ſuppoſed to be in 28° at leaſt, though placed by the map of the Lamas in 27°. This place, and the chain of mountains near it, have been regarded as the common boundary between Tibet and Bengal; but Mr. Bogle, who was ſent by Mr. Haſtings on an embaſſy to the grand Lama of Tibet, in 1774, aſſures us, that Paridrong is the frontier town of Tibet towards Bootan, and not towards Bengal. The weſtern limits of Bootan have not been aſcertained by Mr. Turner, to whom we are indebted for a particular account of this country and of Tibet in general. From Mr. Hardwicke's journey to Sirinagur it would ſeem, that the name of Bootan includes moſt of the ſouth of Tibet, particularly thoſe regions which are omitted in the doubtful map of the Lamas, who, in their account of theſe frontiers, uſe Chineſe or Tartaric terms, or, perhaps, invented appellations equally uſeleſs, as they are alike unknown to the Hindoos and the natives. Bootan is a very mountainous diſtrict. The ſouthernmoſt ridge of its mountains riſes near 1½ mile perpendicular above the plains of Bengal, in a horizontal diſtance of only 15 miles; and from the ſummit, the aſtoniſhed traveller looks back on the plains, as on an extenſive ocean beneath him. Through this ridge there are not many paſſes, and all of them are fortified. The road between Bengal and Taſſaſudon lies chiefly over the ſummits of ſtupendous mountains, or along the borders of craggy precipices; ſo that it is difficult to aſcertain the direct diſtance. Between Taſſaſudon and Paridrong is a chain of mountains ſtill higher than the others; they are viſible from the plains of Bengal at the diſtance of 150 miles, and are commonly covered with ſnow. Theſe are a continuation of the mountains Emodus and Paropamiſus of the ancients; and are ſometimes by the moderns erroneouſly called Caucaſus. In the Lamas' map, they are called Rimola, and by the people of Hindooſtan Himmaleh. Mr. Rennell ſuppoſes them to be, in point of elevation, equal to any of the mountains of the old hemiſphere. Bootan, however, with all its confuſed and ſhapeleſs mountains, is covered with eternal verdure, and abounds in foreſts of large lofty trees. The ſides of the mountains are improved by the hand of induſtry, and crowned with orchards, fields, and villages. It has not many wild animals except monkeys, and a few pheaſants. From Mr. Turner's journey, in 1783, we learn, that Bootan does not, probably, contain any metal except iron, and a ſmall portion of copper. The climate of this province may be conſidered as temperate when compared with that of Tibet Proper; and yet its winters are very ſevere. The people of Bootan are ſaid to differ eſſentially and radically from the Hindoos, and ſomewhat to reſemble the Chineſe; whence it may be concluded, with ſome degree of probability, that they belong to that grand race of men, which approaches the Tartaric, though they cannot be regarded as Mandſhurs, Monguls, or Tartars proper. See Tibet.

BOOTES, in *Aſtronomy*, a conſtellation of the northern hemiſphere, being one of the 48 old ones; whoſe ſtars, in Ptolemy's catalogue, are 23; in Tycho's 28; in Bayer's

34; in Hevelius's 52; and in Mr. Flamſteed's catalogue 54; of which one, in the ſkirt of his coat, is of the firſt magnitude, and called Arcturus; which ſee. We have ſome account of the reſpective luſtre of the ſtars in Bootes by Dr. Herſchel in the Phil. Tranſ. for 1797, p. 309.

Bootes is repreſented as a man in a walking poſture, with his right hand graſping a club, and his left extended upwards, and holding the cord of the two dogs which ſeem barking at the great bear. The Greeks give no certain account of the origin of this conſtellation. The poets ſay, that Bootes was Icarus, the father of Erigonus, whom Jupiter placed in the heavens. Others ſuppoſe him to be Arcas, the ſon of Caliſto. Thoſe, who, at a very early period, ſuppoſed the ſtars, which were afterwards formed into the great bear, to repreſent a waggon drawn by oxen, made this Bootes the driver of them; from which circumſtance he was called the waggoner; others continued the office when the waggon was deſtroyed, and made it his office to drive the two bears round about the pole; and ſome, when the greater waggon was changed into the greater bear, wiſhed ſtill to preſerve the form of that machine in the ſtars which conſtitute Bootes.

This conſtellation is called by various other names, as Arcas, Arctophylax, Arcturus Minor, Bubulcus, Bubulus, Clamator, Icarus, Lycaon, Plorans, Plauſtri-Cuſtos, Philometus, Thegnis, and Vociferator; by others, Ceginus, Lanceator, Septentrio; by Heſychius, Orion; by others, Canis Latrans; by the Arabs, Aramech, or Areamech. Schiller, inſtead of Bootes, makes the figure of St. Sylveſter; Schickhard, that of Nimrod; and Weigelius, the three Swediſh crowns. Wolf. Lex. Math. p. 266.

BOOTH, *Botha*, denotes a ſtall, or ſtanding in a fair or market; the term is alſo applied to any temporary ſtructure formed of boards and boughs, and deſigned for ſhade and ſhelter.

Booth, Henry, in *Biography*, earl of Warrington, and baron Delamer, of Dunham Maſſey, an upright ſenator, and diſtinguiſhed patriot, was deſcended from a family of great antiquity, and born in 1651. During the life of his father, he was Cuſtos Rotulorum for the county palatine of Cheſter, and repreſented that county in ſeveral parliaments during the reign of Charles II. His zeal for the proteſtant religion, and for the liberties of his country, was conſpicuous at an early period of his life. He was active in promoting the bill for excluding the duke of York from the throne; he alſo made a ſpirited ſpeech in ſupport of frequent parliaments, and againſt governing by favourites; and he oppoſed, with a manly firmneſs, the unjuſt and arbitrary power aſſumed by the privy-council, of impriſoning men contrary to law. He was anxious likewiſe for preſerving parliament uncorrupt; and with this view contended for an act to puniſh thoſe who had received bribes from the court, as members of the parliament denominated the penſion-parliament. He alſo ſpoke in parliament againſt the corruption of the judges, charging them with having ſold, denied, or delayed juſtice, and recommended an inquiry into their conduct, and that thoſe who were found guilty might receive merited puniſhment. His zeal againſt the papiſts, and his vigorous oppoſition to the arbitrary meaſures of the court, rendered him particularly obnoxious to the governing powers; ſo that he was turned out of the commiſſion of the peace, deprived of his office, as Cuſtos Rotulorum of the county of Cheſter, and committed cloſe priſoner to the tower of London, from which, however, he was after a few months releaſed. After the acceſſion of James II. he was twice committed to the tower; and in the beginning of the year 1686, brought to trial, under a charge of high treaſon. Judge Jefferies maintained, on this occaſion, that it was not neceſſary, in point of law, that there ſhould be two poſitive witneſſes, in order to convict a man of treaſon; and that if there was only one poſitive witneſs, additional circumſtances might ſupply the place of a ſecond. Lord Delamer, who came to the title in 1684 by the death of his father, made an able defence: and was unanimouſly acquitted. From this time he lived in retirement at his ſeat at Dunham Maſſey; but when matters became ripe for the revolution, he exerted himſelf in the promotion of that great event. In a note to Dr. Akenſide's ode addreſſed to the earl of Huntingdon, it is ſaid, that at Whittington, a village on the edge of Scarſdale in Derbyſhire, the earls of Devonſhire and Danby, and the lord Delamer, privately concerted the plan of the revolution. The houſe in which they met is at preſent a farm houſe; and the country-people diſtinguiſh the room where they ſat by the name of the "plotting-parlour." Lord Delamer appears to have been one of the firſt who took up arms in favour of the revolution. After he had joined the prince of Orange, he was deputed, in December 1688, together with the marquis of Halifax, and the earl of Shrewſbury, with a meſſage to king James, intimating to him that he muſt remove from Whitehall. To the reſpectful manner in which he executed this commiſſion, James bore teſtimony, after his retirement to France; obſerving that "the lord Delamer, whom he had uſed ill, had then treated him with much more regard than the other two lords, to whom he had been kind; and from whom he might better have expected it." His lordſhip, however, was fully convinced of the neceſſity of dethroning the king; and in a debate, relative to declaring the throne vacant, he ſaid, that "it was long ſince he thought himſelf abſolved from his allegiance to king James; that he owed him none, and never would pay him any; and if king James came again, he was reſolved to fight againſt him, and would die ſingle with his ſword in his hand, rather than pay him any obedience." Such were his ſervices in ſupport of the revolution, that he was honoured with ſeveral official appointments at that period. The offices of lord lieutenant of the city and county of Cheſter, and of Cuſtos Rotulorum of that county to which he was promoted, he enjoyed for life. Lord Delamer, however, ſeems to have been no favourite at court; his diſpoſition did not ſeem to have been formed for a pliant courtier under any eſtabliſhment; and with reſpect to his political ſentiments, he ſeems to have been one of thoſe who wiſhed for more retrenchments of the regal prerogative than were made at the revolution. But though his lordſhip was removed from the adminiſtration, letters patent were iſſued, in 1690, for creating him earl of Warrington, in the county of Lancaſter, to continue to him and the heirs male of his body; and a penſion likewiſe of 2000l. per annum was granted to him, for the better ſupport of that dignity; but it is ſaid, that this penſion was paid to him only for the firſt half year, and afterwards ſuffered to run in arrear. On the 3d of January 1692-3, the earl of Warrington ſigned a proteſt againſt the rejection of the bill for incapacitating perſons in office under the crown, either civil or military, from ſitting in the houſe of commons. This patriotic peer died at London on the 2d of January 1693-4, in the 42d year of his age. He left four ſons and two daughters; but his ſecond ſon dying in 1758, without heirs male, the earldom became extinct. Mr. Granger ſays, that lord Delamer was "a man of a generous and noble nature, which diſdained, upon any terms, to ſubmit to ſervitude; and whoſe paſſions ſeemed to centre in the love of civil and religious liberty." In every part of his life, indeed, he ſeems to have been actuated by the ſame principles; and in his "Advice to his children," printed in his works, he ſays, "There never yet was any good man, who had not an ardent zeal for his country." In private life, he was a man of ſtrict piety, and of great worth, honour, and humanity. His works were publiſhed in 1694, in one volume 8vo. They conſiſt chiefly of ſpeeches made by him in parliament, prayers uſed by his lordſhip in his family, ſome ſhort political tracts, and the caſe of William earl of Devonſhire. Biog. Brit.

BOOTH, BARTON, an applauded tragic actor, was deſcended from an ancient and reſpectable family in Lancaſhire, born in 1681, and educated under Dr. Buſby at Weſtminſter ſchool. Whilſt he was at ſchool, he exhibited early indications of thoſe talents which qualified him for his future profeſſion; as, beſides his fondneſs for Latin poetry, he was diſtinguiſhed by the grace and energy with which he recited ſeveral paſſages ſelected from it and committed to memory. Flattered by the applauſe which he received in acting a part in a Latin play, performed at ſchool, he acquired, or at leaſt indulged, an inclination for the ſtage; and, eloping from ſchool, at the age of 17, very much to the diſappointment and grief of his father, who deſigned him for the univerſity and the church, he accompanied the manager of an Iriſh theatre to Dublin. On the Dublin ſtage he performed for three ſeaſons with very diſtinguiſhed applauſe; recommending himſelf, particularly in tragedy, by a grave countenance, good perſon, an air of dignity in his aſpect and manner, a fine voice, and a very manly action. Beſides, he ſpoke very juſtly, his pronunciation was very correct, and the cadence of his voice was extremely grateful to the ear. The theatrical reputation which he acquired in Ireland, determined him to return to London in 1701; and being recommended to Mr. Betterton, he was treated by him with kindneſs, and had important parts aſſigned to him at his theatre. After the death of Betterton, he was received into the Drury-lane company, and, by his acknowledged abilities, he roſe to the higheſt rank in his profeſſion, as a tragic actor. When Mr. Addiſon's famous play of Cato was introduced on the ſtage in 1712, as it is ſaid, with political views, and to ſupport the cauſe of the whigs, the part of Cato was aſſigned to Mr. Booth, and it was performed ſo much to the ſatisfaction of the houſe, that both the whigs and tories of that period concurred in beſtowing upon him unuſual and unprecedented rewards. On this occaſion, it is ſaid, that lord Bolingbroke made him a preſent of fifty guineas from the ſtage-box, and that the managers afterwards preſented him with the ſame donation. By the patronage and influence of lord Bolingbroke, he was aſſociated, in 1713, to the patentees of the theatre; and for twenty years conducted himſelf, both as a manager and an actor, with ſuch diſtinguiſhed integrity and abilities, as to ſecure the uninterrupted approbation of the public. He married for his ſecond wife, Mrs. Santlowe, a favourite actreſs, with whom he lived in great harmony, and to whom, in token of his affection, he left his whole fortune, which, according to his own declaration, amounted to no more than two-thirds of what he had received with his wife upon the day of marriage. At length his health began to decline; but ſuch was the high eſtimation in which he was held by the public, that his appearance drew together crowded audiences, whenever the intervals of his diſtemper permitted him to tread the ſtage. But his conſtitution rapidly decayed, and he ſunk under a complication of diſeaſes, May 10, 1733. He was buried privately, according to his own direction, at the pariſh church of Cowley, near Uxbridge, the conſtant place of his ſummer retirement, and no monument was erected to his memory. His wife, however, who ſurvived him forty years, cauſed a monument to be erected in Weſtminſter abbey, in 1772.

As an actor, Booth diſtinguiſhed himſelf by that ſolemn dignity, and rotundity of declamation, which ſerved to mark diſtinctly the cadence and melody of the verſification. Without altogether neglecting the expreſſion of paſſion, his manner ſeems to have been better ſuited to poetical and ſentimental parts, ſuch as that of Cato, and the heroes of Rowe's tragedies, than to the highly impaſſioned. Cibber, however, ſays, that the maſter-piece of Booth was Othello, a character abounding with ſudden turns of paſſion, united with elevated ſentiment and ſtriking imagery. There, ſays Cibber, he was more in character, and ſeemed not more to animate or pleaſe himſelf in it than his ſpectators. To his Cato he gives qualified praiſe, and he aſcribes the reputation acquired by it to ſeveral temporary and incidental circumſtances; but in Othello, he adds, we may ſee him in the variety of nature. Mr. Victor hath taken pains to do juſtice to Mr. Booth, in oppoſition to the lukewarm praiſe of Cibber, and to the reflection contained in Pope's epithet of "well-mouthed," and in the ſevere illuſtration of it by his right reverend annotator; and yet, perhaps, Pope's epithet, though invidiouſly employed, gives a juſt idea of his general manner.

As a man of letters, Booth appears in a reſpectable light; though his indolence prevented him from exerting himſelf much in this way. He tranſlated ſome odes of Horace, and wrote ſeveral ſongs and other ſmall pieces of poetry, which were well received; and he compoſed for the ſtage a maſk, entitled "Dido and Æneas." In his private character, he was juſt and upright; ready to acknowledge and reward merit wherever he found it; ſomewhat rough in his manner, and haſty in his temper, but frank and ſincere in declaring his ſentiments; kind and liberal in his conduct as a manager; reſpectful to his parents; affectionate to his brother and ſiſter; and polite and generous to his friends and acquaintance. He was generally eſteemed by thoſe who knew him; and his death was much regretted. Biog. Brit.

BOOTH' *Bay*, in *Geography*, a town and bay of America, on the coaſt of Lincoln county, in the diſtrict of Maine, about two miles weſt of Pemaquid point. N. lat. 43° 42'. The bay ſtretches within the land about 12 miles, and receives two ſmall ſtreams. On it is a town, having 997 inhabitants; the town and bay were originally called "Townſend."

BOOTIA, in *Botany* (De Neck). See SAPONARIA *Officinalis*.

BOOTY, in the *Military Art*, the moveables taken from an enemy in war, which belonged to the conquerors. Among the Greeks, the booty was divided in common among the army, the general only claiming a larger ſhare. The right of making a diſtribution of it was always conſidered as one of the prerogatives of the general. During the Trojan war, it was laid at his feet; one part he reſerved for himſelf, and divided the remainder either among the chiefs or the ſoldiers. As ſoon as a victory was obtained, the armour was ſeized by the conquerors, or great commanders: and the common ſoldiers were permitted to gather the ſpoils of the dead. Hom. Il. κ 458. ξ. 66.

The Lacedæmonians were forbidden to meddle with the ſpoils of the conquered; and the Spartans had always 300 men appointed to obſerve their actions. Inſtances, however, occur of their dedicating part of their booty to the gods. When any booty of great value was taken, the ſoldiers preſented their general or commander with it; but before the diſtribution of the ſpoils, they ſelected the beſt as an offering to the gods. Eight hundred years after the Trojan war, the generals regulated the partition of the ſpoils taken from the Perſians after the battle of Platæa. They were ſhared among the ſoldiers, after ſetting apart a certain portion to decorate the temples of Greece, and decreeing proportionable rewards to thoſe who had diſtinguiſhed themſelves in the action. From that time, the Grecian generals diſpoſed of the ſums ariſing from the ſale of the plunder; ſometimes depoſiting them in the public treaſury; at other times aſſigning them to defray the expence of public works, or the decoration of temples; enriching their friends and ſoldiers with them; adding them to their own wealth; or at leaſt appropriating to themſelves the third part, which in certain countries was regularly aſſigned them by conſtant uſage. Polyb. Hiſt. l. ii. p. 147.

By the military diſcipline of the Romans, ſpoils taken from the enemy belonged to the republic; particular perſons having no right to them. The generals who piqued themſelves on their probity, carried it wholly to the public treaſury. Sometimes, indeed, they divided it among the ſoldiery, to animate them, and ſerve in lieu of reward. But this diſtribution depended on the generals, who were to conduct themſelves herein with great equity and moderation; otherwiſe it became a crime of peculation to lay hands on the pillage, as regularly belonging only to the ſtate. The conſuls Romulius and Veturius were condemned for having ſold the booty taken from the Æqui. Liv. lib. iii.

Among the Jews, the booty was divided equally between the army and the people, though under the kings a different kind of diſtribution obtained. Numb. xxxi. 27.

Among the Mahometans, two-thirds of the ſpoils are allowed to the army; the other third to God, to Mahomet, and his relations, and to the orphans, the poor, and the pilgrims. Calmet. Dict. Bib. tom. i. p. 321.

Among us, formerly, the booty was ſometimes divided among the ſoldiery. If the general be in the field, every body takes what he can lay hold on: if the general be abſent, the booty is diſtributed among the ſoldiers, two parts being allowed to the cavalry, and one to the infantry. A captain is allowed ten ſhares, a lieutenant ſix, and a cornet four. See Prize.

BOOUROU, in *Geography*, an iſland near the eaſt coaſt of Otaheite.

BOPAL, or Bopaltol, a town of Hindooſtan, in a diſtrict of the ſame name, in the country of Malwa; placed by Mr. Rennell in N. lat. 23° 14′. E. long. 77° 28′. The town is extenſive, and ſurrounded with a ſtone wall; the ſtreets are wide and ſtraight. On a riſing ground, to the ſouth-weſt of the town, is a fort called "Futteh-gurh," newly erected, and not quite finiſhed. It has a ſtone wall, with ſquare towers, but no ditch. The ſpot on which it is erected is a ſolid rock. To the ſouth-weſt, under the walls of this fort, is a very extenſive tank or pond, formed by an embankment, at the confluence of five ſtreams iſſuing from the neighbouring hills, which form a kind of amphitheatre round the lake. Its length is about ſix miles; and from it the town has the addition of "Tal" to its name. Theſe hills, and others in the neighbourhood, contain a ſoft free ſtone, and a reddiſh granite, the latter of which ſeems well fitted for buildings that will reſiſt water, and the injuries of the weather; and it is accordingly uſed in the new embankment which is building at the eaſt end of the lake. From this part iſſues the ſmall river "Patara;" and it is ſaid that the "Betwah" takes its riſe from another part of the ſame. The town and territory of Bopal are occupied by a colony of Patans, to whom they were aſſigned by Aurungzebe. The revenue of Bopal is eſtimated at 10 or 12 lacs of rupees. It does not pay any regular tribute to the Mahrattas; but a handſome preſent is occaſionally ſent to conciliate their friendſhip. The people ſeem to be happy under their preſent government; and the Dewan, by his hoſpitality, and the protection afforded to ſtrangers, has induced the caravans, and travellers in general, to take this road between the Deccan and Hindooſtan. Aſiatic Reſearches, vol. vi. p. 31.

BOPPART, or Boppard, an ancient town of Germany, in the circle of the Lower Rhine, and lower electorate, once imperial, ſeated on the banks of the Rhine, and formerly belonging to the archbiſhop of Treves. Since the French revolution, it is the chief place of a canton, in the department of the Rhine and Moſelle, and in the diſtrict of Coblentz, from which it is diſtant 8 miles ſouth. The place contains 2220, and the canton 7232 inhabitants. At this town a toll uſed to be exacted of veſſels which paſſed along the Rhine. Near the river the town is ſurrounded by high mountains, the ſummits of which are richly covered with woods; and when the foliage appears upon the trees, the country about it forms a ſcene truly pictureſque and extremely luxuriant. On a mountain behind the town was a Benedictine nunnery, called the abbey of Marienberg; and beſides this, there were a convent of Carmelites, and another of Franciſcans, in very romantic ſituations.

BOPPINGEN, an imperial town of Germany, in the circle of Swabia, and county of Oettingen, on the Eger; 5 miles weſt of Nordlingen, and 28 N.N.E. of Ulm.

BOPQUAM, or *M'Quam* bay, lies on the eaſt ſide of lake Champlain, in Swantown, Vermont, and has Hog iſland on the north at the mouth of Michiſcoui river.

BOQUET, a river of America, which paſſes through the town of Willſborough, in Clinton county, New York, and is navigable for boats about two miles, and there interrupted by falls on which are mills.

BOQUINEN, a town of Spain, in Arragon; 18 miles N.W. of Saragoſſa.

BOQUINII, in *Eccleſiaſtical Hiſtory*, a ſort of Sacramentarians, who aſſerted that the body of Chriſt was preſent only in the euchariſt to thoſe for whom he died, that is, the elect. They took the denomination from one Boquinus, a Lutheran divine, who was one of the chief of the party.

BORA, in *Ancient Geography*, a mountain of Macedonia, mentioned by Livy, between Illyria and Epirus.

BORÆTA, a town of India, placed by Ptolemy on the other ſide of the Ganges.

BORABASSOU, in *Geography*, a town of the iſland of Celebes, where are manufactures of cotton and ſilk ſtuffs.

BORACIC Acid, *Acide Boracie*, *Boraxſaure*. This ſubſtance was firſt diſcovered in 1702, by Homberg; who, by heating together in a ſubliming veſſel a mixture of borax and ſulphat of iron, obtained a white cryſtalline ſalt, which from its ſuppoſed medical properties he named *volatile narcotic ſalt of vitriol*, or *ſedative ſalt*. The term *boracic acid* was appropriated to this ſalt by Lavoiſier and his aſſociates, at the general reformation of the chemical nomenclature.

Boracic acid may be prepared in two ways; either by ſublimation or precipitation. The beſt method of obtaining it, according to the former of theſe proceſſes, is as follows:

Take two parts of purified borax reduced to a fine powder, and mix them in a glaſs alembic with one part of ſulphuric acid previouſly diluted with an equal weight of water. On the application of a gentle heat, the borax will diſſolve; and at a boiling temperature, there will firſt ariſe an acidulous water, and afterwards, when the maſs in the alembic begins to grow thick, a light, white, glittering micaceous ſalt will collect in the capital, which is the boracic acid. As this ſalt ſublimes only while the laſt portions of moiſture are evaporating, it is neceſſary to return back the acidulous water repeatedly upon the maſs in the alembic, in order to obtain the whole of the boracic acid; but this being a tedious operation, and generally terminating with the fracture of the alembic, is at preſent but little practiſed. The moſt expeditious and economical way of preparing the boracic acid, is by precipitation; for this purpoſe, take a boiling hot ſaturated ſolution of purified borax in water, and add to it, by a little at a time, ſo much ſulphuric acid as to make the ſolution ſlightly acidulous. The liquor, when cold, will be found to have depoſited a conſiderable quantity of thin cryſtalline plates of boracic acid, and more may be obtained by ſucceſſive evaporation and cooling, till cryſtals of ſulphated ſoda begin to make their appearance. The ſulphuric acid is on ſeveral accounts preferable to any other for the decompoſition of the borax; yet the nitric, muriatic, or even the acetous acids may be made uſe of, and will effect a ſeparation of the boracic acid from the ſoda with which it was united in the borax. The proportion of acid obtained by precipitation, amounts, according to Beaumé, to nearly one half of the borax made uſe of; and it is this kind of boracic acid that has been uſed by moſt chemiſts in their experiments on this ſubſtance. The precipitated acid is, however, by no means pure, as it retains, according to Cadet, a portion of the acid made uſe of in its precipitation, and conſiſts, according to Beaumé, of about

56	boracic acid
14	an impure unſublimable ſalt
30	water of cryſtallization
100	

Sublimed boracic acid is in the form of very minute thin plates, with a ſhining ſilvery luſtre, and remarkably voluminous in proportion to its weight. The cryſtallized acid has the ſame general appearance, only it is in larger plates, and of conſiderably greater ſpecific gravity.

The taſte of boracic acid is ſlightly ſubſaline; it reddens ſyrup of violets, but exhibits very feeble acid characters. It is very difficultly ſoluble in cold water, and requires a conſiderable proportion of hot water; as the hot ſolution cools, it depoſits, in cryſtalline plates nearly the whole of the acid which it had taken up. Alcohol takes up a larger quantity of this ſalt than water does, and burns in conſequence with a green flame. On this account boracic acid has been ſuppoſed by ſome chemiſts to contain copper. But if a piece of paper is dipped in the alcoholic ſolution, and then dried, it will burn with a deep yellow flame; hence it is obvious, that the green tinge in queſtion is only cauſed by a mixture of the yellow flame of the boracic acid with the blue one of the alcohol.

When boracic acid is heated to redneſs in a ſilver crucible, it becomes firſt of a paſty conſiſtence, and then melts into a tenacious glaſs perfectly colourleſs and tranſparent. By expoſure to the air, this glaſs becomes opaleſcent, but does not undergo any other change; it is ſoluble in water, and may be obtained, by cooling and evaporation, in the ſtate of cryſtalline plates as before. When fuſed in an earthen crucible, it diſſolves ſome of the earth, and forms a ſemi-tranſparent glaſs conſiderably leſs fuſible than the pure acid; and when diſſolved in water, and evaporated, it becomes a gelatinous maſs, ſuperficially covered with a few cryſtals of boracic acid.

Neither the oxygenating nor deoxygenating proceſſes appear to have the ſmalleſt effect on this acid; and all attempts to raiſe it to a higher degree of oxygenation, or to decompoſe it, numerous as they have been, have not been attended with the ſmalleſt ſucceſs. It unites in the moiſt way by ſingle affinity with the cauſtic alkalies, and by compound affinity alſo with the earths and metallic oxyds; its attraction, however, is ſo feeble, that it is incapable, when in ſolution, of diſlodging even the carbonic acid from its baſis. But weak as boracic acid is in the moiſt way, its fixity in the fire enables it to ſeparate, in a high heat, the ſulphuric, nitric, muriatic, and all the other volatilizable acids from their baſes, forming with them a genus of ſalts called *borats*, none of which, except the ſub-borat of ſoda, or common Borax, has hitherto been made the object of chemical inveſtigation.

Boracic acid, beſides being obtained from the decompoſition of borax, is alſo found native in certain hot ſprings and lakes in Tuſcany. It is not applied to any medical, chemical, or economical uſe.

BORACITE, *Borazit*, *Wurfelſtein*; *Magneſie boratée*, Hauy. The colour of this mineral is yellowiſh, ſmoke or aſh-grey, paſſing into greyiſh or greeniſh-white. It occurs in ſmall cubic cryſtals truncated on the angles. The cryſtals are for the moſt part opaque, ſome are ſemi-tranſparent, and a few of the ſmalleſt are entirely tranſparent. Their luſtre internally is conſiderable, and of the vitreous kind. The fracture is ſmall and flat conchoidal, paſſing into uneven and ſplintery. The cryſtals are often corroded more or leſs, and then are eaſily pulverizable; but when perfect, they are hard enough to give briſk and lively ſparks when ſtruck againſt the ſteel. Sp. gr. 256.

The boracite, when expoſed to a full red heat, becomes opaque, and loſes about ½ per cent. of its weight, but undergoes no other change; when intenſely heated in a clay crucible, it runs into a yellowiſh glaſs. It is entirely, though with difficulty, ſoluble in muriatic acid by long digeſtion. According to the analyſis of Weſtrumb, it conſiſts of

68	boracic acid
13.5	magneſia
11	lime
1	alumine
0.75	oxyd of iron
2	ſilex
96.25	

Some later experiments, however, of Vauquelin make the proportion of lime to be much ſmaller; and it appears probable, that the only eſſential ingredients of this mineral are boracic acid and magneſia.

Boracite is found near Luneburgh, in the duchy of Brunſwick, lining the ſides of a vein in a hill of ſulphat of lime. The cryſtals from their ſhape were known in the neighbourhood by the name of wurfelſpath, or cubic ſpar, and were ſuppoſed by ſome mineralogiſts to be a variety of quartz. The preſence of boracic acid in them was not ſuſpected, till the analyſis of Weſtrumb, publiſhed in 1788, in the Tranſactions of the Society Nat. Curioſ. Emmerling. Hauy. An. de Chim. v. 11.

BORAGE, in *Botany*. See Borago.

BORAGINEÆ, the ninth order of the eighth claſs of Juſſieu, of which he gives the following natural character. *Calyx* five-parted, permanent. *Corolla* moſt commonly regular. *Stamens* generally five. *Germ* ſimple, or four-lobed. *Style* one. *Stigma* either bifid, furrowed, or ſimple. *Seeds* moſt frequently four, either in a capſule or a berry; or elſe apparently naked, obliquely attached to the ſtyle, and for the moſt part incloſed in the permanent calyx. *Corculum* without a periſperm. *Stem* in moſt herbaceous; in a few, a ſhrub or a tree. *Leaves* alternate, often rough.

The genera are thrown into five diviſions. 1. Fruit, a berry, ſtem, a ſhrub or a tree. Patagonula, cordia, ehretia, menais, varronia, tournefortia. 2. Fruit, one or two-capſular, herbaceous. Hydrophyllum, phacelia, elliſia, dichondra?

chondra? meſſerſchmidia, cerinthe. 3. Fruit, four naked ſeeds; throat of the corolla naked; for the moſt part herbaceous and rough. Coldemia, heliotropium, echium, lithoſpermum, pulmonaria, onoſma. 4. Fruit, four naked ſeeds; throat of the corolla cloſed; herbaceous, and generally rough-leaved. Symphytum, lycopſis, myoſotis, anchuſa, borago, aſperugo, cynogloſſum. Obſ. The laſt two diviſions would more logically have been thrown into one, with two ſubdiviſions. They conſtitute Linnæus's natural order, aſperifoliæ. 5. Allied to the boragineæ; herbaceous. Nolana, ſiphonanthus? falkia, the connecting link between the boragineæ and convolvoli.

La Marck (Encyc. Method.) gives the boragineæ a character which belongs almoſt excluſively to the aſperifoliæ of Linnæus. He has only three diviſions: 1. Four germs, or one, four-parted; the proper aſperifoliæ. 2. Five germs, or one with five diviſions; nolana, monnieria, raputia. The natural ſituation of the laſt two was left undetermined by Juſſieu. 3. One undivided germ; comprehending the firſt and ſecond diviſion of Juſſieu. He has placed this diviſion laſt, apprehending, and ſurely not without reaſon, that it ought to form a diſtinct order between the boragineæ and convolvoli.

The boragineæ compoſe the twelfth family of the eighth claſs of Venterat, in his "Tableau du regne vegetal." It contains only the aſperifoliæ, with the Linnean character, except that, in concurrence with Gærtner, the fruit is conſidered as conſiſting of two or four nuts; in the former caſe each two-celled and two-ſeeded; in the latter, each one-celled and one-ſeeded; the ſeeds attached either to the inner ſide or baſe of the nut by a filiform or capillary peduncle or placenta.

BORAGO (derivation of the name uncertain). Linn. gen. 188. Reich. 200. Schreb. 248. Willd. 283. Juſſ. 131. Gært. tom. i. 415. Smith Flor. Brit. 78 Claſs, *Pentandria Monogynia*. Nat. Ord. *Aſperifoliæ—Boragineæ* Juſſ.

Gen. Charac. *Cal.* perianth five-parted, permanent. *Cor.* monopetalous, wheel-ſhaped; border five-parted, flat; ſegments acute; throat crowned with five emarginate, obtuſe prominences. *Stam.* five, awl-ſhaped, converging; anthers oblong, fixed to the inſide of the filaments in the middle, converging. *Piſt.* germs four, ſtyle filiform, longer than the ſtamens: ſtigma ſimple. *Pericarp* none; calyx larger, inflated, containing the ſeeds. Linn. Schreb. La Marck, Juſſ. *Pericarp,* nuts four, boney, ovate, a little compreſſed, ſlightly convex on one ſide, ſmooth, ſhining, light cheſnut, obſoletely angular, marked with a longitudinal furrow in the middle, and with parallel, tranſverſe wrinkles, imperforate, one-celled, without valves. *Seed* ſolitary, ovate-acuminate, almoſt black. Gært.

Eſſ. Char. *Cor.* wheel-ſhaped; border ſpreading, acute; throat cloſed with rays.

Species, 1. B. *officinalis.* Eng. Bot. 36. common borage. "All the leaves alternate; calyxes ſpreading." Linn. Root long, fleſhy, tender, white, fibrous; ſtem about a foot and a half high, branched, hollow, ſucculent, cylindric; leaves alternate, large, oval-lanceolate, obtuſe, wrinkled, deep green, and, as well as the ſtem, rough, with ſharp, rigid, white briſtles; the lower on petioles, the upper ſeſſile; flowers terminating on branched peduncles, blue, fleſh-coloured, or white; calyx and corolla divided to the baſe; tube ſhort and white; filaments ſhort, white, ſpringing from the claws of the petal, with a ſharp blue proceſs, where the dark purple or blackiſh anthers are inſerted. Said to have come originally from Aleppo, but now naturalized in many parts of Europe, and not uncommon in the neighbourhood of London on dunghills and among rubbiſh, where it is ſcarcely more than biennial. It was formerly cultivated in gardens, on account of the ſuppoſed cordial virtues of its flowers, but they have long loſt their reputation, having neither warmth, pungency, ſmell, nor any other indication of active qualities. Its root, ſtem, and leaves contain an inſipid viſcous juice, which, on being boiled a conſiderable time, form cryſtals of nitre. A clarified ſyrup formed from it is preſcribed by the French phyſicians in pleuriſies, and other diſorders which require a cool treatment. In Italy its young and tender leaves are in common uſe, both as a pot-herb and a ſallad. In France its flowers, with thoſe of naſturtium (tropæolum), are put into ſallads as an ornament. In England the flowers and upper leaves are uſed as an ingredient in that ſummer beverage compoſed of wine, water, lemon-juice, and ſugar, called a cool tankard to which they ſeem to give an additional coolneſs. 2. B. *indica.* "Leaves of the ramifications oppoſite, embracing the ſtem; folioles of the calyx ſagittate." Linn. "Peduncles one-flowered." Miller. An annual plant, rarely riſing a foot high. Stem branching, rough, with ſmall, white, ſtiffiſh hairs; leaves lanceolate, rugged, only the lower ones oppoſite; flowers axillary, ſhorter than the leaves; folioles of the calyx five-angled, hiſpid, expanding at the baſe into two remarkable ſharp-pointed auricles; corolla white, pale-blue, or fleſh colour, with five ruſt-coloured ſpots. A native of the Eaſt Indies. 3. B. *africana.* "Leaves of the ramifications petiolate; folioles of the calyx ovate, acute, erect." Linn. "Peduncles many-flowered." Mur. Whole plant hiſpid, with ſtiff, fragil briſtles, ſeven or eight inches high, more branching than B. indica. Leaves large, ovate, and oppoſite; floral leaves ſmall and alternate; corolla ſmall, blue, yellow within, with five purpliſh ſpots; peduncles terminating, divided, and almoſt racemed; folioles of the calyx entire. Native of the cape of Good Hope, cultivated by Mr. Miller in 1759. 4. B. *zeylanica.* "Leaves of the ramifications ſeſſile; peduncles one-flowered; calyx without ears." Linn. Mant. Stem hiſpid, branching about a foot high; leaves of the ſtem oppoſite, lanceolate, hiſpid; of the branches alternate, more numerous, ſmaller, and more acute; peduncles axillary, filiform, ſolitary, longer than the leaves; calyx the length of the corolla, erect. A native of the Eaſt Indies. 5. B. *longifolia.* Poiret. Barbary. "Leaves linear-lanceolate, ſeſſile, alternate; calyx very hairy at the baſe." Willd. Allied to the foregoing, but ſufficiently diſtinct. Segments of the calyx linear, without ears. A native of Barbary. 6. B. *orientalis.* "Calyxes ſhorter than the tube of the corolla; leaves cordate." Linn. Petiolate; peduncles many-flowered; ſtamens longer than the corolla, hairy. La Marck. Root large, fleſhy, black without, whitiſh within, full of an inſipid viſcous juice; ſtem more than two feet high; root leaves large, on long peduncles, cordate; ſtem leaves alternate, ſmall, ovate, on membranous petioles, channelled at the baſe; flowers axillary, and terminating, panicled; tube of the corolla longer than the calyx, white; border white, reflexed. A native of the country about Conſtantinople. 7. B. *cretica.* "Calyxes the length of the tube of the corolla; leaves ovate." Willden. Taken up from Tournefort, cor. 6, and deſcribed from a dried ſpecimen. Segments of the calyx ovate rhomboid, very entire; flowers red.

Propagation and Culture. The firſt is a hardy annual, which will ſow its own ſeeds, and come up without care. The ſeeds of the ſecond, third, and fourth ſhould be ſown upon a hot-bed in March, and the plants ſhould afterwards be ſeparately planted in a ſmall pot, with light earth, and plunged in a new hot-bed; in hot weather they ſhould be allowed a good deal of air. The ſixth is a perennial, eaſily propagated by the root, which may be parted in autumn, and planted in a dry ſoil and warm ſituation.

BORAGO (Moriſon). See CYNOGLOSSUM *omphalodes*.

BORAHS, Lat. *Boeroſia*, in *Geography*, a town of Sweden, in the province of Weſt Gothland, ſituate in a mild and mountainous country, on the river Wiſka. It was founded by Guſtavus Adolphus, and in 1622 endowed with ſeveral privileges. Its inhabitants are a ſort of itinerant pedlars, who deal in linen, and traverſe the kingdom for this purpoſe. This town was deſtroyed by fire in 1727; but was afterwards rebuilt, and continues in a good condition. It has a ſpring of medicinal water; and has the forty-third vote in the diet.

BORAK, among *Mahometans*, a fabulous animal, ſuppoſed to be of a middle kind between an aſs and a mule, whereon the prophet was carried in his nocturnal flight from Jeruſalem into the Heavens.

This animal the Arabs called *Al Borak*, q. d. *ſhining*. The night when the journey was performed is called *Leilat al Meerage*, i. e. *the night of aſcenſion;* and the flight itſelf *Al Meſra*, concerning which there is a multitude of traditions.

BORANA, in *Entomology*, a ſpecies of TORTRIX that inhabits Sweden. This is of a large ſize, with the head cinereous, and thorax fuſcous. Fabricius, who deſcribes it in his Mantiſſa, thus defines it ſpecifically: wings varied with cinereous and fuſcous, with elevated ſcattered dots.

BORANI, in *Ancient Geography*, a people of Scythia, who, after having inhabited the borders of the Danube, paſſed the Cimmerian Boſphorus, under the empire Juſtinian, and eſtabliſhed themſelves in Aſia.

BORANO, CAPE, in *Geography*, lies near the N. W. extremity of the large gulf of Venice, and forms the N. E. point to the cluſter of iſlands that impede the entrance into that city. N. lat. about 45° 16′. E. long. 12° 30′. An iſland of the ſame name lies within the cape.

BORASSUS, in *Botany* (βορασσος, Dioſcorides). Linn. 1220. Reich. 1336. Schreb. 1689. Claſs. *Appendix Palms*. Linn. *Diœcia Hexandria*, Thunb.

Gen. Char. Male, *ampana*, Rheede Hort. Mal. *Cal.* ſpathe univerſal, compound; ſpadix amentaceous, imbricate; perianth proper, three-leaved; leaves ovate, concave. *Cor.* none. *Stam.* filaments ſix, thickiſh; anthers thicker, ſtriated.

Female on a diſtinct plant, *carimpana*, Rheede. *Cal.* ſpathe and ſpadix as in the male; perianth proper, three-leaved, permanent; leaves roundiſh, obtuſe. *Cor.* petals three, roundiſh, permanent; in La Marck's figure exactly ſimilar in form and ſize to the leaves of the calyx. *Piſt.* germ roundiſh; ſtyles three, ſmall; ſtigmas ſimple. *Pericarp*, drupe, roundiſh, obtuſe, rigid, one-celled. *Seeds* three, ſub-ovate, compreſſed, diſtinct, filamentoſe.

Species, B. *flabelliformis*. La Marck Illuſt. Pl. 898. "Fronds palmate, cowled; ſtipes ſerrate." Linn. A tree twenty-five or thirty feet high; two feet thick at bottom, and one at top. Trunk, bark of a dark colour; wood dark rufous red, with a ſoft pith in the middle; fronds about eight, decuſſate (umbellate, La Marck), at the top of the trunk; ſtipe near ſix feet long, round, and near a ſpan in breadth below, flat, ſomewhat concave, and not more than a palm above, rough with ſpines along the edges. The leafy part large, widely expanded, folded like a fan, and uſed as ſuch in its native countries; at the edges of the folds, furniſhed with prominent rough ribs; gaſhed at the extremity; of a denſe and thick texture, ſtriated lengthways with cloſe veins; fruit ſize of a child's head; external rind or ſhell, when ripe, blackiſh and ſhining near the calyx, longitudinally ſtriated with furrows and fiſſures, greeniſh yellow above; containing a denſe pulp, at firſt ſoft and white, afterwards filamentous and ſucculent, of a ſweetiſh not unpleaſant taſte, and ſtrong ſmell. In the pulp are ſeparately imbedded two or three oblong flat nuts, with a thick woody ſhell, containing, when young, a blue, gelatinous, eſculent kernel, of a ſweet, pleaſant flavour, which finally becomes too hard to be eaten. Ray Hiſt. Plant. A wine and a ſugar are made from the ſap of the tree. Native of the Eaſt Indies.

BORAX, in *Chemiſtry*, ſub-borat of ſoda.

Borax is a ſaline ſubſtance, which has hitherto been found only in Tibet, an extenſive mountainous diſtrict to the north of Hindooſtan. According to the moſt authentic recent accounts, eſpecially the report of Mr. Saunders, who viſited Tibet, in company with Mr. Turner, in the year 1783, borax is procured from a mountain lake, fifteen days' journey from the capital of Tibet. This lake is encompaſſed by rocky hills, and is entirely ſupplied by ſprings, no ſtream either falling into it or flowing from it. The water has a ſalt taſte, and contains both borax and common ſalt; and, on account of its elevated ſituation, is frozen for a great part of the year. The edges and ſhallows of the lake are covered with a ſtratum of borax, which is dug up in conſiderable maſſes, and the holes thus made are gradually filled by a freſh depoſition; from the deeper parts of the lake, rock ſalt is procured. The borax, in its rough ſtate, is called tincal, and is brought to Europe in the form of a browniſh grey impure amorphous ſalt, or in detached cryſtals, about an inch in length, of the form of compreſſed hexahedral priſms.

The purification of borax is an art which was firſt appropriated by the Venetians, afterwards paſſed to the Dutch, and is now practiſed in great perfection by ſome Engliſh chemiſts. The proceſs is as yet kept a ſecret, but in all probability conſiſts of calcination and ſolution.

The crude borax is often covered with an oily or greaſy matter, to prevent it from efloreſcing, and, on this account, is not eaſily acted on by hot water. It appears, however, that by expoſing the tincal to a calcining heat, lower than its point of fuſion, the greaſe may be burned off, and other inflammable impurities may be got rid of; the reſidue being then reduced to a fine powder, and digeſted in boiling water, the ſaline parts will be diſſolved, leaving moſt of the impurities behind. The further completion of the purification is probably effected by the common clarifying ſubſtances, and repeated ſolution and cryſtallization.

Borax, when quite pure, is in colourleſs cryſtalline maſſes, very ſlightly efloreſcent on expoſure to the air. Its ſp. gr. according to Kirwan, is 1.74. Its taſte is ſomewhat ſweetiſh, and ſenſibly alkaline. It turns ſyrup of violets green; ſhewing, therefore, an exceſs of alkali in its compoſition. It contains, according to Kirwan,

34	boracic acid
17	ſoda
47	water of cryſtallization
98	

Borax, when expoſed to a dry heat, ſpeedily diſſolves in its water of cryſtallization; it then, as the moiſture evaporates, becomes of an opaque white colour, and a voluminous ſpongy texture, like burnt alum. If the heat is increaſed to a moderate redneſs, it liquefies, and when cool, appears as a colourleſs tranſparent glaſs. If poured out of the crucible in order to cool, it ſhould be transferred, as ſoon as it becomes ſolid, to a covered baſon, or other proper veſſel, for it always cracks and flies to pieces before it grows cold. Borax, when thus fuſed, is called glaſs of borax; by expoſure to the air, it acquires the appearance of chalcedony, on account of the partial efloreſcence that it undergoes. If made in a ſilver crucible, or if *haſtily* melted in an earthen one, it is perfectly reſoluble in water; but when kept fluid for a long time in a common crucible, it diſſolves a portion of the earth of the veſſel, and becomes little, if at all, ſoluble in water.

Cryſtallized borax requires twelve parts of water at the common temperature for its ſolution, but only ſix parts of boiling water; it therefore depoſits cryſtals by mere cooling. Borax is decompoſable by all the mineral and vegetable acids when added to exceſs, the boracic acid being ſeparated, and the ſoda uniting with the other acid; but if only the exceſs of ſoda is combined with the other acid, the whole, by evaporation and cooling, forms a confuſedly cryſtallized maſs, conſiſting of the three ingredients in mutual combination. Borax will alſo diſſolve and combine with nearly half its weight of boracic acid, forming borat of ſoda. In this ſalt the acid and alkaline parts completely ſaturate each other, ſo that it produces no change on ſyrup of violets, neither does it poſſeſs any longer an alkaline taſte; it does not effloreſce like common borax, nor are the forms of its cryſtals the ſame. The affinity of ſoda for boracic acid is not ſo great as that of barytes, ſtrontian, lime, and magneſia. Theſe alkaline earths, therefore, decompoſe borax; the pure alkali remaining in ſolution, and the earthy borats forming pulverulent inſoluble ſalts. Potaſh is alſo capable of decompoſing borax; but borat of potaſh being very ſoluble in ſoda, no precipitation takes place.

Silex and alumine combine in the dry way with borax, the former into a tranſparent, the latter into an opaque glaſs. If the ingredients are in nearly equal proportions, the glaſs is inſoluble in the mineral acids; but if a conſiderable exceſs of borax is employed, the reſult is a ſoluble glaſs. Of this circumſtance Mr. Chenevix has ingeniouſly taken advantage by ſubſtituting borax for cauſtic potaſh in the analyſis of the more refractory ſtony compounds, the uſe of the former ſalt being much more convenient, on many accounts, than of the latter. Borax will alſo diſſolve moſt of the metallic oxyds, receiving from each peculiar tinges of colour.

The uſes of borax are conſiderable; it is employed in the laboratory as a very active flux, and as producing a more perfectly limpid fuſion than any other ſubſtance. For the ſame reaſon it is an ingredient in ſome of the finer kinds of glaſs; though its dearneſs prevents it from being employed ſo often as it otherwiſe might be to great advantage. Borax is alſo highly uſeful to the jewellers and goldſmiths, as a flux for the ſolder, by which pieces of gold and ſilver are cemented together; and in the Eaſt Indies it is employed in the moiſt way as a ſolvent for gum lac.

BORBETOMAGUS, in *Ancient Geography*, *Worms*, a town of Germany, according to Ptolemy, who ſays, it belonged to the Vangioni. It was their capital. See Worms.

BORBO, in *Geography*, a river of Piedmont, which diſcharges itſelf into the Tanaro at Aſti.

BORBONIA, in *Botany*, (in honour of Gaſton Bourbon, duke of Orleans,) a name firſt given by Plumier to plants of different characters, afterwards transferred by Linnæus to a genus in his claſs *diadelphia decandria*, which is obſcurely defined, and, concerning which there are in authors much confuſion and inconſiſtency. La Marck ſays, that it differs from geniſta, only in having the ſegments of its calyx a little longer and ſharper, which is ſurely a ſlight and indeterminable circumſtance; and from aſpalathus, in not having its leaves faſciculated, which is certainly no generic character at all. He follows Linnæus, however, in keeping theſe three genera diſtinct, but unites it with liparia, from which he finds no reaſon to ſeparate it. Linnæus attributes to it only nine ſtamens, all united, and obſerves, that liparia (a genus formed by him, late in life, from Thunberg's plants, collected at the Cape of Good Hope) differs from it in having a tenth ſeparate ſtamen. Boſc ſays, that the Borbonia has either nine or ten ſtamens, eight or nine of which are united at their baſe. La Marck, without noticing Linnæus's diſtinction, aſcribes to his united genera ten diadelphous ſtamens; but it ought to be remarked, that all his deſcriptions are confeſſedly made from dried ſpecimens, and Boſc informs us that none of the ſpecies are now cultivated in the Paris gardens. In this ſtate of uncertainty we ſhall follow Willdenow in retaining the Linnæan diſtribution. Linn. 857. Schreb. 1165. Willden. 1329. Juſſ. 853. Nat. Ord. *Papilionaceæ—Leguminoſæ.* Juſſ.

Gen. Char. *Cal.* perianth one-leafed, ſemiquinquefid, turbinate, half the length of the corolla; ſegments lanceolate, acuminate, rigid, pungent, nearly equal, the lower one the longeſt. *Cor.* pentapetalous, papilionaceous, hirſute on the outſide, banner reflected, obtuſe, claw the length of the calyx; wings ſemicordate, a little ſhorter than the banner; keel two-petalled, lunulate, obtuſe. *Stam.* filaments nine, united into a cylinder, dehiſcent longitudinally above, riſing at the end; anthers ſmall. *Piſt.* germ ſubulate; ſtyle very ſhort, aſcending; ſtigma obtuſe, emarginate. *Pericarp.* legume roundiſh, acuminate, one celled, mucronate with a ſpine. *Seed* kidney-form.

Eſſ. Char. Cal. acuminate-ſpiny. *Stigma* emarginate. *Legume* mucronate.

Species. 1. B. *ericifolia.* Linn. "Leaves nearly linear, acute, villoſe beneath, heads terminal." A ſmall, rather villoſe ſhrub; leaves alternate, pointed, nerveleſs and ſmooth above, villous and channelled beneath; flowers yellow, ſmall; legumes ſhort, very villous within. Its ſpecific name is not a happy one. 2. B. *trinervia.* Linn. "Leaves lanceolate, three-nerved, very entire." Flowers yellow, terminating, each on a ſeparate peduncle. 3. B. *anguſtifolia.* La Marck, with a doubt whether it may not be *trinervia* of Linnæus. "Leaves narrow-lanceolate, five-nerved, ſmooth; legumens oblong, pedunculate." A ſmall ſhrub; ſtems ſlender, interruptedly angular; peduncles two or three at the end of each branch. 4. B. *barbata.* La Marck (Illuſt. t. 619). "Leaves lanceolate, many-nerved, cloſe-ſet, ciliate, bearded, very acute; flowers villous, ſubſeſſile." Stem cylindric, with diverging branches; leaves imbricated, embracing the ſtem at their baſe. 5. B. *ciliata.* Willden. "Leaves cordate, embracing the ſtem, obtuſe, many-nerved very entire, ciliate." Stem cylindric, ſmooth; leaves an inch long, deeply cordate, ciliate at their margin, with long, ſlender hairs. Nearly allied to the foregoing, if it be more than a variety. 6. B. *lanceolata.* Linn. "Leaves lanceolate, many-nerved, very entire." 7. B. *cordata.* Linn. *cordifolia;* La Marck, who aſſerts that Linnæus's ſynonyms to *lanceolata* belong to this ſpecies. "Leaves cordate, many-nerved, very entire, ſmooth; flowers tomentoſe, ſubſeſſile." Branches villoſe; leaves terminated by a thorny point, crowded; ſegments of the calyx with thorny points; flowers covered externally with a white and ſilky down; banner brown within. 8. B. *crenata.* Linn. "Leaves cordate, many-nerved, toothed." Stems with triangular, ſmooth branches; leaves ſeſſile, or a little embracing the ſtem, reticularly veined, ending in a point; flowers ſmooth, pedunculate, three or four in a kind of raceme at the extremity of each branch; bractes ſetaceous. 9. B. *parviflora.* La

Marck. "Leaves cordate, many-nerved, ſmooth, a little toothed; flowers ſmall, ſeſſile, terminating." Branches ſmooth and angular; leaves ſeſſile, acuminate; flowers two or three together; calyces ſmooth, with pointed, not ſpinous teeth; bractes ſetaceous. 10. B. *perfoliata*. Willd. (La Marck Illuſt. pl. 619.) "Leaves embracing the ſtem, very entire." Thun. Branches cylindric, angular towards the end, with ſcattered hairs; leaves alternate, nerved, veined, denticulate, ſmooth, terminated by a ſhort point which bends outward, almoſt perfoliate, terminating; flowers four or ſix together in a kind of umbel, peduncled; ſegments of the calyces very ſharp-pointed; bractes ſetaceous. 11. B. *undulata*. Willd. "Leaves embracing the ſtem, waved with a reflexed point." All the ſpecies are natives of the Cape of Good Hope.

Propagation and Culture. Mr. Miller ſucceeded only by laying down their young ſhoots, which are commonly two years before they are ſit to be ſeparated from the old plant. The beſt time for laying them down is the beginning of September. B. *crenata* was introduced into Kew garden from the Cape in 1774, by F. Maſſon.

Borbonia, *Lævigata*, and *Tomentoſa*. See Liparia.

Borbonia, (*Plumier*). See Rhus, Metopium, and Heisteria Coccinea.

Borbonia *Aſtra*, in *Aſtronomy*, a denomination formerly given by ſome writers to the ſolar faculæ, on a ſuppoſition that they were ſatellites, or ſecondary planets. See Faculæ.

Fromundus mentions a Frenchman, named Tarde, who had written a book expreſs under the title "Aſtra Borbonia." Phil. Tranſ. N° 330. p. 287.

BORBONICA, in *Ornithology*, a ſpecies of Motacilla, of a greyiſh fuſcous colour, beneath a yellowiſh ſordid grey; quill and tail-feathers brown, edged with grey. This is the *ficedula borbonica* of Briſſon. Buffon calls it *petit ſimon*, and *figuer de l'iſle de Bourbon*. It is the *Bourbon warbler* of Latham. Inhabits the iſlands of Bourbon and Madagaſcar.

BORBONICUS, a ſpecies of Turdus, of a cinereous olive colour; crown black; abdomen and vent olivaceous yellow; tail fuſcous, with two obſolete bands near the tip. This inhabits the iſle of Bourbon. Its length is about eight inches; beak and legs yellowiſh; abdomen in the middle white; quill-feathers brown, edged with reddiſh. This is the *Bourbon thruſh* of Latham.

BORBORITÆ, or Borboriani, in *Eccleſiaſtical Hiſtory*, a branch of the ancient Gnoſtics, in the 11th century, who, to the other errors of that ſect, added this, of denying a future judgment. Their name is derived from βορβορος, *filth*, on account, as it is ſaid, of a cuſtom they had of beſmearing their faces and bodies with it. Epiphan. Hereſ. 25, an. 26. Auguſt. de Hereſ. c. 5.

Some alſo have given this appellation, by way of reproach, to the Mennonites.

BORBORUS, in *Ancient Geography*, a river of Macedonia, which, according to Plutarch, encompaſſed the city of Pella.

BORBORYGMUS, in *Medicine*, a term employed to denote the rumbling noiſe produced by air pent up in the inteſtinal canal; from βορβορύζω, *ſtrepitum edo*. It is a common ſymptom in caſes of diſordered bowels.

BORBOTHA, in *Ichthyology*, a name given by ſome writers to the eel pout or burbot, *gadus lota*, or, as Willughby names it, *muſtella fluviatilis*.

BORCANI, in *Ancient Geography*, a people of Apulia, according to Pliny.

BORCETTE, in *Geography*, the chief place of a canton, in the department of Roer, and diſtrict of Aix-la-Chapelle; the place contains 3534, and the canton 17054 inhabitants; it has 39 communes.

BORCH a town of Germany, in the circle of Lower Saxony, and duchy of Magdeburg; 4 leagues from Magdeburg.

BORCHEN, or Borken, a town of Germany, in the circle of Weſtphalia, and biſhopric of Munſter, ſeated on the Aa, having a manufacture of cloth; 30 miles weſt of Munſter.

BORCHLOEN, or Loosz, a town of Germany, in the circle of Weſtphalia, and biſhopric of Liege, the capital of the county of Looſz; 12 miles N.W. of Liege.

BORCHOLZ, a town of Germany, in the circle of Weſtphalia, and biſhopric of Paderborn; 8 miles N.N.W. of Warburg.

BORCHT, Henry Vander, in *Biography*, a painter and engraver, was born at Bruſſels in 1583, became a diſciple of Giles Valkenburg, and compleated his ſtudies in Italy. He was employed by the earl of Arundel in collecting antique curioſities for his lordſhip in Italy, and retained in his ſervice as long as he lived. After the death of this noble patron, he was employed by the prince of Wales, afterwards Charles II., and continued for ſeveral years in England, where his paintings were well eſteemed. But retiring to Antwerp, he died there in 1660. His chief excellence conſiſted in painting fruit and flowers. Among the few etchings which he executed are the "Virgin and Child," from Parmigiano, engraved at London, and dated 1637; a "Dead Chriſt, ſupported by Joſeph of Arimathea," from the ſame maſter; and "Apollo and Cupid," from Perin del Vago. Pilkington and Strutt.

BORCHWORM, or Borgworm, or Warem, in *Geography*, a town of Germany, in the circle of Weſtphalia, and biſhopric of Liege; 10 miles W. of Liege.

BORCKELOE, or Borcklo, a town of the united ſtates of Holland, in the county of Zutphen, on the confines of the biſhopric of Munſter; ſeated on the river Berckel; 15 miles E.N.E. of Zutphen, and 42 W.N.W. of Munſter.

BORCUM, a ſmall iſland in the German ocean, near the coaſt of Eaſt Frieſland: about N.N.W. from the point of Embden, at its S.W. entrance into the port and river, and about 2 leagues N.E. by E. from the iſland Rottum. Between them is a channel called the Weſt Channel of the Embs. N. lat. 53° 36'. E. long. 6° 18'.

BORDA, Charles, in *Biography*, formerly *Chevalier de Borda*, and a *chef d' Eſcadre*, in the royal navy under the old French government, was born at Dax, May 4, 1733, and diſtinguiſhed himſelf in early life as an able mathematician. Of his knowledge in this department of ſcience ample evidence may be found in the Memoirs of the Academy of Sciences, for 1763 and 1767, of which he was admitted a member in 1754. Theſe memoirs contain many excellent papers communicated by Borda, on different objects of hydraulics; on the reſiſtance of fluids; on water wheels and pumps; on the projections of bombs; on the method of determining curve lines; on the properties of maxima and minima; and on the beſt method of chooſing by lot. In the years 1771 and 1772, he performed a voyage, by command of the king, with Verdun de la Cranne and Pingré, in the Flora frigate, in which he had the rank of "lieutenant de Vaiſſeau," to various parts of Europe, Africa, and America, for the purpoſe of improving the ſciences of geography and navigation, and of making experiments with various nautical inſtruments and time-pieces, with a view of aſcertaining accurate methods for determining the longitude. The reſult of the obſervations of theſe three navigators was afterwards publiſhed at Paris in 1778, in 2 vols. 4to., under the title of "Voyage fait par ordre du Roi, in 1771 and 1772, &c." in which Borda's ſhare was not the leaſt conſiderable. An account of the reſult of this expedition may be alſo found in the Memoirs of the Paris Academy for 1773. To Borda the public are likewiſe indebted for the beſt chart of the Canary iſlands, which ſerved as a model for the valuable map of thoſe iſlands, publiſhed in Spain in 1788. In 1774, he undertook a voyage to the Azores, the cape Verd iſlands, and the coaſt of Africa. In the year 1787, he publiſhed a valuable work, entitled "Deſcription et uſage du circle de Reflection," in which he revived the uſe of the reflecting circle propoſed by Tobias Mayer in 1756. He was the firſt founder of the ſchools of naval architecture in France, and formed the plan of education, and the regulations to be adopted in theſe ſeminaries. He alſo applied the principles of Euler to the uniform conſtruction of ſhips, ſo that all thoſe of the French navy might be equal with reſpect to ſailing. And the advantages, in point of form, with regard to quick ſailing and manœuvring, poſſeſſed by French ſhips, which are conſtructed on true mathematical principles, and actually acknowledged by experienced Britiſh officers, have been principally owing to the genius, knowledge, and exertions of Borda. He likewiſe brought into uſe Mayer's old method of meaſuring terreſtrial angles, after it had been long neglected; applied it to aſtronomical obſervations; and invented a circle on a new conſtruction, with moveable teleſcopes, together with other inſtruments: ſuch as metallic rules for meaſuring baſes, which were uſed in the new meaſurement of an arc of the meridian in France; and to the labours of Borda the accuracy of this meaſurement has been juſtly aſcribed. He took the moſt active part in the late reform of weights and meaſures introduced in France; and he cauſed to be calculated and printed at his own expence, the logarithms of the decimal parts of the circle, according to the new diviſion into 400 parts. In 1792, he invented inſtruments and methods for determining, with a preciſion before unknown, the length of a pendulum, ſwinging ſeconds at Paris. M. Lalande has publiſhed, in his Abridgment of Navigation, Borda's new method for gauging veſſels, together with the tables. Borda was inſpector of the dock-yards, in which ſituation government put great confidence in his talents; and, in 1797, he was one of the candidates for the office of director of the French republic. Although his health had been much impaired, in conſequence of ſerving in the American war with d'Eſtaing in 1777 and 1778, he continued to employ himſelf in a variety of uſeful labours. At length, however, a dropſy of the breaſt proved fatal to him, on the 20th of February, 1799, in the 64th year of his age. Lalande's Hiſt. Aſtron. for 1799.

BORDAGE, the condition or ſervice of the *bordarii*. Du-Cange. Gloſſ. Lat.

BORDARII, often mentioned in the Domeſday inquiſition, were diſtinct from the *ſervi* and *villani*, and ſeem to be thoſe of a leſs ſervile condition, who had a *bord*, or cottage, with a ſmall parcel of land allowed to them, on condition they ſhould ſupply the lord with poultry and eggs, and other ſmall proviſions for his board and entertainment. Though, according to Spelman, the *bordarii* were inferior to *villani*, as being admitted to a ſmall number of acres.

BORDARII alſo denote ſervants, or workmen, employed about the houſe in the neceſſary offices of fetching wood, drawing water, grinding corn, cleaning yards, and the like: by which they ſtand diſtinguiſhed from villani, employed in the tillage of lands. See VILLAIN.

BORDAT, in *Commerce* a ſmall narrow ſtuff which is manufactured in ſome parts of Egypt, particularly at Cairo, Alexandria, and Damietta.

BORD-BRIGCH, *Borg-bryce*, or *Burgh-brych*, Sax. in *Engliſh Antiquity*, a breach, or violation of ſuretyſhip, pledge-breach, or breach of mutual fidelity.

BORDE, ANDREW, or, as he calls himſelf, *Andreas Perforatus*, in *Biography*, was born at Pevenſey in Suſſex, in the early part of the 16th century, and entered early among the Carthuſians. Quitting his monaſtery, he went to Montpellier, and applied himſelf to the ſtudy of medicine, and in 1542, was made a doctor in that faculty. He now returned to England, and having been admitted of the univerſity of Oxford, he came to London, and was made fellow of the Royal College of Phyſicians, which had been lately eſtabliſhed here, and one of the phyſicians to king Henry VIII. at Wincheſter, where he principally reſided and practiſed. Though advanced to theſe honours, his works, full of groſs and barbarous errors, ſhew he was but moderately ſkilled in languages. He, however, affected to be learned, generally beginning his accounts of diſeaſes, with giving the Greek, Latin, and Arabic names by which they were known. His "Breviary of Health," containing a ſhort account of all diſeaſes and their remedies, was publiſhed in 1547. This was republiſhed in London in 4to. in 1575, with ſome additions which the author had called the extravagants. He was alſo author of a compendious regimente, or dietary of health, made in mount Pyllor, which was publiſhed in 1562, and of a book on prognoſtics, and on urines. Borde was alſo a wit and a poet. He publiſhed "Tales of the mad men of Gotham," a book ſtill remembered; and a very ſingular work, partly proſe, partly in verſe, which he called "The Introduction of Knowledge, &c." dedicated to the princeſs, afterwards queen Mary. Before the firſt chapter is a wooden print of a naked man, with a piece of cloth and a pair of ſhears, with this inſcription:

"I am an Engliſhman, and naked I ſtand here,
Muſing in my mind what raiment I ſhall wear:
For now I will wear thys, and now I will wear that,
And now I will wear I cannot tell what, &c."

The thought, Dr. Aikin ſays, is taken from the Venetians' deſcription of a Frenchman. It was probably in conſequence of his having taken more liberty than was allowed at that time with ſome perſon in power, that he was thrown into the Fleet priſon, where he died in 1549. Haller. Bib. Med. Aikin's Biog. Mem.

BORDEAUX, in *Geography*, a town of France, in the department of the Drôme, and chief place of a canton, in the diſtrict of Die, 10 miles S.W. of Die; the place contains 1181, and the canton 3885 inhabitants: the territory comprehends 132½ kiliometres and 9 communes.

BORDEKOW, a town of Poland, in the palatinate of Lemberg: 36 miles S. of Lemberg.

BORDELIE'RE, in *Ichthyology*, the common French name of a fiſh included in the CYPRINUS genus, that is found in the lakes of cold mountainous countries. This appellation appears to be indifferently applied to the *cyprinus ballerus*, and *cyprinus blicca* of Bloch.

BORDENAVE, TOUSSAINT, in *Biography*, was born at Paris in 1728. Having diſtinguiſhed himſelf for his induſtry and ſkill in his profeſſion, he was admitted member of the college of ſurgeons there in 1750, and profeſſor of phyſiology in the ſchool of St. Come. He was alſo, in ſucceſſion, made honorary member of ſeveral foreign academies, to whoſe tranſactions or memoirs he was a frequent and liberal contributor. His works are "Eſſai ſur la phyſiologie," 12mo. publiſhed in 1756, and again in 1764. An elementary work, compoſed for the benefit of his pupils: "Remarques ſur l'inſenſibilité de quelque parties," 12mo. 1757. He reckons the tendons and aponeuroſes of the muſcles among the inſenſible parts. In 1768, he publiſhed a tranſlation of Haller's Elements of Phyſiology into French; in 1769, "Diſſertation ſur les antiſeptiques," 8vo.; and in 1774, "Memoires ſur le danger des cauſtiques pour la cure radicale des hernies," 12mo. For the titles and account of his diſſertations, publiſhed by the academies with which he correſponded, ſee Haller. Bib. Chirug. Eloy. Dict. Hiſt.

BORDENTOWN, in *Geography*, a pleaſant town of America, in Burlington county, New Jerſey, ſituate at the mouth of Croſſwick's creek, on the eaſt bank of a great bend of Delaware river; 6 miles below Trenton, 9 N.E. from Burlington by water, and 15 by land, and 24 miles N. E. from Philadelphia. This town contains about 100 houſes, and is a thoroughfare from New York to Philadelphia.

BORDER, in *Gardening*, a narrow ſtripe or portion of ground running along the ſides of the walls, or other fences that incloſe gardens, and ornamented lands, and which bound the walks, or ſerve to ſeparate the different principal diviſions of the former, the earth being generally laid out in a gently ſloping manner from the front to the back parts. Theſe compartments are either of the uſeful or ornamental deſcription. Thoſe of the firſt kind, are ſuch as are carried round the walls of garden-grounds, and which are moſtly employed, eſpecially where the aſpect is to the ſouth, in planting out various ſorts of fruit-trees upon, ſuch as cherries, figs, plums, apples, pears, peaches, nectarines, apricots, &c. in order to their being trained to the walls or fences, ſo as to form wall-trees, as well as extremely uſeful in raiſing different early eſculent herbs, roots, and leguminous crops; and on the other aſpects, for the ſowing, rearing, and pricking out of many ſorts of ſeeds and plants upon, in the ſummer ſeaſon, that require a cool ſituation, or a degree of ſhade at particular periods of their growth. The general rule in laying out theſe borders is, that of making them with a breadth in proportion to the height of the walls, or palings towards which they are formed, which ſhould never be leſs than eight or twelve feet. They were formerly made not more than five or ſix feet in breadth, which is much too narrow for convenience in the culture of the plants, or the management of the trees that may be planted on them. Where trees are to be planted as eſpaliers, ten or twelve feet are the breadths that ſhould, in moſt caſes, be allowed.

As to borders intended for the raiſing and growth of different ſorts of flowers, or for ſmall ſhrubs and herbaceous plants; or flowers being planted out in aſſemblage or mixture with each other, five or ſix feet in the former, and eight in the latter, may be proper breadths for the purpoſe.

Their depths, where trees are to be planted, ſhould never be leſs than two feet at the walk, gradually increaſing to three at the backs or fences. Some fruit-trees, however, require much more, as pears and apples. In other caſes, one foot at the walks, and two at the backs, may form a ſufficient depth and ſlope for the perfect culture of the crops that may be grown upon them. For flowers, and the ſmaller ſorts of ſhrubs, it is often convenient to have them a little rounded on the ſurface. Where the ſituations in which the borders are made are of the more moiſt and retentive kinds, having clayey, or gravelly and cankery bottoms, proper drains ſhould be formed, and conducted along the fronts of borders to the full depth of the ſubſoils, in order, effectually, to convey off the injurious wetneſs that may take place, and allow of a ſuitable bed being formed for the upper ſoil. This is often effected by paving the bottoms of the beds with tiles or bricks. But a much leſs expenſive, and at the ſame time, equally effectual method is adviſed by the author of the "Scotch Forcing Gardener," which is that of letting the bottoms be laid in a ſloping direction from the walls to the drains, a fall of ſix inches being given, firſt with a layer of good loam, two inches in thickneſs, being ſpread evenly, and well rolled down; then a ſimilar ſtratum of clear pit or river gravel applied over it, and forced down in the ſame manner; upon this, another coat of loamy earth is to be depoſited to the thickneſs of an inch or more, and well preſſed down; the whole being executed while the materials are in a rather dry condition. Theſe ſhould be afterwards a little moiſtened, and well rolled down till the ſurface becomes glazed, the waterings and rollings being continued alternately, till the whole acquires a ſhining hardneſs, and the gravel begins to ſhow itſelf clearly through the loamy coat. In this way, it is aſſerted, bottoms may be formed, through which the roots of no trees can penetrate, and which are at the ſame time perfectly favourable to the growth of trees and plants.

In conſtituting the borders, thoſe ſubſtances and mixtures of different materials, which are moſt adapted to the growth and ſucceſs of particular ſorts of trees or plants, will be explained in deſcribing the culture which they require. Where the raiſing and growth of moſt ſorts of culinary vegetables are the principal object of borders, there ſhould be conſtantly a due proportion of good vegetable mould, in combination with a proper quantity of rich, mellow, loamy earth, a ſuitable portion of well-rotted ſtable dung, according to circumſtances, being incorporated with them, which produce them in the greateſt perfection.

There is another ſort of uſeful border, which is that which divides or ſurrounds the principal compartments or diviſions of kitchen-garden grounds, and which immediately bounds or verges the main walks, as being convenient for planting ranges of dwarf-apple, pear, plum, cherry, medlar, and other trees upon, as eſpaliers, as well as for the culture of many herbaceous, eſculent plants. The line of eſpalier trees, in theſe caſes, ſhould be planted at leaſt three or four feet from the outer edges, ſo that there may be three or four feet borders on the outſide next the walks, and a ſmaller one on the inſide of the eſpaliers, the broader outſide borders ſerving for the rearing and culture of many low-growing, eſculent plants; and ſometimes, where the kitchen and flower-garden are united, as flower borders. The ſmaller inward borders may be found uſeful in raiſing many ſorts of ſmall plants and herbs, as lettuces, &c.

Borders of the latter, or ornamental ſort, as thoſe of pleaſure or other grounds, muſt be formed according to circumſtances. It was formerly the taſte, in many places, to have almoſt every walk bounded on each ſide by a border embelliſhed with various ornamental plants; this taſte has now, however, in a great meaſure, given way to that of planting only on one ſide. A fine walk, ornamented on each ſide by ſpacious borders, fully planted out with curious flowering ſhrubs, and other plants, have, notwithſtanding, a fine appearance and good effect in many ſituations.

Borders of curious flowers, carried along the boundaries of graſs plats, or lawns contiguous to the houſe, whether formed in a ſtraight or ſerpentine manner, produce an agreeable effect, and much variety. The borders for particular kinds of flowers, ſuch as the curious ſorts of hyacinths, tulips, ranunculuſes, anemones, carnations, and various others, may be made either along the ſides of walks, or detached in other parts of gardens, or ornamented grounds. Such borders as immediately bound or verge gravel, or ſandy walks, ſhould be planted on the ſides, with edgings of ſome dwarf-evergreen ſort of plants, ſuch as thoſe of box, thrift, daiſies, pinks, &c.; but the firſt is the neateſt and moſt durable plant for the purpoſe. See Buxus, and Edging.

Theſe ſorts of borders ſhould always be raiſed two or three inches or more above the common ſurface level; ſuch as are detached being generally finiſhed off in a gently ſwelling or rounding form, in order that they may afford the fulleſt effects.

Border, in *Heraldry*. See Bordure.

BORDE'RES, in *Geography*, a town of France, in the department of the higher Pyrenees, and chief place of a canton, in the diſtrict of Bagnères, four leagues S. of La Barthe; the place contains 398, and the canton 2822 inhabitants; the territory comprehends 207½ kiliometres, and 21 communes.

BORDERS, among *Floriſts*, are ſuch leaves as ſtand about the middle thrum of a flower.

BORDES, in *Geography*, a town of France, in the department of the Arriege; 7½ leagues W. of Mirepoix.

BORDEU, Anthony, in *Biography*, a phyſician of conſiderable eminence, was born at Iſeſte, in Bearn, in 1693. After being initiated in the ſtudy of medicine by his father, he went to Montpellier, where he was admitted doctor in that faculty in 1719. Invited, in 1723, to Pau, the capital of the province, he acquired ſo much reputation, as to procure him the offices of phyſician to the military hoſpital at Bareges, and of inſpector of the mineral waters there. To the waters he paid great attention, and in 1750, he publiſhed a ſmall treatiſe, ſhewing the effects he had experienced from them in a variety of diſeaſes. He lived to an advanced age, but the preciſe time of his death has not been noted.

Bordeu, Theophilus de, following the ſteps of his father, attained to a ſtill higher degree of profeſſional eminence. He was born in 1722; and having paſſed through his ſtudies with ſingular credit, was created doctor in medicine at Montpellier, in 1743. In 1745, he was appointed to ſucceed his father, as inſpector of the mineral waters, and profeſſor in anatomy, which was his favourite ſtudy. In 1747, he was made correſponding member of the Royal Academy of Sciences at Paris, whither he ſoon after went; and after paſſing through the uſual courſe of ſtudies, he was admitted doctor in medicine there, in 1754. He was taken off ſuddenly by a ſtroke of apoplexy in 1776, being in the 55th year of his age. He was through life diligent and attentive to his profeſſional duties, and ſeems to have been actuated by a deſire of improving his art, and of leaving memorials of his induſtry and ingenuity. The principal of his works are, "Chylificationis hiſtoria," his inaugural theſis, 1742, re-printed at Paris, 1752, 12mo. with his "Recherches ſur les glandes." He thought he obſerved a duct paſſing from the thyroid gland to the trachæa; an opinion, which he repeats in another of his works, but without ſufficient ground. "Diſſertatio phyſiologica de ſenſu genericè conſiderato," Monſpelii, 1743, 8vo.; 1751, Paris, with his "Chylificationis hiſtoria." "Lettres contenant des eſſais ſur l'hiſtoire des eaux minerales du Bearn, &c. 12mo. 1746." In theſe he treats of the properties of the waters, and of the geography of Bearn. "Recherches anatomiques ſur la poſition des glandes et ſur leur actions," Paris, 1751, 8vo. "Recherches ſur le pouls par raport aux criſes," Paris, 1756, 12mo.; in which he has gone much beyond Solano in his diſcrimination of pulſes, and beyond what can be followed in practice. "Recherches ſur le tiſſu muqueux, et l'organe cellulaire," Paris, 1766, 12mo. Haller accuſes him of diſingenuity in attributing to himſelf the diſcovery of ſome properties of the cellular membrane, which had been before deſcribed by him and others, but does not deny the work to have on the whole conſiderable merit. Hall. Bib. Anat. Eloy. Dict. Hiſt. Aikin's Gen. Biog.

Bordeu, Francis, brother to Theophilus, and educated under his father and him, was born at Pau, in 1737. Having taken his degree of doctor in medicine at Montpellier, in 1756, he returned to Pau, and was appointed to ſupply the place of his brother, as inſpector of the waters there. In 1757, he publiſhed "De ſenſibilitate et contractibilitate partium in corpore humano ſano," Monſpell.; and in 2760, "Precis d'obſervations ſur les eaux de Bareges," &c. 12mo. collected principally from the works of his father, brother, and other writers on the ſubject. "Recherches ſur les maladies chroniques, leur rapports avec les maladies aigues," &c. 1775, 8vo.; principally with the view of ſhewing the utility and the manner of adminiſtering mineral waters in the cure of chronical complaints. Haller. Bib. Chirurg. Eloy. Dict. Hiſt.

Bord-Free. See Free.

Bord-Halfpenny, or Brod-Halfpenny, money paid in markets and fairs, for ſetting up boards, tables, and ſtalls, for the ſale of wares.

BORDIGHERA, in *Geography*, a town of Italy, in the ſtate of Genoa, 3 miles E.N.E. of Ventimiglia.

BORD-LANDS, the demeſnes anciently kept by the lords in their hands for the maintenance of their board or table. This was anciently called *bordage*.

BORDO Nuova, in *Geography*, a town of Servia, 18 miles E.S.E. of Piſtrina.

BORDOE, one of the Faroe iſlands, having a harbour on the N.W. coaſt.

BORDONE, Paris, in *Biography*, a painter of hiſtory, portrait, and architecture, was born at Trevigi, in 1513, and at a proper age became a diſciple of Titian, whoſe uncommunicative diſpoſition he had occaſion to regret. He ſtudied and imitated the ſtyle of Giorgione, and acquired ſuch reputation, that at the age of 18 years he was employed in painting a picture in the church of St. Nicholas. From Venice he removed to Vincenza, in conſequence of an invitation to adorn a gallery with paintings in freſco, in which Titian had exhibited a deſign repreſenting the judgment of Solomon. Bordone compoſed the hiſtory of Noah and his ſons, which he finiſhed with ſuch care, that it was not eſteemed inferior to the work of Titian. Having finiſhed ſeveral conſiderable works at Venice and Trevigi, he entered, in 1538, into the ſervice of Francis I. of France; and gained additional reputation by various hiſtorical ſubjects and portraits, which were excellently deſigned, and recommended by a charming tone of colour. On quitting France he viſited ſeveral cities of Italy, in which he left a number of memorable works, as monuments of his extraordinary abilities. His colouring reſembles nature, and his portraits have been very much admired; ſeveral of them are ſtill preſerved in the Palazzo Pitti at Florence, the colouring of which is clear, freſh, and beautiful. This artiſt died in 1588, at the age of 75, according to Vaſari; but according to Felibien, at the age of 65 years. Pilkington.

BORD-SERVICE, called alſo Bordage, the tenure of lands on condition of furniſhing proviſion for the lord's board or table.

Some lands in the manor of Fulham, and elſewhere, are ſtill held of the biſhop of London, by the ſervice, that the tenants pay ſixpence per acre in lieu of finding proviſion for their lord's table.

BORDURE, or Border, in *Heraldry*, is a partition line running all round the inſide of the field, of an equal width, taking up one-fifth from the outer edge of the field, and without any ſhadow. Arms having a plain bordure, are emblazoned *argent, a bordure gules*; but if indented, engrailed, embattled, &c. *argent a bordure indented, gules.* The bordure always gives place to the *chief*, the *quarter*, and the *canton*; for example, *or, a bordure, azure, and a chief, gules.* The chief, therefore, is always placed over the bordure, as are alſo the quarter and canton. The bordure is continued under the chief, but with the quarter and canton it continues round, until it touches them, and there finiſhes; but with other ordinaries, as the chevron, feſs, bend, &c. the bordure always paſſes over. In arms empaled with another having a bordure, the bordure muſt finiſh at the empaled line, and not proceed round the coat, as is too often practiſed. When the bordure is charged with bezants, plates, billets, or pellets, it is termed a bordure, gules, bezantée, platée, billetée, or pelletée; all other charges are expreſsly mentioned as to number and colour. The bordure is borne different ways, as gobone, cheque, vair, bend, &c. which are explained under the different terms. See Gobone, &c.

The bordure is not conſidered as one of the honourable ordinaries, but as a mark of difference, to diſtinguiſh one family from another.

Bordure, *Per*, an inner bordure, appearing as two bordures: bordure indented, with the middle line indented.

Bordure, *point in point* indented, differs from the bordure per bordure indented, as the indents muſt be from line to line, that is, muſt touch both ſides of the bordure.

Bordure *of the field*, is merely a partition line, of the colour of the field, running round the arms. This bearing is never uſed in Engliſh armory, but is often borne both in France and Germany.

Bordure *Entier*, commonly called entoyer, or entoire, a term when charged with inanimate things, as eſcallop-ſhells, &c.

Bordure *Enaluron*, ſo called when charged with birds.

Bordure *Enurny*, when charged with lions.

Bordure *Verdoy*, when charged with vegetables.

Bordure *Purflewed*, when it is ſhaped like vair.

BORDUUN, *German*, probably from *Bourden*, Fr. a ſtop in an organ ſo called, of which the ſounds are an octave lower than the diapaſon, to which this ſtop is in the ſame proportion as the double-baſe to the violoncello. In an organ, of which the longeſt pipe in the diapaſon is ſixteen feet, that of the borduun would require thirty-two feet. See Organ and Diapason.

BORE, in *Geography*, a town of Aſiatic Turkey, in the province of Caramania, 70 miles E.N.E. of Cogni.

Bore, a term uſed to denote a ſudden and abrupt influx of the tide into a river or narrow ſtrait. This prevails to a conſiderable degree in the principal branches of the Ganges, and in the Megna; but the Hoogly river, and the paſſages between the iſlands and ſands ſituated in the gulf, formed by the confluence of the Ganges and Megna, are more ſubject to it than the other rivers. This may be owing partly to their having greater "embouchures," in proportion to their channels, than the others have: by which means a larger proportion of tide is forced through a paſſage comparatively ſmaller; and partly to the want of capital openings near them, by which any conſiderable portion of the accumulating tide might be drawn off. In the Hoogly or Calcutta river, the bore commences at Hoogly point, where the river firſt contracts itſelf, and is perceptible above Hoogly town; and its motion is ſo quick, that it hardly takes up four hours in paſſing from one to the other, although the diſtance is near 70 miles. At Calcutta it ſometimes occaſions an inſtantaneous riſe of five feet; and both here, and in every other part of its track, the boats on its approach, immediately quit the ſhore, and ſeek ſafety in the middle of the river. In the channels, between the iſlands, in the mouth of the Megna, &c. the height of the bore is ſaid to exceed twelve feet; and it is ſo terrific in its appearance, and dangerous in its conſequences, that no boat will venture to paſs at ſpring-tide. After the tide has paſſed the iſlands, no veſtige of a bore is ſeen, which may be owing to the great width of the Megna, in compariſon with the paſſages between the iſlands; but the effects of it are viſible enough, by the ſudden riſing of the tides.

The bores are alſo high and dangerous in the mouths of the river Indus. To this ſudden influx of the tide, in a body of water elevated above the common ſurface of the ſea, may be aſcribed the injury ſuffered by Alexander's fleet, and deſcribed by Arrian. He ſays, thoſe ſhips that lay upon the land were ſwept away by the fury of the tide, while thoſe that ſtuck in the mud were ſet a float again without damage. In order to account for this fact it ſhould be conſidered, that the bottoms of channels, in great rivers, are muddy, while the ſhallows are formed of ſand; and it is the property of the bore to take the ſhorteſt cut up a river, inſtead of following the windings of the channel; conſequently it muſt croſs the ſand-banks it meets in its way; and it will alſo prove more deſtructive to whatever it meets with aground than what is afloat. Rennell's Memoir.

Bore, in *Gunnery*; the bore of a gun, or piece of ordnance, is uſed for the chaſe or barrel; though it ſeems rather to denote the diameter of the chaſe. See Caliber, and Cannon.

Bore *ſquare*, in *Smithery*, denotes a ſquare ſteel point, or ſhank, well tempered, fitted in a ſquare ſocket in an iron wimble, ſerving to wind holes, and make them truly round and ſmooth within.

BOREA, an ancient name for a ſpecies of Jasper of a bluiſh green colour.

BOREADES, in *Mythology*, the patronymic names of Zethes and Calais, the ſons of Boreas. Hyginus (fab. xl.) ſays, that they had wings to their heads and feet.

BOREAL *Signs*, in *Aſtronomy*, the firſt ſix ſigns of the zodiac, or thoſe on the northern ſide of the equinoctial.

BOREALIS, Aurora. See Aurora *Borealis*.

Borealis, in *Conchology*, a ſpecies of Venus. This ſhell is lentiform, with very remote, erect, membranaceous tranſverſe ſtriæ. Gmel. This is a ſmall ſhell meaſuring about an inch and a half in length; colour dirty white. Inhabits the north of Europe. Donov. Brit. Shells, &c.

Borealis, in *Entomology*, a ſpecies of Tabanus, diſtinguiſhed by having the eyes with three purpliſh bands; abdomen black, the ſegments whitiſh at the edges. Size of T. pluvialis. Inhabits Norway. Gmel. Fabr. The thorax of this inſect is brown; abdomen black with a pale glaucous ſpot on each ſide of every ſegment; legs black. This is a rare ſpecies.

Borealis, a ſpecies of Coccinella, of a reddiſh, or yellowiſh colour, with twelve black dots on the wing-caſes, and four on the thorax. Thunberg, Fabr. &c. This is a native of the Cape of Good Hope. Shape gibbous, beneath of a yellow colour.

Borealis, in *Natural Hiſtory*, a ſpecies of Clio, of a whitiſh colour, having the lobes of the head terminated in a fleſh coloured pointed papilla; tentacula three, fleſhy, and thick at the mouth. Inhabits the north ſeas. Pallas, &c. This is nearly allied to *Clio retuſa*. Gmelin ſuſpects that it may be the ſame.

Borealis, a ſpecies of Echinorhynchus, found in the inteſtines of the Eider duck. Gmel. This is called *Sipunculus lendix*, by Phips. it.

Borealis, in *Ornithology*, a ſpecies of Anas, with a narrow bill, the head green, throat and abdomen white. Gmel.

This is the *Gauland duck* of Latham, who informs us it is a native of Iceland, where it inhabits fens, and is very ſcarce.

Borealis, a ſpecies of Tringa, the belly and legs of which are fuſcous; body above cinereous, beneath white; tail and wings duſky. Found in King George's bay. This is the *Boreal ſand piper* of Latham. The bill is ſhort, black, and ſomewhat gibbous at the tip; eye-brows white.

Borealis, a ſpecies of Motacilla, of a green colour; beneath yellow; front, throat, and temples ferruginous; tail rotund, feathers on the ſides and at the tips white. A native of Kamtſchatka, called by Latham the *Ruſty-headed warbler*.

Obſ. The bill is pale; legs black; and the whole body tinged with olivaceous colour.

BOREAS, a Greek name now in popular uſe, for the north wind. Etymologiſts uſually derive the word from *βοη, clamor, noiſe;* or from βορα, *food*, becauſe it creates an appetite.

Pezron obſerves, that anciently, and with much greater propriety, *Boreas* ſignified the north-eaſt wind, blowing at the time of the ſummer ſolſtice; he adds, that the word comes from the Celtic *bore, morning*; becauſe their principal light, in that ſeaſon, came from that quarter, whence alſo the winds then uſually blew.

The Greeks erected an altar to Boreas, whom they conſidered as a deity, the ſon of Aſtræus and Aurora, whoſe ſeat was in Thrace. He is repreſented on the temple of the eight winds at Athens with his robe before his mouth, as if he felt the cold of the climate over which he preſides, agreeably to the deſcription of Ovid, who calls him *gelidus tyrannus*, the ſhivering tyrant. Met. vi. ver. 711. But he is uſually deſcribed by the Roman poets as violent and impetuous. Ibid. ver. 686—ver. 707.

The qualities allowed by naturaliſts to this wind are coldneſs and dryneſs.

Boreas, in *Entomology*, a ſpecies of Bombyx, (*Phal. Linn.*) the wings of which are tailed, and varied with cinereous and fuſcous; on the firſt, or anterior pair two dots, on the poſterior wings a ſingle tranſparent one. Fabricius, &c. This is a native of America, and has the anterior wings falcated.

Boreas, a ſpecies of Cancer, in the family *Aſtacus*, that inhabits the north ſeas; it is diſtinguiſhed by having the thorax aculeated, and the ſecond and third pair of legs filiform. Fabr.

Obſ. The beak of this kind is ſhort, depreſſed, acute, grooved on each ſide with a ſtrong tooth beneath.

Boreas, in *Ancient Geography*, a mountain of Arcadia on which are the remains of an old temple, which, it is pretended, was built by Ulyſſes after his return from Troy.

BOREASMI, were feaſts inſtituted at Athens in honour of Boreas, who was thought to bear ſome relation to the Athenians, as he had married Orithya, the daughter of Erectheus; for which reaſon, when, in a ſea fight, many of the ſhips of their enemies were deſtroyed by a north wind, the Athenians imputed it to the kindneſs manifeſted by Boreas to the native country of his wife. Pauſanias Attic. We are informed by the ſame author (Arcad.) that ſolemn ſacrifices were offered to Boreas at Megalopolis in Arcadia, where he had a temple, and divine honours.

BORECH, in *Natural Hiſtory*, a kind of ſalt brought from Perſia.

BORECOLE, or Boorcole, in *Agriculture*, a plant of the cabbage kind, ſometimes cultivated in the field for the purpoſe of a green winter food for cattle ſtock. There are three ſorts of it, the common borecole, the green borecole, and the Siberian borecole, or curled cole, or kale. The laſt ſort is the moſt hardy.

Theſe plants are grown to moſt advantage in the field, where the ſoils are rather ſtrong, freſh, rich, and deep, whether of the clayey or loamy kind; and where they have been deeply ſtirred by the plough, and had a good proportion of manure turned in. See Brassica.

In Mr. Baker's experiments in planting them in rows at the diſtance of two feet each way, for the uſe of the horſe hoe; the produce was very conſiderable. And he ſuppoſes that it would be ſtill greater, if they were cultivated at the diſtance of eighteen inches. If the crops were equally good, there would be, he aſſerts, from the produce he has already obtained, in the firſt method, ſeventeen tons fifteen hundred weight on the acre; and in the latter more than twenty-three tons twelve hundred. On this account, as well as that of their being capable of being cut over two or three times, and their ſtanding the ſevereſt froſt, it is concluded that they are highly deſerving the grazing farmer's attention as a winter food for cattle and ſheep, though it is confeſſed that the firſt produce may not be ſo great as in the common cabbage, but that deficiency is made up by the ſucceeding ones. There is likewiſe rather more trouble in collecting the food and conveying it to the animals.

It is ſuggeſted, without having been ſubjected to the teſt of actual experiment, that the beſt mode of conſuming this ſort of food by ſheep ſtock, would be to have two ſmall fields under this kind of crop, proportionate to the number of animals; and to turn the ewes or other ſheep into one of them about the beginning of September, or the following month, for a few hours in the mornings and evenings for five or ſix weeks; lodging them on a portion of graſs or fallow ground near it for the reſt of the time, in order that they may evacuate themſelves, by which much improvement may be produced in ſuch lands; and when all the more luxuriant leaves of this piece have been cropped and conſumed, the other field ſhould be managed in the ſame way. In this method it is ſuppoſed that a ſtock of ſtore ſheep might be kept a whole winter at a very moderate expence: and while the produce of one piece was conſuming, the other would be coming forward. It is remarked, that the ſtock ſhould not be kept ſo long upon the crops as to injure the ſtems of the plants, as that might check the ſucceeding growth of the leaves. This plan is obviouſly confined to ewes or ſtore ſheep.

It is doubtful, however, whether the expence of cultivating this ſort of crop, except in particular ſoils, ſituations, and ſevere ſeaſons, will admit of its being uſed as a winter ſheep food in preference to turnips, or other ſimilar articles of fodder.

Borecole, in *Botany*. See Brassica.

BOREE. See Bourree.

BOREELI Codex, in *Biblical Hiſtory*, a MS. noted F. in the firſt part of Wetſtein's N.T. which contains the four goſpels, beginning with Matth. vii. 6. and having the two following chaſms, Matth. xiii. 25—58. and Mark vi. 6—16. It was formerly in the poſſeſſion of John Boreel, Dutch ambaſſador at the court of London, in the reign of James I. Its preſent ſituation is unknown.

BOREK, in *Geography*, a town of Poland, in the palatinate of Kaliſh; 28 miles W. of Kaliſh. Here is a famous image of the virgin Mary, to which pilgrims reſort.—Alſo a ſmall town of Bohemia, in the circle of Saaz.

BOREL, Peter, in *Biography*, born at Caſtres in Languedoc, about the year 1620, after being initiated in claſſical literature by his father, James Borel, from whom he alſo received a taſte for poetry, and for antiquarian reſearches, proſecuted his medical ſtudies at Montpellier, where he was admitted doctor in medicine, in 1641. Returning to Caſtres, he acquired ſo much reputation by his practice there, that in 1653 he was invited to Paris, and made phyſician in ordinary to the king; and, in 1673, member of the royal academy of ſciences. Borel was a diligent collector of natural and artificial rarities, of which he left a cabinet well ſtored. His publications are, "Les Antiquites, raretés, plantes, mineraux, &c. de la ville et comté Caſtres, et un recueil des inſcriptions Romaines du Languedoc et de Provence, avec la liſte de principaux cabinets et autres raretés de l'Europe." Caſtres, 1649, 8vo. The titles of the articles in his own cabinet are here given. "Hiſtoriarum et obſervationum medico-phyſicarum, centuriæ quatuor," Caſtres, 1653, 12mo. A few of the caſes are curious and intereſting, but far the greater number of them are too inſignificant to deſerve notice, or too extravagant to be credited by perſons who are only moderately inſtructed in the principles of medicine. To this volume are uſually joined the obſervations of Cattier, of Rhodius, of Arnold Boot, and the conſultations of Roſſius. "Bibliotheca chymica, ſeu catalogus librorum philoſophicorum hermeticorum," Pariſiis, 1654, 12mo. "De vero inventore teleſcopii, cum brevi omnium conſpicillorum hiſtoria," Hagæ Comitis, 1655, 4to. "Treſor des recherches et antiquites Gauloiſes." "A dictionary of words and phraſes, which had become obſolete," 1655, 4to. "Diſcours prouvant la pluralite des mondes," Geneve, 1657, 8vo. "Hortus, ſeu armauſentarium ſimplicium plantarum et animalium, ad artem medicam ſpectantium," Pariſiis, 1666, 8vo. To each of the articles, which are arranged alphabetically, the author has given a ſhort account of its medical properties. Borel died at Paris in 1678. Haller. Bib. Anat. Med. Botan. Eloy. Dict. Hiſt.

BORELLI, John Alphonsus, diſtinguiſhed for his profound ſkill in mathematics, and in medicine, was born at Caſtelnuovo in Naples, the 28th of January 1608. Under the tuition of Caſtelli, at Rome, where he was ſent to complete his education, he made ſuch progreſs, that he was, at an early age, invited to Meſſina to teach the mathematics. As he had made medicine, as well as philoſophy, his ſtudy, he there publiſhed an account of a malignant fever which had raged in Sicily, in the years 1647 and 1648. "Delle ragioni delle febri maligni di Sicilia," Coſenza, 1649, 12mo. Diſguſted, at length, with his employers, he accepted the offer of the profeſſor's chair at Piſa, in 1656, where he lectured with great applauſe and ſucceſs. The fame of his abilities had now conciliated to him the favour of the grand duke Ferdinand, and prince Leopold, who procured him to be elected member of the academy del cimento. It was here probably he firſt conceived the deſign of employing mathematical principles, in explaining the functions of animal bodies. He now applied himſelf diligently to the diſſection of animals. Several of his letters, on the ſubject of anatomy, are publiſhed in Malpighi's poſthumous works, written between the years 1659 and 1664. In 1658 he publiſhed, at Piſa, a ſecond tract on the nature and treatment of malignant fevers. "Della cauſe, delle febri maligne," 4to. His firſt phyſiological work, "De rerum uſu judicium," appeared in 1664, with the treatiſe of Bellini, "De ſtructura rerum," printed at Straſbourg, 8vo. In 1669, he gave a diſſertation, ſhewing that in moſt men the eyes have unequal powers, the one ſhewing objects more diſtinctly than the other. "Obſervazioni interno alla virtu inequale degli occhi," Giorue de Lit. In 1667 he publiſhed, "Tractatus de vi percuſſionis," Bonon. 4to.; and in 1669, "Obſervations on a remarkable eruption of mount Ætna," at which he had been preſent, having the preceding year quitted Piſa, and returned again to Meſſina. This account was written at the deſire of the royal ſociety of London, with which he correſponded, and was printed in their tranſactions. In 1770, he gave his treatiſe "De motionibus naturalibus a gravitate pendentibus," a prelude to his great work, "De motu animalium," which did not appear until after his death. At the revolt of Meſſina, being ſuppoſed to have favoured the inſurgents, he was obliged to quit that place. Chriſtina, queen of Sweden, who reſided, at that time, at Rome, invited him thither, and he continued to enjoy her patronage to the time of his death. That he was not, however, much enriched by her favour, nor had acquired much by his lectures, and by the works he had publiſhed, appears by his being obliged, during the two laſt years of his life, to undergo the drudgery of inſtructing youth in mathematics, at the convent of St. Pantaleon, called the pious ſchools, where he died of a pleuriſy, December 31, 1679, in the 72d year of his age. The firſt volume of his work, "De motu animalium," appeared in 1680, Rom. 4to. It is dedicated to Chriſtina, and was printed at her expence; and the ſecond, which completed his deſign, in the following year. Borelli's principal intention in this work, was to explain the functions of animal bodies, on mechanical principles. He deſcribes the fibres of the muſcles, which he ſuppoſes to be be veſicular; and that theſe veſicles become inflated by a portion of the nervous juice failling into them, and mixing and fermenting with the blood they contain, whence the muſcle becomes ſwelled, and its fibres ſhortened. He meaſures the degree of force or power each of the fibres poſſeſſes, and the power of them collectively, which, according to his eſtimate, is immenſe. He ſhews how that power is increaſed or diminiſhed, by the manner in which the fleſhy fibres are joined to the tendons. He calculated the power of the heart, in propelling the blood, which he ſuppoſed was equal to 180,000 pounds in weight. Though Borelli in this and other of his calculations was ſhewn to have erred conſiderably, yet his general principles were for a long time after acknowledged and adopted, and even the operations or effects of medicines, on the human body, were ſuppoſed to be explicable on mechanical principles. He alſo invented an apparatus by which perſons might go down a conſiderable depth under water, remain there, move from place to place, and ſink or raiſe themſelves at their diſcretion; alſo a boat in which two or more perſons might row themſelves under water. Haller. Bib. Anat. Gen. Biog. Philoſ. Tranſactions abridged, vol. ii.

BORER, in *Rural Economy*, an implement invented for the purpoſe of ſearching or exploring the nature of ſoils. This inſtrument is compoſed of two rods of iron, each ſix feet long, and an inch in diameter. The end *a* of *fig.* 1. in Plate on draining implements, ſcrews into the end *b*, of *fig.* 2. after taking out the ſtopper *c*, the uſe of which is to hinder dirt or duſt from getting into the ſcrew. The ſcrew is an inch and a half long, and three quarters of an inch in diameter: *d*, *fig.* 1. is a ſteel point ſomewhat blunt, to pierce the earth or any ſubſtance it may meet with. It ſhould be about three inches long, and made with three, four, or more, ſides, as may be thought moſt convenient. It is ſcrewed into the rod *a* in the ſame manner, and with a ſcrew of the ſame ſize as *a* is ſcrewed into the rod *b*. It has a groove ſix inches long, a third of an inch wide, and three quarters of an inch deep, rounded in the bottom, and intended to bring up part of each different layer of materials through which it paſſes. When ſprings are ſought for, a bit of ſponge is put into the groove. At the end of the rod, *fig.* 2. is a ſcrew to fix into another rod of the ſame kind, if it be found neceſſary to lengthen the inſtrument; and this may be repeated, by the addition of more rods, to any depth deſired; *g h*, *fig.* 1. is the handle of this inſtrument, two feet and a half long; this handle is faſtened to the rod by means of a claſp, *i*, lined with ſteel, fixed at one end by a hinge, and at the other by the ſcrew *b*, ſo that it may be placed at any height. *Fig.* 3. is the handle ſeparated from the rod, and marked with the rod, with the ſame letters as before. *Fig.* 4. is another handle, or rather lever like the handle already deſcribed, except its having only one branch, or lever, marked *g*. This ſerves to ſtop the borer in bringing it up from a conſiderable depth; and alſo to ſcrew and unſcrew the ſeveral bars or joints as occaſion requires, and to put on and take off the ſteel point at the bottom. The handle *g h*, *fig.* 1. is that by which the rod is held, and wrought into the earth, either by twiſting it round, eſpecially at firſt, or, after it has penetrated to ſome depth, by lifting it up, and letting it fall again, which it does with ſuch force as to pierce even the hardeſt rocks; eſpecially if it works at any conſiderable depth, and has of courſe been lengthened accordingly; for every foot of this rod weighs three pounds. Two men will eaſily ſound the depth of twelve feet in leſs than a quarter of an hour, if they do not meet with many ſtones. When the rod becomes too heavy to be properly managed by hand, it may be raiſed by a rope faſtened at one end of the handle, and at the other to a roller, or kind of windlaſs, erected at a proper height, prependicularly over the hole, and turned with either one or two handles. This will coſt but a trifle, and eaſily raiſe the rod, which, when let go, will fall with ſuch weight as to ſtrike each time very deep into the earth. The marquis de Turbilly obſerves, that he has ſeen it wrought in this manner to the depth of more than a hundred feet.

The tougheſt iron is the beſt for making this inſtrument, which ſhould be well hammered, till its ſurface is quite ſmooth and even; for the leaſt roughneſs and inequality would occaſion friction, which would grately retard its working. For the ſame reaſon, and alſo to increaſe the force of its fall, it is neceſſary that it ſhould be perfectly ſtraight; nor ſhould it ever be ſtruck with a mallet, hammer, &c. to force it down, becauſe a blow might bend it, and it would eaſily break afterwards. The female ſcrew muſt be turned like that in the breech of a gun-barrel, in a ſeparate piece of iron, croſs-ways to the grain; and this piece muſt be afterwards well ſoldered on to one of the ends of the rod. The reaſon for this is, that if the female ſcrew were bored only at the end of the rod, it would, by being hammered out in the ſame direction with the grain, be ſtringy and porous, and conſequently ſo weak as to give way, or burſt, in the working of the rod; whereas, when made of a ſeparate piece, taken croſs-ways of the grain, the threads of the ſcrew will run with the grain of the iron, and be thence conſiderably ſtrengthened. A bit, like that of an augre, proportioned to the thickneſs of the rod, may at any time, when neceſſary, be ſubſtituted inſtead of the ſteel point, to draw up a ſample of the ſubſtance from the very bottom of the ſounding.

If the only thing wanted be to know the nature of the under ſoil, and layers of earth, ſo far as they may affect the vegetation of plants, it will be quite ſufficient to bore eight or ten feet deep. A greater depth is only requiſite, when water, marle, ore, &c. is ſought for, but the common augre may do very well for ſhallow boring.

By either of theſe implements there is a certainty of diſcovering, without much charge or any hazard, not only what earths are under the upper ſoil, but alſo whether any other ſubſtance of value lies concealed there, ſuch as marle, chalk, fullers' earth, foſſile ſhells, coals, quarries of ſlate or ſtone, ores, &c. many of which lie hid and entirely unthought of in places where their value, was it known, would be ten times more than that of the eſtate which covers them.

BORETIUS, Matthew Erneſt, a learned phyſician and anatomiſt of Berlin, publiſhed in 1724, "Anatome plantarum et animalium analoga," Regiom, 4to; and in 1739, "Muſæum Boreticium, et catalogus præparatorum anatomicorum rerumque naturalium," Regiom, 8vo. Haller. Bib. Anat.

BOREUM, in *Ancient Geography*, a mountain of Greece, in the Peloponneſus, placed by Pauſanias, in Arcadia.—Alſo, the name of a port in the iſle of Tenedos, according to Arrian.—Alſo, a promontory of Africa, in the Cyrenaica, at the extremity of the gulf of the Syrtis Major. Ptolemy.

BORG, or Burg, in *Geography*, a town of Denmark, in the iſland of Femern. N. lat. 54° 30′. E. long. 11° 8′.

BORGARUCCI, Proſper, in *Biography*, an Italian phyſician of eminence, who flouriſhed about the middle of the 16th century. After attending the lectures of Veſalius for ſome years, he travelled into France, Holland, and England, to improve himſelf in medical knowledge. On his return he publiſhed "Della contemplazione anatomica ſopra tutte le parti del corpo umano, libro quinque," 8vo. 1564, Venet. Some uſeful obſervations are made, in this volume, on the great anatomical work of Veſalius, whom our author, however, every where treats with reſpect. "Trattato di peſte," Venet. 1565, 8vo. "De morbo Gallico methodus." Though he deſcribes the method of curing the lues with mercury, he prefers the uſe of guiacum, believing that men from uſing mercury were rendered incapable of procreating. He makes no mention of ſarſaparilla, or the China root, though well known in his time. This tract is inſerted by Leuſinius in his collection of treatiſes on the diſeaſe. Borgarucci taught anatomy and medicine at Padua for ſome years. In the year 1567, he was called to France, where he was honoured with the title of phyſician to the king, which he afterwards uſed. The time of his death is not known. Aſtruc. de Morb. Ven. Haller. Bib. Anat. Eloy. Dict. Hiſt.

BORGE, in *Geography*, a town in the iſland of Cephalonia; 2 miles S. of Cephalonia.

BORGE-Fiords, or Borgan-fiorder, a ſyſſel or diſtrict of Iceland, in which are warm baths, built in the 13th century, by the famous hiſtorian Snorro Sturlaſon. They are ſo ſpacious and ſo well contrived, that 100 perſons may bathe in them at the ſame time. Near theſe is the croſs-bath, in which the inhabitants of the weſtern parts of Iceland were baptized, in A. D. 1000; whence its name.

BORGENTRICK, or Borrenrik, a town of Germany, in the circle of Weſtphalia, and biſhopric of Paderborn; 5 miles N. N. E. of Warburg.

BORGHETTO, a town of Italy, in the Lodeſan, 7½ miles S. of Lodi.—Alſo, a town of Italy in the ſtate of Genoa, 8 miles N. E. of Albenga.

BORGHINI, Vincent, in *Biography*, a learned Benedictine, was born of a noble family at Florence in 1515; and entered among the Benedictines in 1531, devoting himſelf to ſtudy and the offices of a religious life. Duke Coſmo appointed him prior to the hoſpital Sta. Maria degli Ennocenti at Florence; and he performed the duties of this ſtation with great benefit to the inſtitution, declining the archbiſhopric of Piſa, till his death in 1680. His reputation for acquaintance with the purity of the Tuſcan dialect was ſuch, that he was entruſted with the publication of a corrected edition of the decameron of Boccacio in 1573; and to him are aſcribed the annotations and diſcourſes that accompany it. His own principal work conſiſted of two volumes of "Diſcorſi," printed at Florence in 1584 and 1585, 4to. which comprehend twelve diſſertations on the origin and ancient ſtate of that city, and of others in Tuſcany, abounding with a variety of curious erudition.' He was likewiſe well ſkilled in painting and architecture; and he was entruſted by duke Coſmo with the decorations for the nuptials of his ſon Francis, and named by him as his ſubſtitute in the academy of deſign. Several of his letters are publiſhed in various collections. Gen. Biog.

BORGHOLM, in *Geography*, a town of Sweden, in the iſland of Oeland. Near it is the commodious harbour of Borga.

BORGHOLZHAUSEN, a town of Germany, in the circle of Weſtphalia, and county of Ravenſberg, 6 miles S.W. of Hervorden.

BORGHORST, a town of Germany, in the circle of Weſtphalia, and biſhopric of Munſter; 3 miles E. of Steinfort.

BORGI, in *Ancient Geography*, a people of Aſia, placed by Ptolemy in Aria.

BORGIA, Cæsar, in *Biography*, a man whoſe dire ambition deſerves to be conſigned to perpetual infamy in the page of hiſtory, was the ſecond ſon of cardinal Roderigo, (afterwards pope Alexander VI.) by his miſtreſs, the artful Vanozza. As he was deſigned for the church, he was inveſted, whilſt a child, with the archbiſhopric of Pamplona, and ſent to Piſa for his education. As ſoon as his father was elected to the papal ſee, in 1492, Borgia haſtened to Rome, expecting to ſhare in thoſe dignities which his father's elevated ſtation empowered him to beſtow. On his arrival, Alexander received him with a grave aſpect, and with a lecture on the neceſſity of reſtraining his ambitious views, and of ſeeking honour in the path of virtue. This mode of reception was neither ſuited to the character of the father nor to the diſpoſition of the ſon: but the mother of Borgia ſoon quieted his mind, by aſcribing it to its true cauſe, the artifice and hypocriſy which Alexander thought it neceſſary to practiſe on his elevation to the papal throne. Notwithſtanding this leſſon of moderation, Borgia was immediately made archbiſhop of Valentia, and, in the following year, promoted to the dignity of cardinal. When the French army, under Charles VIII. entered Rome, in their expedition againſt Naples, and compelled the pope to a treaty, Borgia was obliged to accompany the king as apoſtolical legate, or rather as an hoſtage for the performance of the ſtipulated conditions; but finding an opportunity to make his eſcape, and to return to Rome, the treaty was broken, and the king was under a neceſſity of leaving Italy. About this time Vanozza urged a complaint againſt the French for having plundered her property, and excited both Alexander and her ſon to revenge the injury ſhe had ſuffered. Accordingly they began with adminiſtering poiſon to Geme, brother to Bajazet, who had fled to Italy, as to a ſanctuary, from that ſultan, and whom the French wiſhed to have in their poſſeſſion, becauſe, after the taking of Naples, they projected an expedition againſt the Turks. Not ſatisfied with this violation of the obligations of hoſpitality, they proceeded, by means of aſſaſſins, to deſtroy the French who remained at Rome. Borgia, conceiving that his elder brother, the duke of Gandia, obſtructed him in the career of his ambition, and that he was his rival in an amour with a lady, ſaid by ſome to be their own ſiſter, Lucretia Borgia, who was alſo a very particular favourite of her father, determined to get rid of his competitor. Accordingly, on the eve of his departure to the king of Naples, under the character of his legate a latere, he contrived means to aſſaſſinate his brother. This event happened in the year 1497. After the acceſſion of Lewis XII. to the throne of France, pope Alexander entered into a negotiation with him, particularly with a view to the promotion of his ſon. For the more effectual attainment of the objects of his ambition, Borgia reſigned his dignity of cardinal; and proceeded as ambaſſador to France, where Lewis created him duke of Valentinois, granted him a penſion, and appointed him to a command of cavalry. At this time Lewis had ſolicited the pope for a diſpenſation to divorce his wife, and to marry Anne, ducheſs of Burgundy; and the diſpenſation for this purpoſe was conveyed by Borgia. Borgia, however, retained it in his poſſeſſion, in order to enforce his intereſt with the king, for obtaining Charlotta, daughter of the king of Naples, who was intended by his father Alexander for his wife. But pretending that he was in daily expectation of receiving the diſpenſation from Rome, and delaying the delivery of it, the king became impatient; and applying to the biſhop of Setta, who was then the pope's nuncio at Paris, he was informed, that Borgia had brought it with him to France. Upon this Lewis convened a number of divines, who authorized him to divorce his wife, and to marry Anne of Burgundy. The marriage having been concluded, Borgia was at length obliged to deliver the diſpenſation to the king; but he revenged himſelf on the nuncio by a doſe of poiſon, which proved fatal. Charlotta rejecting his addreſſes, on account of his infamous character, he married the daughter of the king of Navarre, and was honoured by Lewis with the order of St. Michael. The father and the ſon, powerfully protected by France, co-operated in a variety of barbarous aſſaſſinations, partly for the purpoſe of revenge for real or imagined injury, and partly with a view of ſeizing the property of thoſe whom they diſpatched, in order to carry on an unjuſt war, which they had undertaken. The pope, having formed a deſign of reducing the territory of Romagna to the obedience of the holy ſee, intended to form it into a principality for his ſon. Borgia, now duke of Valentinois, came from France with a conſiderable force, in order to accompliſh the purpoſes of his father; and began his campaign with the ſiege of Imola and Forli, which ſoon ſurrendered; and he afterwards reduced Peſaro, Rimini, and Faenza. In 1501, Borgia obtained from his father the title of duke of Romagna. In the courſe of this war, conducted with a ferocity and ſpirit of rapine and revenge ſeldom paralleled, he proceeded with ſuch ſucceſs, that the Italian powers were at length alarmed, and formed a confederacy againſt him. He contrived, however, to defeat this combination, to detach ſome parties from the alliance, and, with his accuſtomed perfidy and cruelty, to invite three of the heads of the aſſociation to Senigaglia, under a pretence of eſtabliſhing peace, and there to cauſe them to be ſtrangled. Borgia and his father concurred in all theſe deteſtable meaſures, and by their united arts, alternately courted the powers of France and Spain, as each appeared to have the greateſt influence in the affairs of Italy. In 1503, Borgia loſt his father, who was ſuppoſed to have died by poiſon, which they had prepared for a rich cardinal, whoſe eſtate they wiſhed to appropriate to themſelves, but which they both took by miſtake. It proved fatal to the father; but the ſon, by ſtrength of conſtitution, eſcaped with his life, though he long experienced its pernicious effects. Upon the acceſſion of pope Pius III. Borgia came to Rome with a great retinue; but being univerſally deteſted, he avoided the aſſaults of his enemies by ſheltering himſelf in the Vatican; and his life was preſerved by the protection of the king of France; but he afterwards, with baſe ingratitude, quitted his party, and joined that of Spain. During this interval, many of the towns in his territory of Romagna were ſeized by the Venetians; and pope

Julius II. ſeized him at Oſtia, and confined him in priſon, in order to compel him to ſurrender the reſt. As ſoon as he made his eſcape from this confinement, he ſought refuge in Naples, and was at firſt treated with reſpect by the Spaniſh general, Gonſalvo de Cordova; but in conſequence of an order from the king of Spain, he was ſent thither, and condemned to perpetual impriſonment in the caſtle of Medina del Campo. Here he remained two years; but eſcaping out of a window, by means of a rope, he fled to Navarre, ſeeking the protection of king John, his wife's brother. From hence it was his intention to have viſited France, and to have engaged the aſſiſtance of king Lewis in retrieving his fortune: but that king refuſed to receive him, confiſcated his duchy of Valentinois, and withdrew his penſion. In this ſtate of humiliation and diſtreſs, without territory or revenue, not only friendleſs but generally deteſted, he was under a neceſſity of depending upon his brother-in-law for a ſubſiſtence; and being engaged as a volunteer in his ſervice, on occaſion of a civil war with one of his rebellious ſubjects, he was killed in a ſkirmiſh before the walls of Viana, in 1507. His body was ſtripped by the victors; but being afterwards recognized by his ſervants, it was carried upon a horſe, and interred in the cathedral of Pamplona. "Such," ſays one of his biographers, "was the end of this man, who, for his abilities in forming, and vigour in executing, great ſchemes for his aggrandizement, unmoved from his purpoſe by any conſiderations of juſtice, honour, or humanity, has been held up to admiration by Machiavel, as the perfect ſpecimen of a "great man." Hated in proſperity, deteſted in adverſity, ſtripped of all his honours and poſſeſſions, even ſuch as he might fairly have claimed, and leaving behind him a name conſigned to univerſal deteſtation, it would ſeem that he gained little by being a villain." Borgia's motto was "Aut Cæſar, aut nihil." Mod. Un. Hiſt. vol. xxiii. Gen. Dict. Gen. Biog.

BORGIAN MS. in *Biblical Hiſtory*, a fragment of a Coptic-Greek MS. brought by an ignorant monk from Egypt, conſiſting of about 12 leaves, ſent to Stephen Borgia, ſecretary to the Society de propaganda fide. It begins with John vi. 28. and ends vii. 23.; and is divided into two columns, the firſt containing the Greek text in uncial letters, and without intervals between the words, and the other containing the Coptic. It is an important ſpecimen, ſays Michaelis, of the Alexandrine edition; and he greatly laments that ſo much of it is loſt. Profeſſor Birch, who collated this MS. deſcribed it in his Prolegomena, p. 49, and communicated its various readings in his Greek Teſtament. The whole of it is printed in "Georgii Fragmentum Græco-Copto-Thebaicum," Romæ, 1789, 4to. Birch has likewiſe deſcribed and communicated the readings of two other Borgian MSS.; one ſuppoſed to be of the 11th century, containing the four goſpels, and the other of the 12th, containing detached parts of the goſpels, and of St. Paul's epiſtles.

Borgian, in *Geography*, a town of Perſia, in the province of Segeſtan, 90 leagues ſouth of Zareng.

BORGIANI, Orazio, or Horazio, in *Biography*, a painter of hiſtory and portraits, and an engraver, was born at Rome in 1630; inſtructed in the art of painting by his brother, Giulio Borgiani, called Scalzo; and by ſtudying the capital performances of ancient and modern artiſts in his native city, he made ſuch progreſs in his art, that his works were held in high eſtimation in Spain, where he reſided for ſome time. Upon his return to Rome, he was employed in conſiderable works for chapels and convents, and alſo in painting portraits, by which he acquired honour, and lived in affluence. His etchings were performed in a bold and free manner; and more finiſhed than uſual, when conſidered as the works of a painter. His drawing is not correct; but the ſtyle is maſterly, and the effect agreeable. His moſt finiſhed etching is ſaid to be a "dead Chriſt," with the figure very much fore-ſhortened, and behind the two Maries and St. John, who is kiſſing one of the hands of our Saviour; from a compoſition of his own, dated 1615. His death, which happened in 1681, was occaſioned by the malicious treatment of an envious competitor and contemporary, whoſe name was Celio. Pilkington and Strutt.

BORGIE, in *Geography*, a town of Africa, in the province of Zeb or Zeeb, about 5 leagues from Biſcara; a town much more populous than the latter, and the reſidence of a great number of merchants, mechanics, and labourers of all kinds.

BORGLUM, a prefecture of Denmark, in the dioceſe of Aalburg, including 14 pariſhes.

BORGNE, Le, a town on the north ſide of the northern peninſula of the iſland of St. Domingo, 3 leagues weſt by north from port Margot, and 8 eaſt by ſouth from Port de Paix. N. lat. 19° 49′.

BORGO, a town of Sweden, in the province of Nyland, in the gulf of Finland, 21 miles N.E. of Helſingfors. This is an ancient ſea-port, with an indifferent harbour, a biſhop's ſee, and a good ſeminary. The inhabitants trade in all kinds of linen. Borgo gives name to a diſtrict.

Borgo, a town of the Tyrol. N. lat. 46°. E. long. 11° 30′.

BORGODES, in *Ancient Geography*, a people placed by Pliny in Arabia Felix.

BORGOFORTE, in *Geography*, a town of Italy, in the duchy of Mantua, at the conflux of the Oglio and the Po; 8 miles S.S.W. of Mantua.

BORGOFRANCA, a place of ſmall note in the principality of Piedmont, and marquiſate of Ivrea, 2½ miles north of Ivrea.

BORGO Di Fornari, a town of Italy, in the republic of Genoa; 10 miles north of Genoa.

Borgo Manero, a ſmall place in the duchy of Milan, and diſtrict of Novareſe; 12 miles N.N.W. of Novara.

Borgo di St. Domino, a ſmall town of the duchy of Placentia, though it is the ſee of a biſhop, ſuffragan of the archbiſhop of Bologna, and the capital of the diſtrict; 12 miles N.W. of Parma.

Borgo di St. Sepolero, a town of the duchy of Tuſcany, ſituate near the ſource of the Tiber, on the borders of the eccleſiaſtical ſtate, with a fort on a rock; the ſee of a biſhop, ſuffragan of Florence, and fief of the pope; 48 miles E.S.E. of Florence, and 12 N.E. of Arezzo.

Borgo di Sesia, a town of the duchy of Milan, in a diſtrict called "Val di Seſia;" 22 miles N. W. of Novara.

Borgo di Val di Taro, a town of the duchy of Placentia, ſeated on the river Taro, in the diſtrict called "Val di Taro;" 23 miles S.W. of Parma.

BORGSTALL, a town and bailiwic of Germany, in the circle of Upper Saxony, and Old Marck of Brandenburg; 12 miles S.S.W. of Stendal.

BORIA, or Borja, a town of Spain in Arragon, ſeated at the foot of an eminence near Cayo, and in a country which produces plenty of grain, wine, oil, hemp, flax, and moſt kinds of eſculent plants; 34 miles W. N. W. of Saragoſſa.

BORJA, a town of Peru, ſituate on the head waters of the Amazon river.—Alſo, a town in Brazil, on the ſouth-eaſtern bank of Uraguay river. S. lat. 29° 15′. W. long. 56° 30′.

BORIN, in *Ornithology*. Under this name Aldrovandus, Ray, Willughby, and other old writers deſcribe the paſſerine warbler, *motacilla paſſerina*, Gmel.

BORING, the act of perforating a ſolid body, or making a hole throughout its whole length or thickneſs.

Surgeons ſpeak of boring the bones of the ſcull, properly called trepanning.

Boring *birch*, and other trees, is practiſed in the ſpring for their juice, called alſo *tapping* and *bleeding*. Phil. Tranſ. N° 44. p. 880. See Betula.

Boring, in *Farriery*, an operation formerly practiſed for the cure of horſes whoſe ſhoulders are wrenched. The method is thus: they cut a hole through the ſkin in the middle of the ſhoulder, and with the ſhank of a tobacco pipe, blow it as a butcher does a ſhoulder of veal; then they run a cold flat iron, like a horſeman's ſword-blade, eight or ten inches up, between the ſhoulder blade and the ribs, which they call boring; after that they burn him round his ſhoulder with a hot iron. This, ſays Bartlett, is an abſurd and uſeleſs, as well as a cruel practice.

Boring *of Cannon*, in *Foundery*. See Cannon.

Boring *of Maſts*, from top to bottom, is propoſed by Dr. Hook, as a means of ſtrengthening and preſerving them; as this would make them dry and harden the better, and prevent their cleaving and cracking. For want of this the outſide drying, when the inſide does not, the former ſhrinks faſter than the latter; the conſequence of which is prejudicial.

Boring, in *Mineralogy*, a method of piercing the earth by a ſet of ſcooping irons, made with joints ſo as to be lengthened at pleaſure. The ſkilful mineraliſt will be able to gueſs where a vein of ore may lie, though there are none of the common outward ſigns of it upon the ſurface of the earth; and in this caſe he has recourſe to boring; the ſcooping irons are drawn back at proper times, and the ſamples of earth and mineral matters they bring up, are examined; and hence it is known whether it will be worth while or not to open a mine in the place. See Coal.

Boring, in *Rural Economy*, a practice ſometimes employed in order to aſcertain the nature of the different ſtrata that lie beneath the ſurface ſoil; and alſo for the purpoſe of diſcovering ſprings, and tapping them, ſo as to draw off the water that injures the grounds below, or in the neighbourhood. When this laſt object is in view, boring is generally performed in the bottoms of ditches or drains, previouſly made in the land, to the depth of ſeveral feet. See Draining *of Land*.

Boring *Augre*, an implement employed for the purpoſe of boring the ſoil, and letting off water confined beneath it, &c. See Borer.

Boring *of Water-pipes*. The method of boring alder poles for water-pipes is thus: being furniſhed with poles of a fit ſize, horſes, or treſſels are procured of a due height both to lay the poles, and reſt the augre on in boring; they alſo ſet up a lath, whereby to turn the leſſer ends of the poles, and adapt them to the cavities of the greater ends of others, in order to make the joint ſhut each pair of poles together. The outer, or concave part, is called the female, and the other, or inner, the male part of the joint. In turning the male part, they make a channel, or ſmall groove in it, at a proper diſtance from the end; and in the female part, bore a ſmall hole to fit over this channel; they then bore through their poles, ſticking up great nails at each end to guide them right; but they commonly bore a pole at both ends; ſo that if it be crooked one way, they can nevertheleſs bore it through, and not ſpoil it. Neve Build. Dict. in voc. Alder.

This operation is now performed with a horſe-mill, as at Dorſet Stairs for the New River company.

Belidor, in his Hydraulics, has deſcribed a machine, in which a water-wheel is made uſe of both to turn the augre, and to bring forward the carriage on which the pipe to be bored reſts. This machine (ſee *Tab.* II. *Mechanics*, *fig.* 67.) is put into motion by the water-wheel A, in the axis of which there is a cog-wheel B, that turns the lanterns C and D; the trundles of D turn two ſmall wheels E and F; the firſt of which is vertical and turns the augre; the other is horizontal and moves the carriage by means of the two arms H and I. H draws the wheel G towards F; and I puſhes it in a contrary direction; and theſe combined actions cauſe the carriage to advance towards F, and the augre to bore the pipe. The augre being about twelve feet long and proportionally heavy, is ſupported by the pieces L L; and they are prepared ſo as to give no obſtruction, in the following manner: CC, (*fig.* 68.) are two planks of wood which are faſtened to the timber-work of the mill; theſe encompaſs another plank, hung by a cord, at the bottom of which are fixed the pieces *bb*, with joints at *e* and *e*, and, that they may not move out of the vertical plane, they are joined by tenons to the plank *a*, in which they may work freely: on the ſide of one of theſe pieces is fixed a ſpring, *g*, in order to hinder them from uniting, by forcing them into a mortiſe, in *d*; in this ſituation the two pieces are penetrated with a hole through which the augre is to paſs. The cord is faſtened to the plank *a*, as in *fig.* 69, and goes over the two pullies *hh*; at the other end of the cord there is hung a weight *e*, reſting on the piece N, which is ſupported at one end by the piece O, and fixed to the other by a joint to the lever K, which has its centre of motion in the piece of wood H; ſo that, leaning againſt the extremity M of the lever, N quits the ſupport O, the weight ſinks down, and draws up the piece *a*; then the ſides *bb*, *fig.* 68, quit the mortiſe *d*, and the ſpring *g* ſeparates them: and thus the ſupporter does not in the leaſt hinder the motion of the augre.

BORJOKFIT, in *Geography*, a town of Poland, in the palatinate of Podolia; 28 miles eaſt of Kaminiec.

BORIQUEN. See Bieka.

BORIQUETTA, a province of South America, in the country of Terra Firma.

BORISSOGLEBSK. See Barissoglebsk.

BORITH, in the *Holy Scriptures*, an herb thought to be the kali, or ſaltwort; of the aſhes of which ſome make ſoap, and a very good ley to waſh linen with. It is mentioned in Jeremiah, chap. ii. ver. 22.

BORKAH, or Ardu, in *Geography*, an ancient empire of the Aſconian Turks, which extended on this ſide of the Volga from Uvieck, near Saratof, quite to mount Caucaſus. Some of theſe were called Kumani or Komani, from the river Kuma, and their town was named Kumager.

BORKAN, a town of Perſia, in the province of Lariſtan; 64 miles S.W. of Lar.

BORKELOE. See Borckeloe.

BORKEN. See Borchen.

Borken, a bailiwick of Germany, in the landgraviate of Heſſe, conſiſting of eight villages, and a ſmall town of the ſame name, become almoſt extinct.

BORKZOWKA, a town of Poland in the palatinate of Podolia, 20 miles W.N.W. of Kaminiec.

BORLASE, William, in *Biography*, an eminent topographical writer, was born of an ancient family at Pendeen, in the pariſh of St. Juſt, Cornwall, in 1696; and having finiſhed his grammatical education at Penzance, Tiverton, and Plymouth, was entered at Exeter college, Oxford, in 1713; where, in 1719, he took the degree of maſter of arts. In the following year he took prieſts' orders, and in 1722 was inducted to the rectory of Ludgvan in Cornwall, on the preſentation of the duke of Bolton; and this, with the vicarage of his native pariſh, was the only preferment he ever obtained. At Ludgvan his ſituation was pleaſant and retired; and he applied with exemplary aſſiduity to the duties of his profeſſion, and to thoſe ſtudies of natural hiſtory and antiquities, to which his inclination led him. The pariſh of Ludgvan abounded with mineral and metallic foſſils; and the various parts of Cornwall preſented to his reſearch many druidical remains. To theſe objects his attention was directed; and he commenced his literary career with "An Eſſay on Corniſh Cryſtals," which he communicated to the Royal Society, and which produced his election into that ſociety in 1749. In 1754, he publiſhed, in folio, his "Antiquities, hiſtorical and monumental, of the county of Cornwall, conſiſting of ſeveral eſſays on the ancient inhabitants, Druid ſuperſtition, cuſtoms and remains of the moſt remote antiquity in Britain and the Britiſh iſles, exemplified and proved by monuments now extant in Cornwall and the Scilly iſlands; with a vocabulary of the Cornu-Britiſh language;" a learned and judicious work, free from thoſe long digreſſions and fanciful hypotheſes, in which antiquarian writers have indulged themſelves. A ſecond edition of this valuable work, with ſeveral additions, a map of Cornwall, and two new plates, was publiſhed at London, in 1769. His next publication was "Obſervations on the ancient and preſent ſtate of the iſlands of Scilly, and their importance to the trade of Great Britain," 4to. 1756. This was followed, in 1758, by his "Natural Hiſtory of Cornwall," which was juſtly conſidered, at the time of its publication, as a very important acceſſion to the mineralogical hiſtory of Great Britain. Soon after this publication he preſented to the Aſhmolean muſeum at Oxford, a variety of foſſils and remains of antiquity, for which he received the thanks of the univerſity, and the honour of the degree of doctor of divinity. Having completed his three principal works, and attained the age of more than 60 years, he perſevered in his application to his favourite ſtudies, and in his diligent diſcharge of the duties of his profeſſion. His communications to the Royal Society were very numerous; and ſome or other of his papers may be found in its Tranſactions from the year 1750 to 1772. With a view to his own amuſement and improvement, rather than with any deſign of publication, he compoſed paraphraſes on the books of Job and of Solomon, and wrote other pieces of a religious kind; and he prepared for the preſs a treatiſe, which he had written ſome years before, concerning the "Creation and Deluge;" but increaſing infirmities prevented its being printed. His decline commenced with a ſevere illneſs in the beginning of the year 1771, and terminated in his deceaſe on the 31ſt of Auguſt 1772, in the 77th year of his age. "He was much eſteemed by all who knew him, as a kind father, affectionate brother, ſincere friend, inſtructive paſtor, and good citizen; and as a man of erudition whoſe life had been devoted to important and uſeful purſuits. He had ſix ſons, two of whom ſurvived him, and they were both in the church. Dr. Borlaſe furniſhed Mr. Pope's grotto at Twickenham with a great number of the materials that were uſed in forming it. In Mr. Pope's letter of acknowledgment, he ſays, "I am much obliged to you for your valuable collection of Corniſh diamonds. I have placed them, where they may beſt repreſent yourſelf, *in a ſhade, but ſhining*;" alluding to the obſcurity of the donor's ſituation, and the brilliancy of his talents. Biog. Brit.

BORMES, in *Geography*, a town of France, in the department of the Var, ſeated on the coaſt of the Mediterranean, near a flat ſhore, which ſerves for a port, whither the veſſels, which cannot reach the gulf of Hieres before a tempeſt, retire; 3 leagues E. of Hieres.

BORMIDA, or Bormia, a river of Italy, which runs into the Tanaro, near Alexandria.

BORMIO, a county in the territory of the Griſons, lying at the foot and in the midſt of the Rhætian Alps, and bordering upon Engadina, the valley of Munſter, the Valteline, Tyrol, Trent, and the Venetian territories. It is entirely incloſed within the mountains, except a narrow opening, which connects it with the Valteline; the other acceſſes to it lie acroſs the rugged Alps, and in winter are frequently impaſſable. This country, which was once a part of the Milaneſe, became ſubject to the Griſons in 1512. (See VALTELINE.) It is divided into five diſtricts; viz. Bormio, compriſing the capital and ſeveral dependent villages; the valley of Furba; the valley of Pedinoſo; the valley of Cepino; and the valley of Luvino. In the new diviſion of Swiſſerland, ſince the French revolution, the county of Bormio, with the Valteline and Chiavenna, form a part of the Ciſalpine republic. Whilſt it remained under the government of the Griſons, its inhabitants were exempt from the oppreſſions exerciſed by the Griſon governors in the other countries ſubject to their dominion. They paid a fixed and moderate contribution; they collected and enjoyed their own duties upon exports and imports, and were thus ſecured from injudicious and oppreſſive taxes; the fines for criminal offences belonged to the community; and as no part was aſſigned to the governor, he was not intereſted in convicting criminals; and the chief privilege, which diſtinguiſhed this country from the Valteline, was the freedom of its government, and the limitation of the podeſta's authority.

The ſupreme magiſtrate of Bormio, called "Podeſta," was ſent from the Griſons, and continued two years in office; his authority was very circumſcribed, and his power was almoſt wholly dependent on the concurrence of the councils. In thoſe councils he never gave a vote, except in caſe of equality; he poſſeſſed not the power of arreſting a criminal, nor of pardoning or leſſening the puniſhment. His annual ſtipend of about 80l. aroſe partly from a payment of money, partly from an allowance of rye, and partly from the coſts of ſuit in civil and criminal cauſes. The ſupreme authority reſided in the podeſta, and councils, conſiſting of a civil and criminal tribunal, the members of which were annually choſen by the people. The criminal court, or council of ſixteen, changed every four months, conſiſted of two regents, the treaſurer, the notary, and 16 counſellors, of whom ten were taken from the town, and two from each of the vallies Furba, Pedinoſo, and Cepino. This council was convened by the podeſta, at the requeſt of the two regents. In order to arreſt a criminal, it was neceſſary to aſſemble the whole council, or at leaſt ſeven of the members; in other important caſes, the podeſta and two regents might give an order of arreſt; but this was deemed contrary to law. The proceſs, conducted by the podeſta and two regents, was laid before the council; and upon conviction of the criminal, provided he did not confeſs his crime, the majority of the council determined whether the evidence was ſufficient to juſtify torture: which was applied in the preſence of the podeſta, the two regents, the treaſurer, and notary. If the proofs were inſufficient for conviction, the podeſta and counſellors received nothing for their attendance; a regulation, which ſometimes induced the judges to ſtrain ſlight circumſtances into proofs of guilt, and not unfrequently occaſioned the infliction of torture.

The civil tribunal conſiſted of twelve members taken from the town of Bormio; and from their deciſion an appeal lay to the ſyndicate of the Griſons.

The members of theſe councils were choſen annually by the aſſembly of the people. In the choice of the two regents, ſix perſons ſelected in a peculiar manner by the regent laſt in office and the treaſurer, choſe ſix members of the aſſembly, three from the diſtrict of Bormio, and three from the vallies, who appointed ſix candidates; the names were then thrown into ſix bags, and ballotted for; and the two who had the greateſt number of ballots, were regents, who remained in office only four months. The revenue of the country amounted in one year to 222l. 14s. 4d.; and the average expences to 212l. 2s. 2d. The expences and receipts are ſubmitted, when the regents retire from office, to the council of ſixteen, and cannot paſs without their approbation.

The county of Bormio is about 15 miles in length, and 14 in breadth; and the inhabitants are eſtimated at about 14,000. The mountainous parts produce only paſturage and wood; the lower diſtrict about Bormio yields corn, but not ſufficient for domeſtic conſumption. The inhabitants export cattle, a ſmall quantity of cheeſe, and iron obtained from the mines of Freli, in the valley of Pedinoſo, wrought at the expence and for the profit of a private perſon, who pays to the community a ſmall annual rent. The honey produced in Bormio is eſteemed excellent. Wine is imported from the Valteline, corn from the Tyrol, corn and rice from Milan, linen from Bergamo and Appenzel, and cloth from Germany. The air is cool, but pure and healthy. The eſtabliſhed religion is the Roman catholic; and the exerciſe of every other worſhip is prohibited. Spiritual affairs are under the juriſdiction of the biſhop of Coire, who has a vicar's court at Bormio, in which all eccleſiaſtical cauſes are tried. The prieſts have peculiar privileges, which are extended even to thoſe who wear a clerical dreſs. Moſt of the peaſants poſſeſs a ſmall portion of land, and, in conſequence of the freedom of the government, are happier than the people of the Valteline and Chiavenna. Coxe's Travels, vol. iii.

BORMIO, the capital of the county of the ſame name, is ſituated at the foot of the mountains, cloſe to the torrent Fredolfo, which falls at a ſmall diſtance into the Adda. It contains about 1000 inhabitants, but has a deſolate appearance; the houſes are of plaiſtered ſtone, of which ſome few make a tolerable figure, amidſt many with paper windows; and ſeveral, like the Italian cottages, have only wooden window ſhutters. The palazzo, or town-houſe, contains a ſuite of wretched rooms for the reſidence of the podeſta, a chamber for the courts of judicature, and an apartment where the repreſentatives of the people aſſemble. In one of the rooms is an engine of torture, which, in defiance of common ſenſe as well as humanity, is ſtill uſed in theſe countries to force confeſſion. The archives are kept in an apartment, the door of which has ſeveral keys; ſo that all the magiſtrates, who are entruſted with them, muſt be preſent, whenever it is opened. The moſt important of the papers kept in theſe archives, is the charter, by which the Griſons confirm, in the moſt ample manner, the immunities granted to this country by the dukes of Milan; it was paſſed in the diet of Iluntz, under Paul, biſhop of Coire, in 1513, the year ſucceeding that in which the Griſons annexed Bormio to their dominions. Many circumſtances have concurred to deter the Griſons from infringing this charter; the two principal are, the ſituation of Bormio on the confines of the Tyrol, whence they might receive aſſiſtance from the houſe of Auſtria; and the ſpirit of freedom which diſtinguiſhes the inhabitants, who have watched with a jealous eye the ſlighteſt advances of encroachment, and never failed to remonſtrate with great unanimity and reſolution, whenever the podeſta has diſcovered the leaſt inclination to exceed the bounds of his authority. About a mile from the town are the baths of St. Martin Melina, recommended for rheumatic complaints, &c. N. lat. 46° 17'. E. long. 10° 21'.

BORN, IGNATIUS, *Baron*, in *Biography*, an eminent mineralogiſt and philologer, was born of a noble family at Carlſburg, in Tranſylvania, December 26th, 1742. Having ſtudied in the college of the Jeſuits at Vienna, he entered into this ſociety, but continued a member only one year and a half. At Prague he ſtudied the law; and, after an extenſive tour on the continent, he devoted himſelf to natural hiſtory and mining; and, in 1770, was admitted into the department of the mines and mint of that city. At this period he viſited the principal mining diſtricts of Hungary and Tranſylvania, and kept up a correſpondence with the celebrated Ferber, who afterwards publiſhed his letters. In this journey he very nearly loſt his life, and did permanent injury to his health, by deſcending into a mine at Felſo-Banya, which was full of arſenical vapours that had been raiſed by the heat employed to detach the ore. Upon his return to Prague, he publiſhed in 1771, a ſmall work of the Jeſuit Pada, on the machinery uſed in mines; and, in 1772, he printed his "Lithophylacium Bornianum," or catalogue of his collection of foſſils, which he afterwards ſold to Mr. Greville for one thouſand pounds. His reputation, as a mineralogiſt, was now generally known; and he was admitted into various learned ſocieties, among which were thoſe of Stockholm, Vienna, Padua, and London. Unconfined to one branch of ſtudy, he engaged in various plans for the advancement of literature and ſcience in Bohemia. He took a part in the work entitled "Portraits of learned men and artiſts of Bohemia and Moravia;" he engaged in the "Acta Literaria Bohemiæ et Moraviæ;" and in 1775, he laid the foundation of a private literary ſociety in Prague, which has publiſhed ſeveral volumes of Memoirs. In 1776, he was ſummoned by the empreſs Maria Thereſa to Vienna, to arrange the imperial collection of natural hiſtory; and, two years after, he publiſhed, with the aſſiſtance of the empreſs, the "Conchology" of it. But it was diſcontinued on the acceſſion of the Emperor Joſeph. Born was appointed to inſtruct the archducheſs Maria Anna in natural hiſtory; and, as a recompence for his ſervices, the office of counſellor of the mines and mint was conferred upon him in 1779, which obliged him to reſide conſtantly at Vienna. However, he felt ſeverely the conſequences of the injury he had ſuſtained at Felſo Banya; ſo that he became a martyr to the moſt excruciating colics; and in one of his attacks he ſwallowed ſuch a quantity of opium as threw him into a lethargy for twenty-four hours. The diſorder then fixed in his legs and feet, and he became lame for the reſt of his life. Nevertheleſs, his mind was vigorous and active, and he entered with zeal into every meaſure that was calculated to enlarge the boundaries of ſcience, and to enlighten and improve mankind. Reſtricted, under an arbitrary government, from free diſcuſſions on the ſubjects of religion and politics, he connected himſelf with the ſociety of free-maſons, and united with others of a ſimilar turn of mind, in carrying on a kind of maſked attack upon ſuperſtition and various kinds of error. Born was alſo a member of the new ſociety of the "Illuminati," whoſe views at firſt were directed to the improvement of mankind, and not to the deſtruction of ſociety. During the reign of popery and arbitrary power, we may reaſonably ſuppoſe, that their projects of reform were leſs hoſtile to religion and government in general, than what has been charged upon their principles, ſince they have been allied with thoſe of the French revolution. The emperor Joſeph ſeems at this time not to have been adverſe to ſuch coadjutors; and he appeared to be pleaſed with a witty and popular publication of Born, in 1783, entitled "Monachologia," which was a ſevere attack on the monks, whom he characterized in the technical language of natural hiſtory, under the regular diviſions of order, genus, and ſpecies, uſed in the Linnæan ſchool. The clergy complained, and their complaints were retorted by Born with more bitter ſatires, exceeding the bounds of prudence and candour. He defended his aſſociates, the "Illuminati," with great zeal; and when the elector of Bavaria iſſued an order to diſmiſs all of this fraternity from his ſervice, Born returned to the academy of Munich the diploma by which he had been admitted as one of its members. The emperor Joſeph gradually withdrew his ſupport from theſe reformers, whom he had at firſt encouraged; and Born's continued influence was principally owing to his ſkill in mineralogy and metallurgy, by which he was capable of rendering ſervice to the ſtate. In the proceſs of extracting the noble metals from their ores, by amalgamation with quickſilver, he manifeſted his ſuperior ſkill; and to this purpoſe, a deciſive experiment was performed at Chemnitz, by the emperor's order, in the preſence of Charpentier from Saxony, Ferber from Ruſſia, Elhujar from Spain, Poda, and other celebrated chemiſts, which met with univerſal approbation, and eſtabliſhed the utility of his diſcovery. In 1786, Born publiſhed, at the deſire of the emperor, his treatiſe on amalgamation; and in the following year, a farther account of it was publiſhed by his friend Ferber. As a conſiderable ſaving in wood, time, and labour, attended his proceſs, the emperor gave orders that it ſhould be employed in the Hungarian mines; and as a recompence to the inventor, a third of the ſum that ſhould be ſaved by adopting his method was granted to him for ten years, and for ten years more the intereſt of that ſum. Such, however, was the hoſpitality of Born, and his readineſs to admit and entertain all travellers, and to patronize diſtreſſed talents of every kind, that his expences exceeded his income, and he was at laſt reduced to a ſtate of inſolvency. Amidſt all his bodily infirmities and pecuniary embarraſſments, and notwithſtanding the variety of his official avocations, he was indefatigable in his literary purſuits; and in 1790, he publiſhed in two volumes, a "Catalogue methodique raiſonné," of Miſs Raab's collection of foſſils, which is regarded as a claſſical work on that ſubject. He employed himſelf alſo in bleaching wax by a new chemical proceſs, and in boiling ſalt with half the wood commonly uſed for that purpoſe. Whilſt he was engaged in writing the "Faſti Leopoldini," or a hiſtory of the reign of Leopold II. in claſſical Latin, and a work on mineralogy, his diſeaſe rapidly advanced, and being attended with violent ſpaſms, terminated his life on the 28th of Auguſt, 1791. Townſon's Travels in Hungary, 4to. 1796.

Born, in *Geography*, a town of France, in the department of the Lot and Garonne, and chief place of a canton, in the diſtrict of Villeneuve d'Agen; $1\frac{1}{2}$ league N.N.W. of Montflaquin.

BORNA, a town of Germany, in the circle of Upper Saxony, and territory of Leipſic, ſeated on an iſland formed by the rivers Wichra and Pleiſs. The inhabitants are chiefly employed in manufacturing ſtuffs; 12 miles S.E. of Leipſic.

BORNE, a river of England, which runs into the Tame, about a mile S.W. of Tamworth.—Alſo, a river of Savoy, which runs into the Aroe, about two miles north from Bonneville.

BORNEO, an iſland of the Eaſt Indies, which, before the diſcovery of New Holland, was conſidered as the largeſt iſland in the world. This iſland ſeems to have been the Greater Java of Marco Paolo, which, he ſays, is about 3000 miles in circuit, being above 900 miles in length by 600 at its greateſt breadth. The lateſt and beſt account that has yet been given of this iſland is publiſhed in the Tranſactions of the Batavian Society. The iſland of Borneo extends from the 4th degree of S. lat. to the 8th of N. lat. and from 109° to 119° E. long. It is about 780 miles in length, and 720 in breadth. Its climate is almoſt the ſame as that of Java; but Borneo is leſs mountainous, and the land, for 12 or 15 miles, and ſometimes more, from the coaſt, is almoſt every where marſhy, and covered with foreſts of trees of large ſize, and of various kinds. The remaining part of the iſland is ſufficiently fertile, and would be productive, if the inhabitants were not too indolent to cultivate the ſoil, and fonder of ſearching for gold and diamonds, which they barter with the Javaneſe for various neceſſaries of life. The middle of the iſland is occupied by an extenſive ridge of mountains, called the "Cryſtal mountains," becauſe a great quantity of cryſtal is found in them. At the foot of theſe mountains is a large inland lake, which is the ſource of all the rivers that traverſe the whole iſland. The real natives of this iſland are the Biadjoos, or Biajoos, or Dajakkeſe, who live in the interior parts of the country. The ſea-coaſt is inhabited by Malays, Moors, Macaſſers from Celebes, and Javaneſe. We have accounts, on which we may depend, only of the countries ſituated along the coaſt; the interior parts of the iſland being little known. The largeſt kingdom in the iſland, and the moſt important on account of its connection with the Dutch Eaſt India company, is that of Banjer-maſſing on the ſouthern coaſt. The great river Pontiana, which is navigable for ſhips that draw from 12 to 13 feet of water, is very convenient for trade. The ſultan Suſuhunan Natahalam, ſince the year 1771, has transferred his reſidence from Cagu-Tangie to Martapura, where he cauſed a large city to be built, and a canal to be dug, which paſſes through the middle of it, and at the ſame time he changed the name Martapura into Bumic-Kintjana. The inhabitants of the city, as well as thoſe who reſide in places at a diſtance from the coaſt, are Mahometans, mixed with a great many Biadjoos, or Dajakkeſe, who are Pagans. Theſe Biadjoos, who inhabit villages, amounting in number to 784, are ſubject to various petty princes, who acknowledge the ſultan as their ſuperior. The factory of the Dutch Eaſt India company is ſituated at the end of the village of Tatas, or Banjer maſſing. Their fort is of an octagonal form, ſurrounded by palliſades, which on the eaſt ſide next the river is furniſhed with three, and on the weſt, or land ſide, with two baſtions. The productions of the country, which are ſought for as articles of commerce, are pepper, gold (chiefly gold duſt, not very abundant in metal), diamonds, canes, birds-neſts, wax, pedra del porco, dragon's blood, and iron. For theſe the Dutch give in exchange agates of a longiſh form, rings of red agate, different kinds of coral, all ſorts of Chineſe articles, ſuch as coarſe porcelain, red and other kinds of ſilk, all ſorts of cotton cloth, ſuch as is worn by the Indians, various productions of Java, and alſo opium, which, being prohibited by the ſultan, is privately introduced. See Banjer-massing.

Succatana lies in 0° 50′ S. lat.; and a little north of it is the river Pontiana, which diſcharges itſelf into the ſea under the line, through a great many mouths. At its mouth it is 12 feet in depth, and at high water 16, ſo that ſloops and ſmall veſſels can proceed with great eaſe in about 12 hours to the company's factory. The river, at the diſtance of about ſeven or eight miles from its mouth, ſeparates into two branches; the ſouthernmoſt of which flows through the country governed by Pangerang (a term of dignity) Joſep, who, in 1778, was advanced by the company, to be ſultan of Saſango and Pontiana, under the name of Sarief Abdulla Rachmann. Theſe two kingdoms extend far into the country; and produce excellent gold, wax, birds-neſts, pearls, ſago, diamonds, tin, and iron, which are bartered for proviſions of all kinds and cotton cloth, but particularly rice and ſalt. Heavy rains prevail here from November till May; and the thermometer is never lower than 82°, nor higher than 94°.

Landac lies on the northern arm of the river Pontiana, in N. lat. 0° 35′. The Dutch had a reſident here 150 years ago. After that period their poſſeſſions were deſtroyed, till the king of Bantam, to whom Landac and Succatana had for many years belonged, made a grant, either voluntary or by compulſion, to the company of all theſe lands in 1778. From this time the Dutch have conſidered theſe lands as their property, and the princes who govern them as their vaſſals; they then built a fort at Pontiana, between Landac and Succatana, and appointed Pangerang Saidja Nata, as regent of the whole diſtrict. The reſidence of the prince of Landac is ſituated on the projecting point of a mountain, to which there is an aſcent by 118 ſteps. Two rivers, which are ſo full of rocks that no veſſels can be navigated in them, flow on the right and left of this mountain; and the place is naturally impregnable. It is alſo well furniſhed with artillery. In this kingdom there are gold and diamond mines of conſiderable importance.

Between Landac and Borneo, the moſt northern kingdom of the iſland, and from which, probably, the whole country took its name, there are ſeveral ſmaller kingdoms, not yet ſufficiently known. Their regents are, in part, vaſſals of the ſultan of Borneo. A ſmall trade is carried on in theſe diſtricts with gold, diamonds, canes, wax, and other articles of the like kind, which are given in exchange for the productions of Java; but the traffic is unimportant and precarious, as the princes of this part of the country live by piracy.

Borneo is governed by a ſultan, who reſides in this place, where a conſiderable trade is carried on with the productions of the country, which are pearls, birds-neſts, wax, ſlaves, rice, and camphor. The camphor of this iſland is preferred even to that of Sumatra. The camphor of Borneo and Sumatra is produced by a tree with oval, ſharp-pointed leaves, and large tulip-like flowers. It is thus diſtinguiſhed both from the camphor-tree of Japan, and from the other ſpecies of the laurel. An hundred weight of the camphor of Borneo coſts 3000, and one of that of Sumatra 2000 rix-dollars, but the Japaneſe coſts ſcarcely 50. Of the camphor of Borneo about 4375 pounds are annually exported. The articles imported are tin, cotton-cloth, and all the productions of Java, except rice, which is cultivated here in great abundance.

The ſultan of Borneo lives in great ſtate, and is more feared by his ſubjects than that of Banjer; but he is ſaid, by thoſe who frequent this part of the coaſt in ſmall veſſels to exchange cotton-cloth for pepper, to be more conſtant in his friendſhip, and more faithful in fulfilling his engagements.

Between Borneo and Tidor lie the two ſmall kingdoms of Balangan and Baraoon, where birds-neſts, wax, &c. are exchanged for Japaneſe productions, and a ſort of coarſe cotton-cloth. Next to theſe is Dannuar, and a little farther are Sammunta, and Cottee. Between the two laſt are many villages, the names of which are not known. The ſame articles are exported and imported here as at Borneo. The next place is Appar Karrang, and the laſt kingdom is Paſſier. The articles of trade in this country are gold, birds-neſts, wax, and canes, which are exchanged for the productions of Java. The inhabitants of Paſſier are few in number, and therefore they have been unable to expel the Bugineſe, who have made themſelves maſters of the river, and alſo of the trade. Further ſouth lies Simpanahan; and the whole country from this place to the extreme boundaries of Salatang belongs to the king of Banjer-maſſing, who poſſeſſes alſo the great and ſmall iſland Pulu-Lauts. There appear to be no other kingdoms in the interior part of Borneo; or, at leaſt, they are not known. The inhabitants of the mountains bring the productions of their lands, and their different articles of manufacture, to the neareſt part of the coaſt for ſale.

The moſt productive diamond mines of Borneo are at Ambauwang, beyond Molucco, in the diſtrict of Banjer-maſſing, and at Landac and Pontiana. Beſides theſe mines, which lie among the mountains, diamonds are alſo ſearched for on the banks of various rivers; but they are ſo ſcarce that ten or twelve perſons may dig and ſearch ſometimes for a whole month before they find diamonds to the value of 20 Spaniſh rials. With regard to the gold mines, the ignorance of the natives as to every thing relative to mining is ſuch, that little advantage is derived from them, though they are ſuppoſed to be very rich. In Banjer-maſſing the gold is found at the depth of about three fathoms; the veins properly ſo called are of a reddiſh kind of marl. At Landac the ore is found at the depth of about ten feet, under a cruſt reſembling rotten wood. Of the animals of Borneo the moſt remarkable is the orang outang.

The Biadjoos or Dajakkeſe, who are the native inhabitants of this iſland, and principally occupy an extenſive diſtrict in the interior part of the country on the weſt ſide of the river Banjer, are of large ſtature, and well formed, and their women, whom they never bring to the places of trade, are ſaid to be fair and handſome. In their dreſs they reſemble the Malays. The women, and even the wives of their princes, are naked to the middle, and generally wear round the body only a ſhort gown. The men paint their bodies with various kinds of figures. They come to Banjer to ſell their gold, canes, and rice, for which they receive in exchange coarſe Chineſe porcelain, copper, and earthen veſſels or tampayangs, on which are repreſented dragons, ſnakes, and other figures ſuited to their taſte. Before any one of the Biadjoos can ſucceed in obtaining a female for his wife, he muſt give proof of his courage by cutting off the head of an enemy; and when he is accepted by the parents, he carries to his bride a preſent, which conſiſts of a male or female ſlave, two dreſſes, and a water-pot, on which ſome of their favourite figures are exhibited. On the wedding day, the bride and bridegroom give each a feaſt at their reſpective houſes; at the concluſion of which, the bridegroom, in his beſt apparel, is conducted to the reſidence of the bride, at whoſe door is one of her relations, who ſmears him with the blood of a cock, which has been killed for that purpoſe; and the bride is ſmeared in like manner with the blood of a hen. They then preſent to each other their bloody hands, and the ſolemnity is cloſed with a ſecond entertainment. If the wife die, the huſband cannot contract a ſecond marriage until he has cut off the head of ſome individual of another nation, and thus avenged the death of his wife. When a married woman commits adultery, the huſband, without avenging himſelf on the adulterer, puts to death two or three of his ſlaves, and thus frees himſelf from all ſhame; the woman is puniſhed merely with words, but ſometimes with blows. The Biadjoos are unacquainted with polygamy. If a man wiſhes to ſeparate from his wife in conſequence of her having committed ſome crime, he retains her clothes and ornaments, and makes her pay a fine amounting to about 30 rials; and each party is then at liberty to marry. When a Biadjoo dies, the body is put into a coffin, and kept in the houſe, until all the remaining males in the family have purchaſed a ſlave; who is beheaded on the day when the body is burnt, that he may attend the deceaſed in the other world; and before he is put to death, he is enjoined fidelity to his maſter. The aſhes of the deceaſed, together with the head of the ſlave, are put into a watering-pot, and depoſited in a ſmall edifice or tomb conſtructed for that purpoſe. Sometimes a whole year elapſes before a ſlave can be procured. The houſes of the Biadjoos are conſtructed of boards joined together without windows or partitions, except that which ſeparates a ſmall corner in which they ſleep. The whole family reſide together with their ſlaves, and conſiſt ſometimes of 100 perſons. Their only light is that of a piece of pine-wood, which burns no longer than till about eight in the evening. Over their doors they ſuſpend the bloody heads which they cut off in their ſkirmiſhes. In order to procure theſe they proceed, with great ſecrecy, to the river Banjer, and ſurpriſe in the night, or attack, in open day, ſome ſmall veſſel belonging to Banjer fiſhermen; and one or two of their unfortunate captives are then deſtined to become a ſacrifice to their inſatiable rage for murder. When they return with a head, the men, women, and children of a whole village teſtify their ſatisfaction by every demonſtration of joy. Gongs, or muſical inſtruments of copper, are beat by thoſe who conduct the conqueror to his own houſe, where the women dance around him, and taking from him the head, they force into the mouth ſome food and drink; after which ceremony, accompanied with a repaſt and dance, they hang it up as a trophy of victory. Before the Biadjoos undertake expeditions in queſt of Banjereſe heads, they endeavour to deduce ſome omen of good or bad fortune from the flight of a kind of hawk (falco milvus). They have ſcarcely any form of government, and no written laws. If a perſon be accuſed of theft, and no ſufficient proof can be alleged againſt him, the culprit and the accuſer are carried before one of the oldeſt inhabitants. An earthen pot with aſhes and water is placed on the ground; and acroſs the pot is laid a piece of wood, on which are depoſited two ſmall copper buttons. An oath having been adminiſtered to each party, the piece of wood is ſo turned round that the buttons fall into the water; the accuſed and the accuſer take up one of theſe buttons; and he, whoſe button appears as if ſcowered and whitened by the aſhes, is deemed to have ſucceeded. The Biadjoos are ſaid to have ſome idea of a ſupreme being, to whom they addreſs prayers under the name of Dewatta; and as they believe that this Dewatta not only created, but ſtill preſerves and rules the world, they requeſt him to grant them happineſs and proſperity. If we may judge from the character of theſe people, their deity muſt be a gloomy and revengeful being; no nation on earth having a greater propenſity to murder and revenge. The Biadjoos acknowledge the ſultan of Banjer as their ſovereign, and pay him yearly a ſmall tribute in gold duſt of the value of 20 rials.

The Portugueſe, Dutch, and Engliſh have ever ſince the 16th century endeavoured to eſtabliſh themſelves in this iſland; but the Dutch have been the moſt ſucceſsful. The Portugueſe, it is ſaid, wiſhed to form a ſettlement here in 1526, and with this view preſented to the ſultan of Landac and Succatana ſome beautiful pieces of tapeſtry, on which curious figures were wrought; but the ſultan, conceiving theſe figures to be animated or magic, and apprehending that they might ruſh ſuddenly from the tapeſtry and ſtrangle him, rejected the preſent and expelled the Portugueſe from the country. The Engliſh were not much more fortunate, having quitted Borneo entirely ever ſince the year 1706. In 1766, they made an attempt to form a ſettlement in the iſland of Balambangan, at the N. extremity of Borneo, which was given up to them by the king of Solon. They placed in it a few Europeans for the ſake of trade, and a garriſon of 300 ſoldiers, Europeans and blacks; and intended to eſtabliſh a factory, where they might exchange the productions of Europe and Hindooſtan for thoſe brought hither from China and the Indian iſlands; but in the year 1772, after a part of their troops had been ſwept off by contagious diſeaſes, the fort they had conſtructed, being badly fortified, was ſuddenly attacked, and the whole eſtabliſhment deſtroyed. The Engliſh have ſtill ſome eſtabliſhments on the north coaſt of Borneo; and the circumjacent Indian nations, and the Chineſe carry on a great trade with this iſland. About Borneo are ſeveral ſmall iſlands, that may be denominated the "Bornean iſlands," ſuch as the Soloos, Tawea, Pulo Laut, Anamba, Natuna, &c.

BORNEO, a ſea-port and capital of the iſland of this name, is large, populous, and commercial, with a good harbour; it conſiſts of about 300 houſes, built on piles, and is ſituated on the N. W. ſide of the iſland. N. lat. 4° 50'. E. long. 115° 0'.

BORNEVALT, a town of Germany, in the circle of Weſtphalia, and duchy of Berg; 3 miles W. of Lennep.

BORNEUS, in *Ornithology*, the *long-tailed ſcarlet lory.* This beautiful bird is of a red colour; quills and tail feathers at the tips green; a blue ſpot on the wings; orbits fuſcous. Inhabits India.

The length of this bird is nine inches and a half. Its bill is orange; orbits of the eyes bare of feathers: quill feathers with blue and green dots; the two exterior feathers inclining to green; lower tail coverts red, bordered with blue. Gmel.—*Lori perruche rouge*, No. 1. Buff. *Pſittaca coccinea bonarum fortunarum inſulæ.* Briſſ.

BORNHEIM, a village of Germany, in the circle of the Upper Rhine, and territory of Franckfort on the Mayne; 6 Engliſh miles N. of Franckfort. This village is ſaid to be notorious all over Germany for its numerous brothels. Render's Tour.

BORNHOLM, an iſland of Denmark, in the Baltic ſea, the remoteſt and moſt eaſterly of all the Daniſh iſlands, about 18 miles in length, and 10 in breadth. Although it is nearly ſurrounded by rocks, and the ſoil is ſtoney, it is a fertile ſpot, abounding with excellent paſtures; oats, butter, and fiſh conſtitute the wealth of the inhabitants. There are ſome mines of coal and quarries of marble. It was conquered by the Swedes in 1645, and ſurrendered to them by the treaty of Roſkild, in 1658; but the inhabitants revolted in the ſame year, and reſtored their iſland to the Daniſh dominion, under which it has ſince continued. Bornholm is diſtant 75 miles from Zealand, and 15 from the coaſt of Schonen. N. lat. 55° 12'. E. long. 15° 20'.

BORNII, in *Conchology*, a ſpecies of TELLINA, figured by Born. This ſhell is tranſverſely ſtriated, bent on one ſide, and reddiſh, with red rays. This is three quarters of an inch long, and two inches broad. The native place is not known.

BORNOU, in *Geography*, an extenſive kingdom of Africa, lying ſouth-eaſt of Fezzan, and bounded on the north by the deſert of Bilma, on the weſt by Kuka, Tagua, and

Nubia, on the ſouth by Kauga and Begarmee, and on the weſt by Zegzeg, Zanfara, and Kaſſina. The name Bornou, which is given to this kingdom by the natives, is diſtinguiſhed in Arabia by the appellation of Bornou, or Bernoa, ſignifying the land of Noah; for the Arabs conceive, that, on the firſt retiring of the deluge, its mountains received the ark. This is a country of great extent, being comprehended between the 16th and about the 22d degrees of N. latitude. The climate is characterized by exceſſive, but not uniform, heat. Two ſeaſons divide the year; one commencing about the middle of April, and introduced by violent winds from the S.E. and S., intenſe heat, a deluge of rain, and ſuch tempeſts of thunder and lightning as deſtroy many cattle and people; at this time the inhabitants confine themſelves to their houſes; the reſt of the ſeaſon, though ſultry and rainy, does not hinder the labours of the huſbandman and ſhepherd. The other ſeaſon commences towards the latter end of October, when the heat becomes leſs intenſe, the air more ſoft and mild, and the weather ſerene. The inhabitants are numerous, and conſiſt of various nations; and it is reported that thirty different languages are ſpoken in this empire. The language of the common people of Bornou, though different from, ſtrongly reſembles that of the neighbouring negroes, and is very unlike the Arabic, in which, however, the nobles and principal families converſe. The art of writing is known among them; and they are taught to expreſs the Bornou tongue in the characters of the Arabic. They are entirely black, but not of the negro caſt. Their general dreſs is compoſed of ſhirts of blue cotton, manufactured in the country; a red cap, imported from Tripoli; and a white muſlin turban, brought from Cairo by the pilgrims, who return through that city from Mecca. Noſe-rings of gold are alſo worn by the principal people, as a mark of diſtinction. Wheat and barley are ſeldom raiſed in Bornou; but the horſe-bean of Europe, and the common kidney-bean are aſſiduouſly cultivated, as they are uſed for food, both by the ſlaves and by the cattle. They alſo cultivate a kind of grain peculiar to the country; and the neigbourhood of the city of Bornou is fertile in Indian corn and rice. Gum-trees are thinly ſcattered; cotton, hemp, and indigo are alſo to be reckoned among the various productions of its ſoil. In the culture of the ground, the hoe is the only inſtrument in uſe, as the plough is not known; and the women ſhare with the men the labours of their huſbandry. The ſowing ſeaſon commences at the end of the periodical rains in April; and ſuch is the rapidity of vegetation, that one ſpecies of their grain is reaped in July, and another, of ſlower growth, in Auguſt or September. Two ſpecies of roots are uſed as ſubſtantial and wholeſome food; one called the "dondoo," whoſe leaves reſemble thoſe of the garden bean, is dried in the ſun, and reduced to fine powder, which is mixed with palm oil into the conſiſtency of paſte; and the other prepared for uſe merely by boiling. The fruits of Bornou are grapes, apricots, pomegranates, lemons, limes, and melons. The dates are ſcarce and indifferent, as are alſo the apples and plums; but it has a valuable vegetable, called, "Kedeynah," reſembling the olive in form and height, and the lemon in its leaf, which bears a nut, whoſe kernel is an eſteemed fruit, and ſhell, when bruiſed, yields an oil that ſupplies the lamps with a ſubſtitute for the oil of olives. To the claſs of animals we may refer innumerable flocks of ſheep, and herds of goats and cows, (for there are no oxen,) together with multitudes of horſes, buffaloes, and camels, the fleſh of which is in high eſtimation, which cover the vales or paſture on the mountains of Bornou. The common fowl is reared by the inhabitants; and their hives of bees are ſo numerous, that the wax is often thrown away as an article of no value in the market. Their game conſiſts of antelopes, partridges, wild ducks, and the oſtrich, the fleſh of which they prize above every other. Their other wild animals are the lion, the leopard, the civet-cat, the ſmall wolf, the fox, the wild dog that hunts the antelope, the elephant, of which, however, they make no uſe, the crocodile, the hippopotamus, and giraffe. Bornou is much infeſted with different kinds of dangerous and diſguſting reptiles, eſpecially ſnakes and ſcorpions, centipedes and toads. Its beaſts of burthen are numerous and various; of which we may reckon the camel, the horſe, the aſs, and the mule. The dog appears to be the only domeſtic animal. In Bornou the ſame plan of conſtructing their houſes univerſally prevails. Four walls, incloſing a ſquare, are erected; within the walls, and parallel to them, four other walls are alſo built; the ground between the walls is then divided into different apartments, and covered with a roof. Thus the ſpace within the interior walls determines the ſize of the court; the ſpace between the walls, limits the width of the apartments; and the height of the walls regulates the height of the rooms. In a large houſe the rooms are each about twenty feet long, eleven feet high, and as many in width. On the outſide of the houſe, a ſecond ſquare or large yard, ſurrounded by a wall, is uſually provided for the incloſure and protection of the cattle. The walls are generally compoſed of earth and ſand, but others are formed of ſtones or bricks and clay; and the roofs conſiſt of branches of the palm-tree, intermixed with bruſh-wood, covered with layers of earth; and the whole building is white-waſhed with a ſpecies of chalk. The utenſils of a houſe, among the lower claſſes, are mats covered with a ſheep-ſkin, upon which they ſleep; an earthen pot and pan; two or three wooden diſhes, a couple of wooden bowls, an old carpet, a lamp for oil, and a copper kettle. Perſons of a ſuperior rank alſo poſſeſs leathern cuſhions, ſtuffed with wool, braſs and copper utenſils, a handſome carpet, and a ſort of candleſtick, which is uſed for their candles that are made of their bees' wax and the tallow of their ſheep. The current ſpecie of the empire conſiſts of pieces of metal from an ounce to a pound in weight, formed of copper and braſs, melted together and mixed with other materials. The ruling people in Bornou profeſs the Mahometan religion, ſo that the ſultan and his ſubjects are muſſulmen, and the other claſſes are pagans. The government is an elective monarchy; and the new ſovereign, when choſen from among the ſons of his predeceſſor, is inveſted with all the ſlaves, and with two-thirds of all the cattle and land, of his father; the remaining third being always detained as a proviſion for the other children of the deceaſed monarch. To the four lawful wives of the late ſovereign, a ſeparate houſe with a ſuitable eſtabliſhment, is granted by the reigning monarch; and ſuch of his concubines, as were not ſlaves, are at liberty to return to their friends, with their cloaths and ornaments, and with the permiſſion to marry. The adminiſtration of the provinces of Bornou is committed to governors, appointed by the crown; and the expences of the ſovereign are defrayed partly by his hereditary lands, and partly by taxes levied on the people. The ſultan Alli, who was the ſovereign of Bornou, in 1789, though plain in his dreſs, maintained a magnificent ſeraglio, accommodating 500 ladies, and was reputed to be the father of 350 children; and the number of horſes kept for his own uſe and that of his ſervants, amounted to 500. The military force of Bornou conſiſts in a great multitude of horſemen, which renders him a much more powerful monarch than the emperor of Morocco; but his foot-ſoldiers are few in number, and of little importance. Their weapons of offence are the ſabre, the lance, the pike, and the bow; and a ſhield of hides forms their defenſive armour. Fire-arms, though not entirely unknown, are neither uſed nor poſſeſſed by the people of Bornou. As to their habits and manners, the people are ſingularly courteous and humane. On the road they ſtop to ſalute every one they meet; their quarrels, when they occur, are mere conteſts of words: and though their women ſhare with them in the buſineſs of huſbandry, their work, which is dropping the ſeed in the furrows, and removing the weeds with a hoe, is more an amuſement than labour. Their attachment to play is immoderate; and on the game of drafts, which is the only game with which the lower claſſes are acquainted, they ſtake their gold duſt, their braſs money, and even their cloaths. Perſons of a ſuperior rank are equally devoted to cheſs, in which they are eminently ſkilful. The articles of export furniſhed by the empire of Bornou are gold-duſt, ſlaves, procured from Begarmee, horſes, oſtrich feathers, ſalt, collected on the ſhores of the ſeveral lakes that produce it, and civet, obtained from a ſpecies of wild cat that is common in the woods of Bornou and Kaſſina. As to their manufactures, they make a coarſe linen of the hemp of their country. Their cotton is ſpun to a very fine thread, and then manufactured into callicoes and muſlins about nine inches broad, and in length from fifteen to twenty yards. Such of theſe cotton manufactures as are enriched with the blue dye of the country, which, from the ſuperiority of the indigo, is preferable to that of the Eaſt Indies, are valued more highly than ſilk. They alſo fabricate a ſpecies of carpet, as a covering for their horſes; and tents, of wool and the hair of goats and camels, are made for the uſe of the army. From the iron ore of their country they form, with little ſkill, ſuch ſlight tools as their huſbandry requires; and the little ſilver they have is converted by their own artiſts into rings. In return for their exports, they receive from Tripoli, by way of Fezzan, copper and braſs, which are uſed as current ſpecies; and alſo imperial dollars, of which they make rings and bracelets for their women; red woollen caps worn under the turban, check linens, light coarſe woollen cloths, baize, baracans, ſmall Turkey carpets, and plain Meſurata carpets. Mr. Lucas's Communications in the Proceedings of the African Aſſociation.

Bornou, the capital of the country above deſcribed, is ſituated at the diſtance of a day's journey from a river which is called "Wed-el-Gazel," from the multitude of antelopes that feed on its banks, and which is loſt in the deep and ſandy waſtes of the vaſt deſerts of Bilma. It is ſeated in a flat country, on the banks of a ſmall river. Bornou, though a town of greater extent than Tripoli, conſiſts of a multitude of houſes, ſo irregularly placed, that the intervals between them cannot be called ſtreets: it is furniſhed with moſques, which are conſtructed of brick and earth, and with ſchools, in which the koran is taught, as in the principal towns of Barbary. The royal palace, in which the ſultan reſides in time of peace, is ſurrounded by high walls, and forming a kind of citadel, is built, perhaps for ſecurity, in a corner of the town. Within the city are markets for the ſale of proviſions; but for other articles a weekly market, as in Barbary, is held without the walls. This city is ſurrounded by a wall, fourteen feet high, conſtructed on a foundation from eight to ten feet deep, of conſiderable ſtrength. It is ſecured by a ditch which encompaſſes the whole; and at ſun-ſet, the ſeven gates, which form the communication with the country, are ſhut. Brown, in his travels, p. 467, ſays, that the wall has four gates, opening eaſt, weſt, north and ſouth. N. lat. 19° 35′ E. long. 22° 40′.

BORNSTET, a town and bailiwick of Germany, in the circle of Upper Saxony; 4 miles S. W. of Eiſleben.

BORNY, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Metz, 2 miles E. of Metz.

BOROCZANE, a town of Poland, in the palatinate of Red Ruſſia; 28 miles S.S.W. of Halicz.

BOROLIBICUS, the wind which blows in the middle between the north and weſt points; called alſo the north-weſt wind.

BORONOO, in *Geography*, a town of Ruſſia, in the government of Archangel; 80 miles S. of Archangel.

BOROS-Jeno, a town of Hungary; 28 miles S. of Gros-Warden.

BOROUGH, Burrough, Borow, or Burgh, is frequently uſed for a corporate town, which is not a city.

Borough, in its original Saxon *borge*, or *borgh*, is by ſome ſuppoſed to have been primarily meant of a tything or company conſiſting of ten families, who were bound or combined together as each other's pledge.

Afterwards, as Verſtegan informs us, borough came to ſignify a town that had ſomething of a wall or incloſure about it; ſo that all places which among our anceſtors had the denomination of borough, were one way or other fenced or fortified. But in later times, the ſame appellation was alſo beſtowed on ſeveral of the *villæ inſigniores*, or country towns of more than ordinary note, though not walled. According to Somner, a borough was a place of ſafety, protection, and privilege; and in the reign of king Henry II. boroughs were ſo highly privileged, that if a bondman or ſervant remained in a borough a year and a day, he was by ſuch reſidence made a free-man. Glanville. Theſe were denominated free-burghs, and the tradeſmen who inhabited them free-burgeſſes, becauſe they enjoyed a freedom to buy and ſell without moleſtation, and with exemption from toll, &c. granted by charter.

The ancient Saxons, according to Spelman, gave the name burgh to thoſe called, in other countries, cities. But divers canons being made for removing the epiſcopal ſees from villages and ſmall towns to the chief cities, the name city became attributed to epiſcopal towns, and that of borough retained to all the reſt; though theſe too had the appearance of cities, as being governed by their mayors, and having laws of their own making, and ſending repreſentatives to parliament, and being fortified with a wall and caſtle, and the like. See City.

Borough, or *burgh*, is now particularly appropriated to ſuch towns and villages, as ſend burgeſſes or repreſentatives to parliament.

Boroughs are equally ſuch, whether they be incorporate or not; there being great numbers of our Engliſh boroughs, not incorporated; and, on the contrary, ſeveral corporations that are not boroughs; e. gr. Kingſton, Deal, Kendal, &c.

Boroughs are diſtinguiſhed into thoſe by charter or ſtatute; and thoſe by preſcription or cuſtom.

The number of boroughs in England and Wales, including cities and cinque ports, which elect members, is 215; ſome whereof ſend one, ſome two repreſentatives.

It has been a ſubject of controverſy among antiquaries, at what time the repreſentatives of boroughs formed a part of the great council of the nation. Some have traced their origin as far back as the Saxon *Wittenagemot*; and have ſuppoſed that they were the *wites*, *ſapientes*, or wiſe men, who, beſides the prelates and aldermen, are mentioned as a component part of this aſſembly. Others, however, have maintained, that theſe wites were the judges, or men learned in the law. Others who exclude the burgeſſes, or commons, from the Saxon wittenagemot, allege, that the expreſſions, employed by all ancient hiſtorians, in mentioning this national council, ſeem to contradict the former ſuppoſition. The members, it is ſaid, are almoſt always called the *principes, ſatrapæ, optimates, magnates, proceres*; terms which ſeem to ſuppoſe an ariſtocracy, and to exclude the commons. The boroughs alſo, from the low ſtate of commerce, were ſo ſmall and ſo poor, and the inhabitants lived in ſuch dependence on the great men, that it does not ſeem probable they would be admitted as a part of the national councils. It appears from Domeſday that the greateſt boroughs were, at the time of the conqueſt, ſcarcely more than country villages; and that the inhabitants were of a ſtation little better than ſervile. If it be unreaſonable to think that the vaſſals of a barony, though their tenure was military, and noble, and honourable, were ever ſummoned to give their opinion in national councils, much leſs can it be ſuppoſed, that the tradeſmen or inhabitants of boroughs, whoſe condition was ſo much inferior, would be admitted to that privilege. Theſe boroughs were not then ſo much as incorporated; they formed no community; they were not regarded as a body politic; and being merely formed of a number of low dependent tradeſmen, living without any particular civil tie, in neighbourhood together, they were incapable of being repreſented in the ſtates of the kingdom. The commons are well known to have had no ſhare in the governments eſtabliſhed by the Franks, Burgundians, and other northern nations; and as the Saxons remained longer barbarous and uncivilized than theſe tribes, they could never think of conferring ſuch an honourable privilege on trade and induſtry. The military profeſſion alone was honourable among all thoſe conquerors; the warriors ſubſiſted by their poſſeſſions in land; they became conſiderable by their influence over their vaſſals, retainers, tenants, and ſlaves; and it requires ſtrong proof to convince us, that they would admit any of a rank ſo much inferior as the burghers, to ſhare with them in the legiſlative authority. The firſt corporation, even in France, which made more early advances in arts and civility than England, is ſixty years poſterior to the conqueſt under the duke of Normandy; and in Normandy, the conſtitution of which was moſt likely to be William's model in raiſing his new fabric of Engliſh government, the ſtates were entirely compoſed of the clergy and nobility; and the firſt incorporated boroughs, or communities, of that duchy, were Rouen and Falaiſe, which enjoyed their privileges by a grant of Philip Auguſtus, in the year 1207. All the ancient Engliſh hiſtorians, when they mention the great council of the nation, call it an aſſembly of the baronage, nobility, or great men; and none of their expreſſions, ſays Mr. Hume, (*ubi infra,*) though ſeveral hundred paſſages might be produced, can, without the utmoſt violence, be tortured to a meaning, which will admit the commons to be conſtituent members of that body. When hiſtorians mention the people, *populus*, as a part of the parliament, they always mean the laity, in oppoſition to the clergy: and though the word *communitas* ſometimes occurs, Dr. Brady maintains, that it always means *communitas baronagii*. If, therefore, in the long period of 200 years, which elapſed between the conqueſt and the latter end of Henry III., and which abounded in factions, revolutions, and convulſions of all kinds, the houſe of commons never performed one ſingle legiſlative act, ſo conſiderable as to be once mentioned by any of the numerous hiſtorians of that age, they muſt have been totally inſignificant; and in that caſe, what reaſon can be aſſigned for their ever being aſſembled? can it be ſuppoſed, that men of ſo little weight or importance poſſeſſed a negative voice againſt the king and the barons? Every page of the ſubſequent hiſtories diſcovers their exiſtence; though theſe hiſtories are not written with greater accuracy than the preceding ones, and indeed ſcarcely equal them in that particular. The magna charta of king John provides, that no ſcutage or aid ſhould be impoſed, either on the land or towns, but by conſent of the great council; and for more ſecurity, it enumerates the perſons entitled to a ſeat in that aſſembly, the prelates and immediate tenants of the crown, without any mention of the commons: "An authority (ſays Mr. Hume) ſo full, certain, and explicit, that nothing but the zeal of party could ever have procured credit to any contrary hypotheſis." The ſame writer adds, that it was probably the example of the French barons, which firſt emboldened the Engliſh to require greater independence from their ſovereign; and it is alſo probable, that the boroughs and corporations of England were eſtabliſhed in imitation of thoſe of France.

In ancient times, men were not very ſolicitous to obtain a place in the legiſlative aſſemblies; and rather regarded their attendance as a burden, which was not compenſated by any return of profit or honour, proportionate to the trouble and expence. The only reaſon for inſtituting theſe public councils was, on the part of the ſubject, that they deſired ſome ſecurity from the attempts of arbitrary power; and on the part of the ſovereign, that he deſpaired of governing men of ſuch independent ſpirits without their own conſent and concurrence. But the commons, or the inhabitants of boroughs, had not yet reached ſuch a degree of conſideration as to deſire *ſecurity* againſt their prince; or to imagine, that even if they were aſſembled in a repreſentative body, they had power or rank ſufficient to enforce it. For protection againſt the violence and injuſtice of their fellow citizens, to which alone they aſpired, they directed their views to the courts of juſtice, or to ſome great lord, to whom, either by law or by choice, they were attached. On the other hand, the ſovereign was ſufficiently aſſured of obedience in the whole community, if he procured the concurrence of the nobles. The military ſub-vaſſals could entertain no idea of oppoſing both their prince and their ſuperiors; and much leſs could the burgeſſes and tradeſmen aſpire to ſuch a thought. Thus, if hiſtory were ſilent on the head, there is reaſon to conclude, from the known ſituation of ſociety during theſe ages, that the commons were never admitted as members of the legiſlative body.

The firſt time in which, according to the opinion of thoſe who admit the concluſiveneſs of the above reaſoning, hiſtorians ſpeak of any repreſentatives ſent to parliament by the boroughs, was the year 1265, during the reign of Henry III.; when the earl of Leiceſter uſurped the royal power, and ſummoned a new parliament to London, where he knew his power was uncontrolable. Beſides the barons of his own party, and ſeveral eccleſiaſtics, who were not immediate tenants of the crown, he ordered returns to be made of two knights from each ſhire, and alſo of deputies from the boroughs; an order of men, it is ſaid, which, in former ages, had always been regarded as too mean to enjoy a place in the national councils. Accordingly, this period is commonly eſteemed the epoch of the houſe of commons in England. But though that houſe derived its exiſtence from ſo precarious, and even ſo invidious an origin, as Leiceſter's uſurpation, it ſoon proved, when ſummoned by the legal princes, one of the moſt uſeful, and, in proceſs of time, one of the moſt powerful members of the national conſtitution; and gradually reſcued the kingdom from ariſtocratical as well as from regal tyranny. But Leiceſter's policy, if we aſcribe to him ſo great a bleſſing, only forwarded by ſome years an inſtitution, for which the general ſtate of things had already prepared the nation. It was not, however, till the 23d year of the reign of Edward I. (A.D. 1295), that the deputies of towns and boroughs were, by a regal ſummons, admitted into parliament. This is therefore regarded as the legal and true epoch of the houſe of commons, and the faint dawn of popular government in England. Leiceſter's uſurpation produced only a temporary effect, and the ſummons of repreſentatives from boroughs was diſcontinued in ſubſequent parliaments; but from this period burgeſſes became a permanent part of the Britiſh legiſlature. The neceſſities of Edward, occaſioned by his continual wars, and by the diminution of his demeſnes, induced him to recur to this meaſure for obtaining requiſite ſupplies; and he became ſenſible, that inſtead of impoſing taxes by his prerogative, and enforcing his edicts for this purpoſe, a more expeditious and effectual mode was to aſſemble the deputies of all the boroughs, to lay before them the neceſſities of the ſtate, to diſcuſs the matter in their preſence, and to require their conſent to the demands of their ſovereign. With this view he iſſued writs to the ſheriffs, enjoining them to ſend to parliament, along with two knights of the ſhire, two deputies from each borough within their county, and theſe provided with ſufficient powers from their community, to conſent in their name, to what he and his council ſhould require of them. Accordingly, writs were iſſued to about 120 cities and boroughs. "As it is a moſt equitable rule," ſays he in his preamble to this writ, "that what concerns all ſhould be approved by all, and common dangers be repelled by united efforts;" a noble principle, which may ſeem to indicate, ſays Mr. Hume, a liberal mind in the king, and which laid the foundation of a free and an equitable government. The writs of the parliament immediately preceding remain; and the return of knights is there required, but not a word of the boroughs; a demonſtration, according to Brady (of Boroughs), that this was the very year in which they commenced.

After the election of theſe deputies by the aldermen and common-council, they gave ſureties for their attendance before the king and parliament; their charges were reſpectively borne by the borough which ſent them; and they had ſo little idea of appearing as legiſlators,—a character ſo remote from their low rank and condition,—that no intelligence could be more diſagreeable to any borough, than to find that they muſt elect, or to any individual, than that he was elected to a truſt, from which no profit or honour could poſſibly be derived. Properly ſpeaking, they did not compoſe any eſſential part of the parliament; they ſat apart both from the barons and knights, who diſdained to mix with ſuch mean perſonages; and after they had given their conſent to the taxes required of them, their buſineſs being then finiſhed, they ſeparated, even though the parliament ſtill continued to ſit and to canvaſs the national buſineſs. As they were all real burgeſſes of the places from which they were ſent, the ſheriff, when he found no perſon of abilities or wealth ſufficient for the office, often took the liberty of omitting particular boroughs in his returns; and as he received the thanks of the people for this indulgence, he gave no diſpleaſure to the court, which levied on all the boroughs without diſtinction the tax agreed to by the majority of the deputies. It was not till the reign of Richard II. that the ſheriffs were deprived of the power of omitting boroughs at pleaſure. 5 Ric. II. cap. 4.

The union of the repreſentatives from the boroughs gradually gave more weight to their whole order; and it became cuſtomary for them, in return for the ſupplies which they granted, to prefer petitions to the crown for the redreſs of any particular grievance, of which they found reaſon to complain. Theſe petitions received the ſanction of royal authority, and acquired validity, even without the conſent of the nobles. Afterwards, however, the houſe of peers, the moſt powerful order in the ſtate, reaſonably expected, that their aſſent ſhould be expreſsly granted to all public ordinances; and in the reign of Henry V., the commons required that no laws ſhould be framed merely upon their petitions, unleſs the ſtatutes were worded by themſelves, and had paſſed their houſe in the form of a bill. At this time, the commons were much below the rank of legiſlators; and throughout the reign of Edward I. their aſſent is not once expreſſed in any of the enacting clauſes; nor in the reigns enſuing, till the 9th of Edward III. nor in any of the enacting clauſes of 16 Ric. II. Nay even ſo low as Henry VI. from the beginning till the 8th of his reign, the aſſent of the commons is not once expreſſed in any enacting clauſe. Pref. to Ruffhead's edition of the ſtatutes, p. 7. The commons were ſo little accuſtomed to tranſact public buſineſs, that they had no ſpeaker till after the parliament 6th Edw. III.; and in the opinion of moſt antiquaries, not till the 1ſt of Richard II. The houſe of repreſentatives from the counties was gradually ſeparated from that of the peers, and formed a diſtinct order in the ſtate. Nevertheleſs the knights of ſhires did not form the ſame houſe with the burgeſſes. But by degrees the growth of commerce augmented the private wealth and conſideration of the burgeſſes; the frequent demands of the crown increaſed their public importance; and as they repreſented particular bodies of men, reſembling in this reſpect the knights of ſhires, they were united together in the ſame houſe. Mr. Carte, after having carefully conſulted the rolls of parliament, affirms (Hiſt. vol. ii. p. 451.), that they never appear to have been united till the 16th of Edward III. But this union does not ſeem to have been final; for, in 1372, the burgeſſes acted by themſelves, and voted a tax after the knights were diſmiſſed; and inſtances occur at later periods of their acting ſeparately. The chief baron Gilbert (Hiſt. of the Exchequer, p. 37.), is of opinion, that the reaſon why taxes always began with the commons, or burgeſſes, was, that they were limited by the inſtructions of their boroughs. In the manner above ſtated, the third eſtate, or that of the commons, reached at laſt its preſent form; and as the country gentlemen made thenceforwards no ſcruple of appearing as deputies from the boroughs, the diſtinction between the members was entirely loſt, and the lower houſe thence acquired a great acceſſion of weight and importance in the kingdom. Still, however, the office of this eſtate was very different from that which it has ſince exerciſed with ſo much advantage to the public. Inſtead of checking and controling the authority of the king, they were naturally induced to adhere to him, as the great fountain of law and juſtice, and to ſupport him againſt the power of the ariſtocracy, which was at once the ſource of oppreſſion to themſelves, and diſturbed him in the execution of the laws. The king, in his turn, gave countenance to an order of men, ſo uſeful, and ſo little dangerous; the peers were alſo obliged to pay them ſome conſideration; and thus the third eſtate, formerly ſo abject in England, as well as in all other European nations, roſe by ſlow degrees to its preſent importance; and in its progreſs, made arts and commerce, the neceſſary attendants of liberty and equality, flouriſh in the kingdom.

In addition to what has been already advanced, Mr. Hume alleges a further evidence, that the commencement of the houſe of burgeſſes, who are the true commons, was not an affair of chance, but aroſe from the neceſſities of the preſent ſituation; viz. that Edward, at the very ſame time, ſummoned deputies from the inferior clergy, the firſt that ever met in England, and required them to impoſe taxes on their conſtituents for the public ſervice.

On the other hand, it has been argued by the advocates of the higher antiquity of the commons, that if we look to the beſt accounts of the original cuſtoms of the ancient German nations, we ſhall find, that, in their communities, all the freeholders enjoyed an equal right with the nobles to aſſiſt in deliberations on affairs of great moment. See Tacitus de Moribus German. c. 25. Upon their firſt ſettlement in any foreign country, and while their number was ſmall, this right might be exerciſed, without much inconvenience, by the whole body of the freeholders aſſembling together on open plains. To this purpoſe, Matthew of Weſtminſter (Sub. Ann. 1213. Johan. 15.) intimates, that the Anglo-Saxons, after they came into Britain, exerciſed their right in this manner; for he ſays, that the meadow near Staines, in which king John granted the great charter, was called "Runemeed," denoting in the Saxon language the "meadow of counſel," becauſe from ancient times it had been uſual to conſult there upon buſineſs which concerned the peace of the kingdom. But this cuſtom had been diſuſed under, and even before, the government of the Normans; perhaps from the time in which the Saxon heptarchy was united into one kingdom. The only inſtance that occurs of its having been revived is the meeting in the reign of king John; all the parliaments, or great councils, of which we have any account before, were held in churches, abbies, or royal caſtles; and therefore, if the right of the freeholders continued, the greater part of them muſt have exerciſed it, not perſonally, as in ancient times, but by their repreſentatives. By a record cited by Dr. Brady, ſo late as the fifteenth year of king John, it appears, that not only the greater barons, but all the inferior tenants in chief of the crown, had a right to be ſummoned to parliament by particular writs; and therefore we may conclude, that till that time, no repreſentatives had been ſent by any of theſe to ſerve for them in parliament; but they attended the great councils of the nation in their own perſons: and their number was not ſo conſiderable, as not to allow of their being accommodated in the body of a church, or the great hall of an abbey or caſtle. But theſe were far from being all the freeholders of the kingdom; for this deſcription comprehended all who held of the barons, either by knight-ſervice, or free ſocage, and all the poſſeſſors of allodial eſtates, with all the free inhabitants of cities and boroughs not holding of the crown. The number of all theſe was too great to be contained in any building however ſpacious. But were theſe men either wholly excluded from parliament, or were they preſent there by any kind of repreſentation? Some learned writers have ſuppoſed, that every ſuperior lord, who held of the king immediately and in chief, gave an opinion on matters of government, which bound all his vaſſals. But if this were the caſe, the poſſeſſors of allodial eſtates, to which claſs we may refer all the parochial clergy, having no ſuperior lord to act for them in parliament, could not be thus repreſented, or virtually bound by the acts of the king's barons, to whom they were not attached by any feudal connexion, and of whom they held nothing. Beſides, the knights, citizens, and burgeſſes, who are now repreſentatives of the commons of England, are elected by thoſe for whom they ſerve; and on occaſion of every new parliament, the electors are at liberty to make a new choice: whereas, the repreſentatives, in the above hypotheſis of ſir H. Spelman, were neither elected, nor liable to be changed at any period of time, by thoſe whom they repreſented; their right to ſit in parliament not ariſing from any truſt conferred by the people, but wholly from their tenures. It is alſo certain, that the feudal ſuperiority was the ſame under the government of Henry III. as of William I., and continued ſo for ſome ages. If therefore the barons, and ſuperior lords of great fiefs, holden immediately of the crown, had, by virtue of the inſtitutions of William I., been ſuppoſed to repreſent their vaſſals in parliament, and the notion then was, that every feudatory, holding by a meſne tenure, was bound by the parliamentary acts of his lord, how came that notion to be diſcarded in the 49th year of Henry III. or under the reign of his ſon, or at any time afterwards? A baron, who held of the crown, was to all intents and purpoſes the head of his vaſſals, in the reigns of Edward I. and Edward III., as much as in any of the preceding reigns. How happened it then, that the conſent of theſe vaſſals to the making of laws, or any other act of moment to the public, was not ſtill included in the vote of their lord? Why was it given, againſt the courſe of former proceedings, not by him, as their repreſentative, but by knights of the ſhire, or by citizens, or by burgeſſes, choſen by the vaſſals? Some have referred this change, as we have above ſtated, to the earl of Leiceſter, in the 49th year of Henry III. But an exiſting record, it is ſaid, demonſtrates this date to be falſe. A writ of ſummons, directed to the ſheriffs of Bedfordſhire and Buckinghamſhire, and requiring two knights to be ſent for each of theſe counties, is extant in the cloſe roll of the 38th year of Henry III. And there is alſo a clauſe in the great charter of the 9th of the ſame king (ſee Dr. Blackſtone's edition of the charter), whereby it is declared, that, together with the ſpiritual and temporal lords, other inferior freeholders, *et omnes de regno*, by which words lord Lyttelton underſtands "the whole commonalty of the realm," granted to the king the fifteenth part of all their moveable goods, in return for the liberties acceded to them in that charter. "Nor," ſays his lordſhip (*ubi infra*), "can I diſcover in the hiſtory of thoſe times any reaſon ſufficient to render it probable, that ſo great an alteration ſhould then have been made in the conſtitution of England." Such an alteration muſt have produced diſputes, which would have been noticed by ſome of the numerous hiſtorians of that age. But the Engliſh hiſtory is altogether ſilent as to any diſputes between the nobility and the people, on this account, from the earlieſt times of the Saxon government down to the reign of Charles I. Hence it may be reaſonably preſumed, that the right of the commons muſt have been inconteſtibly eſtabliſhed by cuſtom, and interwoven into the original frame of our government. It is hardly conceivable, that the admiſſion of all the lower orders of freemen, or indeed of any large number, to the great council of the kingdom, and to a participation of the legiſlative power, to which they had no right before, ſhould have been brought about, and yet paſs unobſerved by any writer who lived in that age. If we ſuppoſe, as ſome have done, that the ſitting in parliament was at this time regarded only as a trouble and burden, the impoſition of ſuch a burden on orders of men, who had been before exempt from it, muſt have been on their part reſiſted and oppoſed. But from the act of the 4th of Edward III., which is thus worded, "It is *accorded*, that a parliament ſhall be holden every year once, and more often, if need be," we may infer, that it was generally regarded in a very different light, rather as a privilege, of which they earneſtly deſired the frequent enjoyment, than as a burden, from which they wiſhed to be exempt. It is true, ſome boroughs, which, on account of their poverty, were unable to bear the expence of ſending members to parliament, declined the exerciſe of that privilege; but it would be unfair to allege this circumſtance, which occurred in particular inſtances, as an argument in favour of the general ſenſe of the commons in counties, cities, or other more wealthy boroughs. Beſides, there are ſome inſtances of boroughs that petitioned to be reſtored to the uſe of the privilege of ſending members to parliament, after a very long interruption. Moreover, it ſeems incredible, that if the whole legiſlative power had, before the reign of Henry III., been always placed in the nobility and the king, they ſhould not have oppoſed the extenſion of it to ſo many perſons of lower rank in the ſtate: more eſpecially as the power of the nobility was never higher than it was in this reign. With regard to the earl of Leiceſter, it was not his intereſt, while he was acting at the head of the nobles and people, in a very dangerous conteſt againſt the crown, to make any innovations offenſive or diſtaſteful to either of thoſe bodies; nor is it probable, that any new inſtitution, begun by that earl, ſhould have been confirmed and perpetuated by Edward I. Among the cloſe rolls of the 24th of this king, there is a writ of ſummons to parliament, already cited, in which it is aſſerted, not as an innovation introduced by the earl of Leiceſter, but "a maxim grounded on a moſt equitable law, eſtabliſhed by the foreſight and wiſdom of ſacred princes, that what concerns all, ſhould be done with the approbation of all; and that dangers to the whole community, ſhould be obviated by remedies provided by the whole community." If the earl of Leiceſter, or even if Edward I., or his father, had introduced the practice of ſummoning the commons to parliament, Edward could not with propriety have uſed this language. It is further alleged, that there is not in any of the oldeſt writs for ſending up repreſentatives from cities or boroughs the leaſt intimation, that ſuch elections were a novelty then introduced. Some writs are taken notice of by Mr. Tyrrel, an induſtrious ſearcher of records on this ſubject, which ſet forth a claim of certain tenants in ancient demeſne, before the 15th year of Edward II., that they ought not to be charged with wages to knights of the ſhire; "foraſmuch as they and their anceſtors, tenants of the ſame manor, had, from time beyond memory, been always exempted, by cuſtom, from the expences of knights, ſent by the community of their county to the parliaments of the king, and of his royal progenitors." A time beyond memory is defined by our law-books to be a time antecedent to the beginning of the reign of Richard I.; and if no wages had been ever paid to knights of the ſhire till the reign of Henry III., it would have been prepoſterous for theſe perſons to tell the grandſon of that king, that they had enjoyed a cuſtomary privilege of not paying wages from time beyond memory, which muſt be ſuppoſed, when this exemption was claimed, to go much further back than the reign of Richard I.

With regard to cities and boroughs, there are likewiſe extant two claims, made in the reigns of Edward II. and Edward III., which ſeem to decide the ſenſe of that age concerning the antiquity of the cuſtom of citizens and burgeſſes coming to parliament, and from towns that were held under ſubjects, not immediately of the crown. Theſe are the claims of the towns of St. Albans and Barnſtaple. In the petition of the borough of St. Albans, firſt taken notice of by Selden, and then by Petyt, Brady, Tyrrel, and others, and preſented to parliament in the reign of Edward II., the petitioners aſſert, that though they held *in capite* of the crown, and owed only for all other ſervice their attendance in parliament, yet the ſheriff had omitted them in his writs; whereas, both in the reign of the king's father, and all his predeceſſors, they had always ſent members. This expreſſion, it is alleged, could not have been uſed, if the commencement of the houſe of commons were in the reign of Henry III. However, Madox, in his "Hiſtory of the Exchequer," p. 522, &c. has endeavoured to deſtroy the authority of this petition for the purpoſe to which it is adduced. He aſſerts, firſt, that there was no ſuch tenure in England, as that of holding by attendance in parliament, inſtead of all other ſervice; and ſecondly, that the borough of St. Albans never held of the crown at all, but was always demeſne land of the abbot. It is no wonder, therefore, ſays Mr. Hume, that a petition, which advances two falſehoods, ſhould contain one hiſtorical miſtake, which indeed amounts only to an inaccurate and exaggerated expreſſion; no ſtrange matter in ignorant burgeſſes of that age, who wanted to ſhake off the authority of their abbot, and to hold of the king, without rendering any ſervices even to the crown. See the diſcuſſion of this ſubject, and an examination of the reaſoning of Madox and Dr. Brady, in Lyttelton's Hiſt. of Eng. vol. iii. p. 405, &c. The advocates for the antiquity of borough repreſentatives further refer to a ſtatute of the 5th year of Richard II. ſtat. 2. which enacts, "that all and ſingular perſons and commonalties, which from henceforth ſhall have the ſummons of the parliament, ſhall come from henceforth to the parliaments in the manner as they are bound to do, *and have been accuſtomed within the realm of England, of old times*. And if any perſon of the ſame realm, which from henceforth ſhall have the ſaid ſummons (be he archbiſhop, biſhop, abbot, prior, duke, earl, baron, banneret, *knight of the ſhire, citizen of city, burgeſs of borough*, or other ſingular perſon or commonalty), do abſent himſelf, &c. he ſhall be amerced, and otherwiſe puniſhed, *according as of old times hath been uſed to be done within the ſaid realm in the ſaid caſe*." Upon this ſtatute it is argued, that it makes no diſtinction between the antiquity of ſummons to parliament ſent to the greater nobility, and thoſe to citizens, burgeſſes, and knights of the ſhire. Beſides this remarkable teſtimony of the whole legiſlature in the reign of Richard II. to the antiquity of the cuſtom of the commons coming to the parliament, we have a petition of the commons in the ſecond parliament of the reign of Henry V., which ſets forth to that prince, "that as it hath ever been their libertie and freedom, that there ſhould no ſtatute nor law be made, unleſs they paſt thereto their aſſent, conſidering that the commune of your land, the which is and *ever hath been* a member of your parliament, be as well aſſenters as petitioners," &c. This claim was not diſallowed either by the lords or the king. Beſides theſe authorities drawn from ſtatutes and records, it is ſaid, that very evident indications of the preſence of the people in the national councils, and of their being conſtituent parts thereof, though in a diſorderly manner, are to be found in ſome ancient hiſtories, and contemporary accounts of tranſactions in parliament, from the death of Edward the Confeſſor to that of Henry II. Several inſtances to this purpoſe, occurring in the reigns of William the Conqueror, William Rufus, Henry I., Stephen, Henry II., &c. are produced by lord Lyttelton, in the Notes to his Hiſtory, vol. iii. p. 421, &c. We may further add, that the preſence of the *people* in the Saxon councils, and their having had a ſhare in the higheſt acts of legiſlature and government, even till the entrance of the Normans, ſeems to be proved very ſtrongly from the preambles of laws and other proceedings of thoſe councils, and from the words of the beſt hiſtorians who lived near to thoſe times. On this long uſage, ſays lord Lyttelton, their right was eſtabliſhed; and it appears to have been continued under William the Conqueror, with other cuſtoms and rights confirmed by him to the nation, and under his ſucceſſors, by like ſanctions of ancient liberties granted in repeated royal charters. In ancient times, however, the property of the commons was ſo unequal to that of the nobles, and the feudal obligations of the inferior landholders to the lords under whom they held, created ſuch a dependence of the former on the latter, that although, in the idea and ſcheme of the government, a popular power was mixed with the regal and ariſtocratical, yet, in reality, the ſcale of the people was not weighty enough to make a proper counterpoiſe to either of the others. The commons uſually declined to give their opinion or advice to the crown, in certain matters of ſtate, and ſubmitted their judgment reſpecting them to the king and his council, or to them and the lords. While the repreſentatives of cities, towns, and boroughs, were choſen only out of perſons reſident in them, they were generally people of low degree and condition, whoſe education and way of life rendered them very unfit to judge of arduous queſtions concerning foreign affairs, and treaties with foreign ſtates. Nevertheleſs, even in the earlieſt times, ſo far back as we have any rolls of the parliament, all the commons appear to have given their advice with great freedom in matters concerning the internal government and order of the kingdom. What they declined to adviſe in, upon ſome occaſions, were queſtions that related to the making of peace or war. Mr. Hume, indeed, aſſerts, on the authority of a citation from ſir Robert Cotton's abridgment of the records in the Tower, that the commons in theſe times were much below the rank of legiſlators, and that they were conſidered by the king merely as petitioners, or deſtitute of any proper legiſlative authority. But the whole paſſage, cited by Lord Lyttleton, ſeems to confirm, inſtead of denying their legiſlative authority. In the king's anſwer to their application, they are truly told, that the power of judicature does not appertain to them, but to the king and the lords; and this was the queſtion to which their prayer related: but in ſtatutes they were to judge, as well as in grants, ſubſidies, &c. Their being petitioners was certainly no argument againſt their being legiſlators; ſince the courſe of proceedings then was, that their petitions, if aſſented to by the lords and the king, ſhould be turned into ſtatutes, as all the old records of parliament unqueſtionably ſhew.

Burgeſſes were firſt admitted into the Scottiſh parliaments by Robert Bruce, A.D. 1326; and in the preamble to the laws of Robert III. they are ranked among the conſtituent members of that aſſembly. Brady of Boroughs. Petyt's Right of the Commons. Brady's Anſwer to Petyt. Tyrrel's Appendix to his Hiſtory of England. Hume's Hiſt. of England, vol. i. and ii. Appendix i. and ii. Lyttelton's Hiſtory of Henry II. vol. iii. Robertſon's Hiſt. of Scotland, vol. i. p. 79. 8vo. See WITTENAGEMOTE, and PARLIAMENT.

BOROUGH, in *Scots Law*, is a body corporate, conſiſting of the inhabitants of a certain tract of ground, erected by the ſovereign, with juriſdiction annexed to it. Boroughs are erected, either to be holden of the ſovereign himſelf, which is the general caſe of royal boroughs, or of the ſuperior of the lands ſo erected, as boroughs of regality and barony. The former are empowered, by their charters, to chooſe annually certain office bearers, or magiſtrates; but in the latter, the nomination of magiſtrates is, by their charters, lodged ſometimes in the inhabitants, ſometimes in the ſuperior. Bailies of boroughs have juriſdiction in matters of debt, ſervice, and queſtions of poſſeſſion betwixt the inhabitants. Their criminal juriſdiction comprehends petty riots, and reckleſs fire-raiſing. The dean of guild is that magiſtrate of a royal borough, who is head of the merchant-company; to him belong the cognizance of mercantile cauſes within the borough, and the inſpection of buildings, that they encroach neither on private property, nor on the public ſtreets; and he may direct inſufficient houſes to be pulled down. His juriſdiction has no dependence on the court of the borough, or bailie-court.

BOROUGHS, *Royal*, in Scotland, are corporations made for the advantage of trade, by charters granted by ſeveral of their kings; having the privilege of ſending commiſſioners to repreſent them, beſides other peculiar privileges: Theſe form a body of themſelves, and ſend commiſſioners, each to an annual convention at Edinburgh, to conſult the benefit of trade, and the general intereſt of the boroughs. According to Chamberlayne, they have the ſole power of trade and merchandize, excluſive of all others, a power of holding courts, exerciſing the juriſdiction of ſheriffs, making bye laws, &c.

The company of merchants in a royal borough make what is called a guild; the chief of which is a dean of guild, who is next magiſtrate to the bailiff. See GUILD.

The royal boroughs are not only ſo many diſtinct corporations, but do alſo conſtitute one entire body, governed by, and accountable to one general court, anciently called the "court of four boroughs," held yearly to treat and determine concerning matters relating to the common advantage of all boroughs. The four boroughs which compoſed this court were Edinburgh, Stirling, Roxburgh, and Berwick; which two laſt falling into the hands of the Engliſh, Linlithgow and Lanerk were put in their places; with a ſaving to the former, whenever they ſhould return to their allegiance. But this court not being ſufficient to anſwer the neceſſities of the royal boroughs, they were all empowered, under James III. in 1487, to ſend commiſſioners to a yearly convention of their own, which was then appointed to be held at Inverkeithing, and is now held at Edinburgh, under the denomination of the *convention of boroughs*, veſted with great power.

BOROUGH-*Courts*, in *Law*, are certain courts held in boroughs, by preſcription, charter, or act of parliament: ſuch are the ſheriff's court, and court of huſtings in London. See COURT.

BOROUGH-*Engliſh*, ſo named in contradiſtinction, as it were, to the Norman cuſtoms, and noticed by Glanvil (l. 7. c. 3.), and by Littleton (§ 165.), denotes a cuſtomary deſcent of lands or tenements in ſome ancient boroughs and copyhold manors, whereby they come to the youngeſt, inſtead of the eldeſt ſon; or if the owner hath no iſſue, to the youngeſt inſtead of the eldeſt brother; becauſe according to Littleton, the youngeſt is ſuppoſed, in law, the leaſt able to ſhift for himſelf. 1 Inſt. 110. b. And in ſupport of this reaſon, other uſages in favour of the youngeſt are alleged, as that in Kent, where the lands being equally divided among all the ſons, the youngeſt is to have the privilege of aſtre or hearth in the manſion-houſe, in his ſhare, as being ſuppoſed the tendereſt and more in need of warming. Others, notwithſtanding, ſuſpect a different reaſon for the riſe of borough-Engliſh, viz. that the places, where this cuſtom now obtains, were anciently liable to that cuſtom granted to the lords of manors in Scotland by king Eugenius, who had the privilege of enjoying the firſt night of their tenants' brides; ſo that the eldeſt ſon being preſumed to be the lord's, they uſually ſettled their lands on the youngeſt ſon, whom they thought their own; which being practiſed a long time, grew at length into a cuſtom. The cuſtom, however, never obtained in England, though it did in Scotland, under the name of "mercheta," or "marcheta," till it was aboliſhed by Malcolm III. Perhaps, ſays judge Blackſtone, the origin of this practice may be illuſtrated by that of the Tartars, mentioned by Du-Halde, among whom the ſame cuſtom of deſcent to the youngeſt ſon prevails. As the nation is compoſed of ſhepherds and herdſmen, the eldeſt ſons migrate from their father with an allotment of cattle, to ſeek a new habitation. The youngeſt ſon, continuing lateſt with his father, is naturally the heir of his houſe; the reſt being already provided for. This cuſtom of migrating obtained in many other northern nations; and borough-Engliſh may be a remnant of that paſtoral ſtate of our Britiſh and German anceſtors, which Cæſar and Tacitus deſcribe. Blackſtone's Comm. vol. ii. p. 83, 84.

This cuſtom goes with the land, and directs the deſcent to the youngeſt ſon, although there be a deviſe to the contrary. 2 Lev. 138. If a copyhold in borough-Engliſh be ſurrendered to the uſe of a perſon and his heirs, the right will deſcend to the youngeſt ſon, according to the cuſtom. 1 Mod. 102. And a youngeſt ſon ſhall inherit an eſtate in tail, in borough-Engliſh. Noy. 106. But an heir at common law ſhall take advantage of a cuſtom annexed to borough-Engliſh land; though the youngeſt ſon ſhall be entitled to all actions in right of the land. 1 Nelſ. Abr. 396. And the eldeſt ſon ſhall have tythes ariſing from borough-Engliſh land; for tythes of common right are not inheritances deſcendible to an heir, but come in ſucceſſion from one clergyman to another. Ibid. 347. Borough-Engliſh land being deſcendible to the youngeſt ſon, if a younger ſon dies without iſſue male, leaving a daughter, ſuch daughter ſhall inherit "jure repreſentationis." 1 Salk. 243. By this cuſtom the widow ſhall have the whole of her huſband's lands in dower, called her "free-bench;" and it is given to her to enable her the better to provide for the younger children entruſted to her care. Co. Litt. 33. 111. F.N.B. 150. Mo. Pl. 566. As borough-Engliſh is particularly noticed by the law, it is unneceſſary to prove that ſuch cuſtom actually exiſts, but only that the lands in queſtion are ſubject to it. 1 Comm. 76. But the extenſion of the cuſtom to the collateral line muſt be ſpecially pleaded. Robinſ. on Gavelkind, 38. 43. 93.

Borough-*Head*, or *Head*-Borough, was one of the loweſt magiſtrates among the Anglo-Saxons, and the chief man of the decennary, tithing, or free-burg, conſiſting of ten families; choſen by the reſt to ſpeak and act in their behalf. He is alſo called the tithing-man, and, in ſome countries, the borough-holder, bors-holder, or borough's-elder, being ſuppoſed the diſcreeteſt man in the borough, town, or tithing.

According to the inſtitution of Alfred, every houſeholder was anſwerable for the behaviour of his family and ſlaves, and even of his gueſts, if they lived above three days in his houſe; and ten neighbouring houſeholders formed themſelves into a corporation, under the name of a decennary, or tithing, of which the head-borough, or bors-holder (derived from the Saxon words *borh*, a ſurety, and *older*, a head or chief), was the preſident, and they were anſwerable for the conduct of each other. Every man was puniſhed as an outlaw, who did not regiſter himſelf in ſome tithing; nor could any one change his habitation, without a warrant or certificate from the bors-holder of the tithing to which he formerly belonged. When any perſon in any tithing was guilty of a crime, the bors-holder was ſummoned to anſwer for him; and if he were not willing to be ſurety for his appearance and his clearing himſelf, the criminal was committed to priſon, and there detained till his trial. If he fled, either before or after finding ſureties, the bors-holder and decennary became liable to inquiry, and were expoſed to the penalties of the law. Thirty-one days were allowed them for producing the criminal: and if they did not find him within that time, the bors-holder, with two other members of the decennary, was obliged to appear, and, together with three chief members of the three neighbouring decennaries (making twelve in all), to ſwear that his decennary was free from all privity both of the crime committed, and of the eſcape of the criminal. If the bors-holder could not find ſuch a number to anſwer for their innocence, the decennary was compelled by fine to make ſatisfaction to the king, according to the degree of the offence. The ſeverity of this regulation was afterwards a little mitigated, and the oaths of all the members of the tithing to which the criminal belonged, to the above effect, were admitted as a ſufficient exculpation, provided that, at the ſame time, they promiſed, upon oath, to preſent him to juſtice, as ſoon as they could apprehend him. By this inſtitution, every man was obliged, from his own intereſt, to keep a watchful eye over the conduct of his neighbours; and was in a manner ſurety for the behaviour of thoſe who were placed under the diviſion to which he belonged; and hence theſe decennaries received the name of frank-pledges. See Tithing.

In many pariſhes, head-borough alſo ſignifies a kind of head conſtable, where there are ſeveral choſen as his aſſiſtants, to ſerve warrants, &c. See Constable.

Borough, or *Borge*, denotes a pledge or ſecurity for another's keeping the peace, and conforming to the laws. The word is Saxon, and is ſometimes alſo written borough; in Latin writers, borgha and burgha.

Borough-*breach*, *Borgi fractura*, in *Ancient Law Writers*, denotes a breaking of the pledge or ſecurity given by the members of tithings for the behaviour of each other.

This is the ſame with what is otherwiſe called *borg-brege*, *borgh-brege*, *borg-breche*, and *borghi-fractura*.

Boroughs, *Law*, or *Borrows*, in the law of Scotland, the ſame with what in England is called *binding to the peace*. In caſe of a contravention of law-boroughs, the ſurety or cautioner is equally liable with the principal for the penalty ſpecified therein, the one-half to the king, and the other to the complainer.

BOROUGH-BRIDGE, in *Geography*, an ancient borough town of Yorkſhire, in England, derives the latter part of its name from a handſome ſtone bridge over the river Ure. This place was formerly called *New*-borough, in contradiſtinction from Aldborough or *Old*-borough, a village about one mile diſtant. Each of theſe places has the privilege of ſending two members to parliament; and as both are included in one pariſh, that pariſh has the ſingular power of returning four members. Aldborough firſt made a return in 1558, and New-borough in 1553. The former place is attributed, by many reſpectable writers, to Roman origin, and is ſaid to be the ſtation Iſurium, which was placed on the Watling-ſtreet, 17 miles from Eboracum, or York. The ancient walls of this town (Iſurium), obſerves Mr. Gough, though level with the ground, may eaſily be traced in a circumference of more than a mile and a half. They incloſe an area of an oblong ſquare, containing about 60 acres, which ſlope to the river Ure. The walls, nearly four yards thick, were founded on large pebbles, which were laid in a bed of blue clay. Near the centre of the ſtation was a hillock, called Borough-hill, which ſeems to have been the citadel, where foundations of buildings, Moſaic pavements, &c. have been diſcovered. A ſudatory, with ſculptured altars, numerous coins, urns, and other relics of the Romans have been found at this ſtation, which was evidently of much conſequence in Roman Britain, although probably ſubordinate to the great one at Eboracum. It is generally written Iſurium Brigantum, whence Horſley infers that it was the capital of the Brigantes. A particular account of the antiquities found here, with engravings, may be ſeen in Gough's edition of Camden, vol. iii. p. 59, &c. and a very judicious account in Hargrave's Hiſtory of Knareſborough, fifth edition, 12mo. 1798.

Borough-Bridge is only a ſmall town, with 114 houſes and 680 inhabitants. It belongs to the pariſh of Aldborough, and has a chapel of eaſe to the mother church. In the centre of the town is a croſs, or obeliſk, about twelve feet high, of the ſame ſpecies of ſtone as the *Devil's Arrows*, which are at a ſhort diſtance weſt of the town. Theſe ſingular ſtones have excited much curioſity among antiquaries, and furniſhed a theme for various conjectural diſſertations.

There were formerly four ſtones, raiſed upright in the ground, but one of them was demoliſhed in the laſt century. The remaining three ſtand about two hundred feet from each other, are of an obeliſkal ſhape, and of a ſtupendous ſize. The tops ſeem as if ſplit, and the ſides are indented, or furrowed, for a certain ſpace downwards. This appearance induced ſome writers to aſſert that they were fluted by art; but it is more probable that the weather effected this operation. The height of the talleſt ſtone is twenty-two feet and a half from the ground, and its greateſt circumference ſixteen feet. Its depth in the ground is four feet and a half. Another ſtone meaſures twenty-one feet high, by ſeventeen feet in girth; and the third ſtone is ſeventeen feet high, by twenty-two feet in circumference. Mr. Drake (in his hiſtory of York) ſuppoſes they were trophies raiſed by the Romans; Leland is of the ſame opinion; but Dr. Gale conjectures, that they were Hermæ, and from their particular poſition pointed to four different Roman roads that met at this place. Doctors Plott and Stukely attribute them to the Britons, and this ſeems the more probable, as we are well aſſured that the primeval inhabitants of Britain raiſed various ſingle upright ſtones, and different circles of ſtones of varied diameter and magnitude. Theſe, ſays Mr. Pennant, were either monumental memorials of departed heroes, or the rude objects of worſhip, ſuch as the Iſraelites bowed to, when they departed from the purity of adoration. Such objects are ſtyled in Wales Meini-hirion, or the long ſtones, and Meinigwyr, or the ambroſial ſtones, as deſcribed by Bryant and others.

The river Ure is not navigable higher than Boroughbridge, near which the canal from Ripon communicates with it by means of a lock. About two miles and a half below the town, the river Swale joins the Ure. Borough-bridge, Aldborough, and the manor, honour, and caſtle of Knareſborough were, in the 13th of Henry III. granted to the famous Hubert de Burgh, upon his paying 100l. a year into the exchequer, but were forfeited by his ſon in the ſame reign for joining Simon de Montfort at the battle of Eveſham. Borough-bridge remained in the crown till the reign of Edward II. who beſtowed it on his inſolent favourite Piers Gaveſton. It now belongs, with the intereſt of the two boroughs, to the duke of Newcaſtle. Near this place, in 1322, a battle was fought between the ſoldiers of Edward II. and prince Thomas, earl of Lancaſter, when the latter was taken priſoner, and, after ſuffering various indignities, was beheaded. Moſt of his partizans were taken, and ſome were ſlain; among whom was John de Bohun, earl of Hereford, who, in paſſing over the wooden bridge of this place, was killed by a lance from a ſoldier lurking beneath the bridge.

This town has a weekly market on Saturdays, and ſeveral fairs annually; the principal of which, in June, continues for a week, and is much frequented by the manufacturers from Sheffield, Birmingham, Wolverhampton, &c. Hargrove's Hiſtory of Knareſborough. Gough's edition of Camden's Britannia. Pennant's Tour from Alſton Moor to Harrowgate, 4to. 1804.

BOROVITCHI, a town and diſtrict of Ruſſia, in the government of Novogorod, ſituated on the river Mſta; 88 miles E.S.E. of Novogorod, and 168 S.E. of Peterſburg.

BOROWA, a town of Bohemia, in the circle of Czaſlau, 8 miles E.N.E. of Teutſch Brod.

BOROWICA, a town of Poland, in the palatinate of Volhynia; 20 miles N. of Lucko.

BOROWICK, a town of Poland, in the palatinate of Kiou, 32 miles S.E. of Czerkaſy.

BOROWNIZA, a town of Bohemia, in the circle of Konigingratz, 18 miles S. E. of Konigingratz.

BOROWSKO, a town of Bohemia, in the circle of Czaſlau; 7 miles W. of Ledetſch.

BOROZAIL, in *Medicine*, a diſeaſe which reſembles the yaws, frequent among the Africans inhabiting the banks of the river Senegal. See Yaws.

BOROZDINKA, in *Geography*, a fortreſs of Ruſſian Tartary, in the government of Caucaſus, on the Ural; 32 miles N. of Guriel.

BORRAGO, in *Botany*. See Borago.

BORRELISTS, in *Eccleſiaſtical Hiſtory*, a ſect or ſort of Anabaptiſts in Holland, who allow of no uſe of ſacraments, public prayers, or other external worſhip, nor of any human gloſs or explication of ſcripture; but profeſs to adhere to the faith and manners of the New Teſtament times in all their ſimplicity.

They took their denomination from their founder, Borrel, a perſon of great learning in the Hebrew, Greek, and Latin tongues, and brother of M. Borrel, ambaſſador of the States to the French king.

BORRI, Joseph Francis, in Latin *Burrhus*, in *Biography*, an impoſtor and empiric of the 17th century, was born at Milan, about the year 1625, and educated in the Jeſuits' ſeminary at Rome. In early life he was notorious for his licentious conduct; but afterwards aſſuming the character of a religious devotee, he declaimed againſt the corruption of the age, and pretended to ſupernatural viſions and revelations. Dreading the powers of the inquiſition at Rome, he removed to Milan, where he eſtabliſhed a new ſect, conſiſting of perſons whom he attached to himſelf and his cauſe by vows of ſecrecy, and whom he deprived of their property by enforcing the obligation of voluntary poverty. With the aſſiſtance of his deluded followers, and by means of a ſword which he pretended to have received from heaven, he propoſed to compel all mankind to unite in one ſheep-fold, of which he was to be the ſhepherd and ſuperintendant. Among his other fancies and chimeras, one of his moſt diſtinguiſhing doctrines was that of the deification of the virgin Mary, whom he conceived to be the only daughter of God, and the Holy Ghoſt incarnate. Arrogating to himſelf a divine miſſion, he aſſumed the privilege of conveying illumination to his followers by the impoſition of hands; and after gaining a ſufficient number of adherents, it was his intention to open his commiſſion at the great ſquare of Milan, and there to inveigh againſt the civil and eccleſiaſtical abuſes of government, to animate the people to recover their liberty, and to ſeize the city and its territories, with a view to more extenſive conqueſts and dominions. As ſoon as ſome of his diſciples were arreſted and impriſoned, he made his eſcape; and the inquiſition proceeding againſt him, declared him contumacious, condemned him as a heretic, and cauſed his effigies to be publicly burnt at Rome. At this time, viz. in 1661, he ſought an aſylum at Amſterdam, and here he found a convenient theatre for the further exerciſe of his impoſtures. Having aſſumed the characters of a chemiſt and a phyſician, he pretended to extraordinary ſkill in the cure of all kinds of diſtempers, ſet up a ſplendid equipage, and uſurped the title of excellence. But when his credit ſunk, and his reſources derived from the art of ſwindling failed, he fled from Amſterdam in the night, taking with him all the money and jewels he could collect, and removed to Hamburgh, where he impoſed upon queen Chriſtina, by pretending to the ſecret of the philoſopher's ſtone; but when her means of encouraging this deluſion failed, he removed to Denmark, and obtained from the king profuſe ſupplies. Upon the death of the king, he thought it moſt prudent to make his eſcape, and in his flight towards Turkey, he was apprehended on the German frontier by miſtake, as a political criminal. His name being accidentally mentioned to the emperor in the preſence of the pope's nuncio, he was demanded as an heretical offender, and delivered up by the emperor on condition that his life ſhould be preſerved. Upon his arrival at Rome, he was ſentenced to abjure his errors, to do public penance, and to be impriſoned for life. In priſon he was viſited by ſeveral perſons of rank, who reſorted to him in conſequence of the fame of his adventures; and having performed a cure on the duke d'Etrée, the French ambaſſador, who had been given over by ſeveral phyſicians, he obtained ſome degree of liberty, and at length a removal to the caſtle of St. Angelo, where he was allowed to proſecute his chemical experiments, and where he died in 1695. Some writings were attributed to him, and printed at Geneva in 1681; one, entitled "La Chieve del Gabinetto;" i. e. the key of the cabinet, being a ſeries of letters relative to alchemy and the Roſicrucian philoſophy; and the other, "Iſtruzioni Politiche," or a ſet of political aphoriſms, with a commentary addreſſed to the king of Denmark. The Bibliotheca Medicorum mentions alſo two of his letters, printed at Copenhagen in 1669, and written to Bartholine; one, "De ortu cerebri et uſu medico;" the other, "De artificio oculorum humores reſtituendi." Konig attributes to him another piece, entitled "Notitia gentis Burrhorum."

Borri combined a conſiderable portion of cunning and artifice with his enthuſiaſm, and thus became capable of practiſing more ſucceſsfully on the credulity of mankind. His fancies with regard to the new celeſtial kingdom, which he pretended a commiſſion to eſtabliſh, and the downfal of the Roman pontiff, which he threatened to accompliſh, are ſo extravagant, childiſh, and abſurd, that they can be viewed by ſober perſons in no other light than as the crude reveries of a diſordered brain. In his conduct he manifeſted, on various occaſions, the greateſt vanity and levity, accompanying that ſpirit of impoſture which is uſually diſplayed by quacks and mountebanks; and, indeed, ſays Moſheim, "in the whole of his behaviour, he ſeemed deſtitute of ſenſe, integrity, and prudence." Gen. Dict. Moſheim's Eccl. Hiſt. vol. v. p. 240.

BORRIANO, in *Geography*, a town of Spain, at the mouth of the river Millas, in the gulf of Valencia; 7 leagues N. of Valencia.

BORRICHIUS, Olaus, in *Biography*, the ſon of a Lutheran miniſter at Ripen in Jutland, was born April 6th 1626. At the age of 18 he was ſent to Copenhagen, where he applied with ſo much aſſiduity to his ſtudies, as to gain him the friendſhip of the ſuperiors of the college, by the recommendation of whom he obtained the canonry of Lunden. By continuing this courſe of life, his reputation for learning and diligence was ſo eſtabliſhed, that in 1654, when he was only 28 years of age, he was invited to accept the regency of the academy at Herlow. But as he had determined to dedicate his time to the acquirement of the knowledge of medicine, he refuſed this offer, purpoſing to ſpend a few years in viſiting foreign academies, and hearing the moſt celebrated profeſſors in the different branches of that art. The execution of this project was, however, poſtponed, at the inſtigation of M. Gerſtorff, the prime miniſter of Denmark, who entertained him at his houſe as preceptor to his ſons. Here he continued five years, at the end of which time, as a proof of the ſatisfaction he had given, and of the opinion the miniſter had conceived of his various endowments, he was at once created profeſſor in philoſophy, poetry, chemiſtry, and botany, in all of which he eminently excelled. Before he entered on the duties of his offices, he was permitted, agreeably to his original intention, to viſit the different ſchools of Holland, England, France, Germany, and Italy, accompanied by the two ſons of the miniſter, his pupils. Having ſpent ſix years in his tour, and ſtored his mind with the knowledge of all that was curious or uſeful, in the countries he paſſed through, and taken his degree of doctor in medicine at Angers, he returned in October 1666 to Copenhagen. He now undertook the duty of lecturer in chemiſtry and in botany; and by the excellency of his diſcourſes on theſe ſubjects, confirmed his countrymen in the high opinion they had entertained of his talents. Though the time neceſſarily ſpent in this employment, and in preparing his numerous publications, left him, one would have thought, but little leiſure for the practice of phyſic, yet from the great number of valuable obſervations furniſhed by him to the Acta Haffnienſia, he muſt have had no inconſiderable ſhare of buſineſs in that way. In 1686, he was made counſellor in the ſuperior court of juſtice; and, in 1689, counſellor in the royal chancery. He died the 3d of October, in the following year, three weeks after having undergone the operation for the ſtone in the bladder. As Borrichius had never been married, he left a conſiderable part of the large poſſeſſions he had acquired by his practice, for erecting and endowing a college for poor ſtudents in medicine. His principal medical productions conſiſt of obſervations publiſhed in the Acta Haffnienſia, and other ſimilar collections, and of the letters ſent by him while on his travels, to F. Bartholine, under whom he had been educated. The letters, Haller obſerves, are the moſt valuable of thoſe publiſhed by Bartholine in his "Epiſtolæ Medicæ;" but the works by which he acquired his principal celebrity, were "De ortu et progreſſu chemiæ," publiſhed in 1668, 4to.; and his "Hermetis Ægyptiorum et Chemicorum ſapientia, ab H. Conringio vindicata," 1674. In this very learned and elaborate work, the author defends the character of the ancient Egyptians, againſt the ſtrictures of Conringius: attributing to them the invention and perfection of chemiſtry, and even of alchemy; perſuading himſelf that among their ſecrets they poſſeſſed the art of tranſmuting metals. But either from infatuation, or a deſire of victory, he cites ſeveral manuſcripts, ſince known to be ſpurious, as genuine, and ſome written ſince the time of our Saviour, as of much higher antiquity. Notwithſtanding theſe blemiſhes, the works have great merit. He ſhews from undoubted authority, that the Egyptians were early acquainted with the medical properties of ſeveral of their plants; that they uſed ſaline, and even mineral preparations, ſome of them prepared by chemiſtry; that incubation, or the method of hatching eggs by artificial heat, was firſt uſed by them; in fine, that the art of medicine, invented by them, paſſed from them to the Grecians. Borrichius was alſo author of "Conſpectus præſtantiorum ſcriptorum linguæ Latinæ;" "Cogitationes de variis linguæ Latinæ ætatibus;" "Analecta philologica, et judicium de lexicis Latinis Græciſque," and various other philological works. Eloy. Dict. Hiſt. Gen. Dict. and Haller's Bib. Med. Pract. where will be found the titles of the diſſertations, and an analyſis of the principal works.

BORROMEAN Islands, in *Geography*, two iſlands ſituate in the bay of the lake called "Lago Maggiore," or "Lago di Locarno," in the Milaneſe, ſo denominated from their having belonged to the Borromeo family. One of theſe iſlands is called "Iſola-Bella," and the other "Iſola-Madre." They are about a league diſtant from one another, and derive the various beautiful ſcenes and objects which they preſent from the taſte and liberality of the counts Renatus and Vitalian Borromeo. They were originally barren rocks; but, with immenſe labour and expence, they were furniſhed with numerous terraces, grottoes, gardens,

dens, fountains, groves of cedars, cypreſs, citron trees, orange-trees, laurel, &c. which render them ſcenes of enchantment, and a kind of terreſtrial paradiſes. For a particular deſcription of them, ſee Keyſler's Travels, vol. i. p. 374, &c.

BORROMEO, Charles, *Cardinal*, in *Biography*, the ſon of count Gilbert Borromeo, and a ſiſter of pope Pius IV. was born at the caſtle of Arona, in 1538; and having made a conſiderable progreſs in literature, he was called to Rome on the acceſſion of his uncle to the papal chair in 1539, and inveſted with the dignities of cardinal-nephew, archbiſhop of Milan, and penitentiary, legate of Ancona, Bologna, and Romagna, and protector of ſeveral crowns and religious orders. At the age of 22, he was entruſted with the government of the moſt important affairs of the church; and he principally contributed to that encouragement of literature and patronage of learned men which diſtinguiſhed this pontificate. He inſtituted at his houſe an academy, to which all the learned men at Rome repaired, when the buſineſs of the day was concluded, to diſcuſs literary queſtions, and particularly ſuch as related to ſacred ſubjects. The works of this ſociety have been publiſhed in ſeveral volumes, under the title of "Noctes Vaticanæ," ſo denominated becauſe its aſſemblies were held at night in the Vatican. In conformity to the directions of his uncle, he began his public career with great magnificence and ſplendour, more anxious to do honour to the pope and the rank aſſigned him by his favour, than to gratify his own inclinations; but when the council of Trent iſſued its decrees for the reformation of clerical manners, he ſet an example of obedience by diſmiſſing at once 80 domeſtics, diſcarding ſilk from his dreſs, and faſting once every week on bread and water. In co-operation with the deſigns of the council, he exerted himſelf in promoting a better education among the clergy; and with this view he inſtituted a number of ſeminaries in his own dioceſe, and in other places. He founded the Jeſuits' college at Milan, and was eminently inſtrumental in erecting a magnificent edifice for the univerſity of Bologna. He took pains in correcting the writings of ſome doctors of the church, which had been corrupted, and employed Achilles Statius for this purpoſe; and he was alſo active in eſtabliſhing the congregation of eight cardinals, for reſolving doubts and obviating difficulties that might ariſe in the explication of the decrees of the council of Trent. Although he was urged by his parents, and even by the pope, to prevent his family from becoming extinct by entering into a married ſtate, he preferred continuing in the church; and notwithſtanding many impediments ariſing from ill health, a weak voice, and defective articulation, he determined to become a preacher, and by aſſiduous and perſevering application overcame all difficulties. After the death of his uncle, he removed to his archbiſhopric, and devoted himſelf to the duties of his paſtoral office, which he performed with great honour to himſelf, and very much to the ſatiſfaction and edification of the people. He took great pains in the reformation of religious orders, and in adminiſtering conſolation to the remoteſt parts of his dioceſe. During the plague, which afflicted the city and dioceſe of Milan in 1576, he continued in the ſcene of danger, by his preſence imparted comfort to the ſick and dying, and ſold his goods in order to furniſh himſelf with means for relieving their indigence and diſtreſs. He alſo convened ſeveral provincial councils and ſynods, and obtained their ſanction in enacting and enforcing various uſeful regulations for the government of the church. His inceſſant labours and auſterities impaired his feeble conſtitution, and terminated his courſe of active and exemplary ſervice at the early age of 47 years, in 1584; and pope Paul V. beſtowed upon him, in 1610, the honours of canonization. Few ſaints in the calendar better deſerved this diſtinction. Borromeo's writings on ſubjects of faith and morals were numerous; they were collected in 5 vols. fol. and printed at Milan in 1747. His "Acta Eccleſiæ Mediolanenſis" was publiſhed in folio, in 1519. Moreri. Nouv. Dict. Hiſt. Fabr. Bib. Græc. t. xi. p. 718. The life of Borromeo was publiſhed by Pere Touron, in 3 vols. 12mo. Paris. 1761.

BORROMINI, Francis, an Italian architect, was born in 1599, at Biſſona, in the dioceſe of Como, and ſtudied ſculpture firſt at Milan, and afterwards at Rome. Under the patronage of Maderno, his relation, who was the architect of St. Peter's, he directed his principal attention to architecture; and upon the death of Maderno in 1629, he worked under his ſucceſſor Bernini; and protected by pope Urban VIII. he was employed about the church of Sapienzia and the Barberini palaces. At length he became the rival of Bernini; and acquired ſuch a degree of reputation, that the king of Spain engaged him to furniſh a deſign for the enlargement of his palace at Rome; and though it was never executed, he received a liberal recompence in money, and was honoured with the order of St. James. The pope alſo beſtowed upon him the order of Chriſt, and a penſion. In this career of proſperity, the extravagance of his taſte incurred the cenſure of ſeveral critics; and he was charged, by Bernini, with corrupting the ſound principles of the art. The clamour againſt him prevailed, and his rival obtained the direction of a building for which he had prepared the deſigns; upon which he retired in diſguſt into Lombardy. On his return, he employed himſelf in preparing a ſet of groteſques for engraving; but the mortification he experienced preyed upon his ſpirits, and produced occaſional derangement of mind; and in one of his paroxyſms, he ſeized a ſword and gave himſelf a mortal wound, in his 68th year. Borromini affected ſingularity, and indulged a capricious and fantaſtic taſte in his deſigns and decorations, which was utterly inconſiſtent with ſimplicity and propriety. Accordingly ſome have repreſented his ſtyle in architecture as reſembling the literary ſtyle of Seneca, and of the poet Marino. Vain of his own imagined ſuperiority, and jealous of his brethren, he declined to concur with them; and before his death, deſtroyed all his deſigns, leſt any other architect ſhould paſs them off as his own. His beſt work, among many performances, in churches and palaces at Rome, which blend ſtriking beauties with ſingularity, is accounted to be the college of the Propaganda. The oratory of the Chieſa Nova, and the houſe of the fathers are alſo admired. D'Argenville. Gen. Biog.

BORROWDALE, in *Geography*, a pictureſque diſtrict of Cumberland, near Keſwick, ſouth of Derwent-lake, commencing at the cataract of Lowdore, and ſpreading its tremendous rocks in a vaſt ſweep round the head of the lake, at the diſtance of about half a mile from the ſhore, which is bounded by meadow-land to the brink of the water. The aſpect of theſe rocks, with the fragments that have rolled from their ſummits, and which lie on each ſide of the road, prepare the curious traveller for the awful ruin to which he approaches in the gorge or paſs of Borrowdale, that opens from the centre of the amphitheatre, which bounds the head of Derwent-water. Dark rocks yawn at its entrance, and diſcloſe a narrow paſs, running up between mountains of granite, that are ſhivered into almoſt every poſſible form of horror. Above, the whole ſcene reſembles the accumulations of an earthquake or volcanic eruption, ſplintered, ſhivered, and amaſſed in piles over one another. Huge cliffs have rolled down into the glen below, where, however, remains a miniature of the moſt delightful paſtoral beauty on the banks of the river Derwent. Among the moſt ſtriking of the fells are Glaramara, exhibiting rock upon rock, and Eagle-crag, where that bird till of late has been accuſtomed to build its neſt: but the depredations annually committed on its young, have driven it from the place. Hence the paſs extends for a mile over a frightful road, that climbs among the crags of a precipice that hangs over the river, with frequent glimpſes into glens and chaſms, ſeemingly obſtructing further progreſs by fallen ſhivers of rock, and at length reaching the gigantic ſtone of Boulder, that appears to have been pitched into the ground from the ſummit of a neighbouring fell, and in its ſhape reſembles the roof of a houſe reverſed, the ſide towards the road projecting about 12 feet over the baſe. The dimenſions of this huge maſs are as follow: its length is 62 feet, its perpendicular altitude 36 feet, its circumference 89 feet, and it contains 23090 ſolid feet; its weight is 1771 tons 13 hundred. The returning traveller is preſented with an opening view over the Derwent lake of the Skiddaw-mountain, and the upper ſteeps of Saddleback obliquely ſeen towards the eaſt, and rearing itſelf far above all the heights of the eaſtern ſhore. At the entrance of the gorge, the village or hamlet of Grange lies picturesquely on the bank of the Derwent, among meadows and woods, and ſhelters itſelf under the ruinous fell, called Caſtle-crag, deriving its name from the caſtle or fortreſs, which from its ſummit once guarded this important paſs. Borrowdale abounds in valuable mines, among which ſome are known to ſupply the fineſt wadd, or black lead to be found in England. Theſe mountains alſo furniſh great quantities of iron-ſtone, ſlate, and various kinds of free-ſtone. Radcliffe's Journey in 1794, vol. ii. p. 350, &c.

BORROWSTONNESS, or Bowness, a town of Scotland, in the county of Linlithgow, having a harbour on the ſouth ſide of the frith of Forth, and ſurrounded with coal-pits and ſalt-works, which produce the principal exports of the place. It has a good pier and harbour of late conſtruction: 15 miles W. of Leith and 4 N. of Linlithgow.

BORSALO, or Bursal, a town and kingdom of Africa, in Negroland, not far from the ſea-coaſt, and extending along the northern bank of the river Gambra, as far as Tantagonda. The town of this name is in the middle of the country, about 45 leagues from the coaſt. In the country which is little known, there is a river of the ſame name.

BORSELLA, in the *Glaſs Works*, an inſtrument wherewith they extend or contract the glaſſes at pleaſure; alſo ſmooth and levigate them.

BORSEHOLDER. See Borough, *Head.*

BORSET, in *Geography*, an abbey about half a league from Aix-la-Chapelle, celebrated for its mineral waters, of the ſame general quality with thoſe of Aix-la-Chapelle, and recommended as warm baths in ſimilar diſeaſes, and alſo in dropſical and oedematous caſes. They conſiſt of the upper and lower ſprings; thoſe of the former, which ſupply the baths, raiſing the thermometer to 158°, and thoſe of the latter to 127°. They are leſs ſulphurous than thoſe of Aix-la-Chapelle; and abound much with ſelenites, which incruſts the pipe through which they paſs, and alſo the ſides of the bath.

BORSIPPA, or Barsita, in *Ancient Geography*, *Semanat*, a town of Babylonia, according to Joſephus and Strabo; repreſented by the latter as conſecrated to Diana and Apollo, and placed by M. d'Anville on the eaſtern bank of the Euphrates, about the 32d degree of latitude.

BORSK, in *Geography*, a town and diſtrict of Ruſſia, in the government of Upha, ſeated on the river Bielaya. N. lat. 55° 20′. E. long. 55° 15′.

BORSNA, or Borzna, a town and diſtrict of Ruſſia, in the government of Tchernigof, ſeated on a rivulet of the ſame name, falling into the Deſna; 5 miles S. E. of Tchernigof, and 548 S. of Peterſburg.

BORSOD, a town of Hungary, and the capital of a country of the ſame name; inhabited by Hungarians, Sclavonians, Bohemians, and Germans, and furniſhing good wine and grain.

BORSOE, a ſmall iſland of Denmark, 2 leagues N. E. from Apenrade, on the eaſt coaſt of Sleſwick.

BORSTEL, a town of Germany, in the circle of Weſtphalia, and biſhopric of Oſnabruck, 8 miles N. of Furſtenau.—Alſo, a town of Germany, in the duchy of Holſtein, 14 miles S. E. of Bramſtede.

BORSTLING, in *Ichthyology*, ſynonymous with barſling, or barſchling, the common perch, *perca fluviatilis*. See Marſigl. Danub.

BORSUC, in *Zoology*, the name of the badger, *urſus meles*, in Poland. The ſame animal alſo bears the names of *jazwice*, *koldziki*, and *zlik*, in that country.

BORSZEJOWKA, in *Geography*, a town of Poland, in the palatinate of Kiov; 10 miles W. of Kiov.

BORT, a town of France, in the department of the Correze, and chief place of a canton, in the diſtrict of Uſſel. The place contains 1792, and the canton 6563 inhabitants: the territory comprehends 140 kiliometres, and 10 communes: diſtant 4 leagues S. E. from Uſſel.

BORTHWICK, in *Topography*, a pariſh and village in the county of Edinburgh, Scotland, is noted in the hiſtoric page for a magnificent caſtle which was built here by William I. lord Borthwick, about the year 1430. In its complete ſtate it was very extenſive, and conſidered almoſt impregnable, but Oliver Cromwell laid ſiege to it in 1650, and forced the garriſon to ſurrender. "It is ſeated," obſerves Mr. Pennant, "on a knowl, in the midſt of a pretty vale, bounded by hills, covered with corn and woods; a moſt picturesque ſcene. It conſiſts of a vaſt ſquare tower, 90 feet high, with ſquare and round baſtions at equal diſtances from its baſe. The ſtate rooms are on the firſt ſtory, once acceſſible by a draw-bridge. Some of the apartments were very large; the hall 40 feet long, and had its muſic gallery; the roof lofty, and once adorned with paintings. This place was once the property of the earl of Bothwel, who, a little before the battle of Carbury hill, took refuge here with his fair conſort." The pariſh contains 200 houſes, and 668 inhabitants. Pennant's Tour in Scotland, 4to. vol. iii.

BORTZUTIM, a town of Tranſylvania, 12 miles N. of Clauſenburg.

BORUA, a town of Portugal, in the province of Alentejo, 2 leagues from Villa Vicioſa.

BORVIASIA, a town of Ruſſian Tartary, on the north ſide of the Don, 64 miles E. N. E. of Azof.

BORYSOW, a town of Lithuania, in the palatinate of Minſk, ſeated on the river Berezyna, 36 miles E. N. E. of Minſk. N. lat. 54°. E. long. 29° 5′.

BORYSTHENES, in *Ancient Geography*, a river of European Sarmatia, forming almoſt the whole weſtern boundary of Sarmatic Scythia. Its name is ſaid to be derived from the language of the Sclavi or Slaves, who, in their migration, blended themſelves with the Scythians. It ſignifies "a rampart formed by a foreſt of pines," being derived from *bor*, a foreſt of pines, and *ſtena*, a wall. As a confirmation of this etymology, it is alleged that the ſhores of the Boryſthenes are covered with foreſts of pines. Mela, deducing his deſcription of this river from Herodotus, (l. iv. § 53.) repreſents it as flowing through a country of the ſame name, and as the moſt pleaſant river of Scythia, more gentle in its courſe than any other, and affording water more agreeable to drink. He adds, that it enriched many pleaſant paſtures, and that it ſupplied very large fiſhes without bones. It flowed from diſtant and unknown ſprings, which lay, according to Ammianus, (l. xxii. c. 18.) in the mountains of the Nauri, and was navigable through a courſe of 40 days' ſailing; and in this interval received many large rivers. After its junction with the Hypanis, it diſcharged itſelf into the northern part of the Euxine ſea. It is now called *Dnieper* or *Nieper*, which ſee.—Alſo, a town of European Sarmatia. Stephanus Byz. repreſents it as a Greek city, being a colony of Mileſians, ſeated near the mouth of the river of the ſame name. By ſome it was called Boryſthenes, by its inhabitants *Olbia*, and by Pliny *Miletopolis*: probably the ſame that is now denominated *Oczakow*, which ſee.

BORYZA, a city of Pontus. Steph. Byz.

BORZA, in *Geography*, a town of Perſia, in the province of Aiderbeitzan, 80 miles S. of Tauris.

BORZINSKOI, a town of Siberia, on the Argun; 144 miles S. E. of Nertchinſk.

BOS, in *Antiquity*, was peculiarly uſed for an ancient Greek ſilver coin, which was *didrachmus*, or equivalent to two drachms.

Bos, Lambert, in *Biography*, an eminent philologiſt, was born at Worcum, in Holland, in 1760, and became Greek profeſſor at Franeker, in the exerciſe of which office he acquired great reputation, and where he died in 1717. His profound erudition is honourably mentioned by ſeveral writers, and particularly by Fabricius, and by Hemſterſhuſius in his oration "De linguæ Græcæ præſtantia." His treatiſe on the Greek ellipſes is held in high eſtimation by grammarians. His other principal works are, "A new edition, with additions, of the Greek grammar of Vilerus;" "an edition of the Septuagint, with prolegomena and various readings," 2 vols. 4to. Franek. 1709; "Thomæ Magiſtri eclogæ cum notis;" "Exercitationes Philologicæ, quibus Novi Fæderis loca nonnulla illuſtrantur," 1700 and 1713, 8vo.; "Myſterii Ellipſeos Græcæ expoſiti ſpecimen;" "Antiquitatum Græcarum deſcriptio;" and "Animadverſiones ad ſcriptores quoſdam Græcos." Nouv. Dict. Hiſt.

Bos, John Baptist Du, the ſon of a conſiderable merchant and magiſtrate of Beauvais, in France, was born at that place in 1670, and finiſhed his ſtudies at the Sorbonne. He afterwards became a diſtinguiſhed writer, and a member of the French academy. In 1695 he was one of the committee for foreign affairs under Mr. Torcy, and was afterwards charged with ſome important tranſactions in Germany, Italy, England, and Holland. After his return to Paris, he was made an abbé, and had a penſion. He was alſo choſen perpetual ſecretary of the French academy; and in this ſituation he died at Paris, March 23, 1742. His principal works are, "Critical reflections upon poetry and painting;" of which the beſt edition is that of Paris, 1740, 3 vols. 12mo.; "A critical hiſtory of the eſtabliſhment of the French monarchy among the Gauls," of which the beſt editions are thoſe of 1743, in 2 vols. 4to. and in 4 vols. 12mo.; "The intereſts of England ill underſtood in the preſent war," 1714; "The hiſtory of the four Gordians, confirmed and illuſtrated by medals;" and "The hiſtory of the league of Cambray, formed in 1708, againſt the republic of Venice," of which the beſt edition is that of 1728, in 2 vols. 12mo.

Bos, or Bosche, Jerom, an ancient painter, and engraver, was born at Bois-le-Duc, and took pleaſure in painting devils, witches, and enchantments. His pictures, diſtinguiſhed by the freedom of his touch, and the ſtrength of his colouring, are held in high eſtimation, though, from the nature of the ſubjects which he ſelected, they excite a degree of horror blended with admiration. The moſt remarkable painting of this maſter, among ſeveral others of a ſimilar kind, in which he indulges a wildneſs of imagination, is an allegory of the pleaſures of the fleſh; repreſenting the principal figure, drawn by monſtrous imaginary forms, preceded by demons, and followed by death. He was alſo an engraver, and the firſt artiſt who attempted to engrave in the groteſque ſtyle; and he is ſaid to have been more diſtinguiſhed by fertility of invention than by a correct judgment. The two plates, moſt deſerving of mention, are one repreſenting "St. Chriſtopher," carrying the infant Jeſus acroſs the water and bending under his load; on the left is a hermit, coming from his cell with a lanthorn, and the whole compoſition is ſurrounded with ſmall groteſque figures of all ſhapes, in the moſt ridiculous attitudes; and another is the "Laſt judgment," in which Chriſt appears ſeated on a rainbow, with two angels on each ſide and ſounding trumpets, having on their labels this inſcription, "Hic eſt dies quem fecit; ſurgite mortui, venite ad judicium;" and at the bottom are ſmall figures of men and devils of all ſhapes intermixed. To both theſe prints is affixed his name, "Boſche." He died in 1500. Pilkington and Strutt.

Bos, Lewis Janssen, or John Lewis de, a painter, was born at Bois-le-Duc, and having received inſtructions in painting from the artiſts of his native city, he applied himſelf to ſtudy after nature, and became eminent for the truth of his colouring, and the neatneſs of his handling. His favourite ſubjects were flowers and curious plants, which he grouped in vaſes of glaſs or cryſtal, half filled with water, and to which he gave a peculiarly natural and pleaſing appearance. He alſo exhibited on the leaves of his ſubjects the drops of dew with ſingular tranſparency, and embelliſhed them with butterflies, bees, waſps, and other inſects, in a manner ſuperior to that of any co-temporary artiſts. In the ſtyle of his portraits he was no leſs excellent than in his compoſition of ſtill life. He died in 1507. Pilkington.

Bos, in *Zoology*, the *Ox*, a genus of animals in which the horns are concave, or hollow, turned outwards, lunated and ſmooth; front teeth in the lower jaw eight; canine teeth or tuſks none.

There are but few ſpecies of this tribe that appear to be really diſtinct; but the number of varieties into which they are divided, ariſing from the differences of climate, domeſtication, and other cauſes, are endleſs. They are a moſt valuable race of animals to mankind, their fleſh and milk affording excellent nutritious food: they are uſeful as beaſts of burthen; and their hides ſerve many domeſtic purpoſes. The ſpecies are Taurus, or the common ox, which comprehends the varieties of *ferus* and *domeſticus*, *Americanus*, *moſchatus*, *grunniens*, *bubulus*, *caffer*, according to Gmelin. To theſe are added, by later writers, the *Bos arnee* of Kerr; the *Baas* of the Cape; with the *Dwarf ox* of Africa, under the names of *Bos barbatus*, and *pumilus*; which ſee.

Bos *ſtrepticeros*, Aldrovandus. See Strepsiceros *bos*.

BOSA, in *Geography*, a maritime and epiſcopal town of Sardinia, ſituate on the weſtern coaſt of the iſland, near a river of the ſame name. It is defended by a caſtle, and has a good fort; diſtant 18 miles S.S.W. from Algferi, and 36 S. S. W. of Saſſari, to which it is ſuffragan. N. lat. 40° 18'. E. long. 8° 34'.

BOSARA, in *Ancient Geography*, a town of Arabia Felix, according to Ptolemy.

BOSARADDAHEBA, or Jesardecheb, a town of Aſia, in the province of Sableſtan; 21 leagues S. of Candahar.

BOSBOCK, Boſboc, Bouc des Bois, and Forest Antilope, in *Zoology*, the name of Antilope Sylvatica (*Gmel.*) by different writers. See Sylvatica.

BOSC, Claude Du, in *Biography*, an engraver, was a native of France, and being invited to England by Nicholas Dorigny, aſſiſted him for ſome time in engraving the cartoons of Raphael; and afterwards ſeparating from Dorigny, he undertook to engrave the cartoons for the printſellers. He alſo engraved the duke of Marlborough's battles, for which he received 80l. per plate; and, aſſiſted firſt by Du Guernier, and afterwards by Beauvais and Baron, he completed them within two years in 1717. He then became a print-ſeller, and publiſhed, by ſubſcription, the tranſlations of Picart's Religious Ceremonies. As an engraver, he poſſeſſed no great merit: his ſtyle is coarſe and heavy, and the drawing of the naked parts of the figure in his plates is very defective. However, he engraved from ſeveral great maſters. The "Continence of Scipio," from a picture of Nicholas Pouſſin, in the Houghton collection, is one of his plates. He flouriſhed in 1714. Strutt.

Bosc, Peter Du, an eminent proteſtant preacher of France, was born at Bayeux in 1623, educated at Montauban and Saumur, and in 1642 ordained one of the miniſters of Caen. The fame of his eloquence was very extenſive; and he was warmly ſolicited by the churches of Charenton and Paris to become their paſtor, but he preferred continuing at Caen. His reputation excited envy and alarm; and he was falſely charged with having uſed offenſive language with regard to auricular confeſſion, and on this charge exiled to Chalons. But his talents and character were held in ſuch high eſtimation, that powerful interceſſion was made in his favour, ſo that he was permitted to return in the ſame year, 1664, to Caen. His return was the occaſion of very general rejoicing among perſons of all parties; and it was celebrated in a very ſingular manner by a Catholic of free character, who invited two Franciſcans to an entertainment, and urged drinking to ſuch a degree, that one of them died on the ſpot. Next day he paid his reſpects to M. Du Boſc, and informed him, "that he had thought it his duty to ſacrifice a monk to the public joy; that the offering would have been more ſuitable if it had been a Jeſuit, but he hoped it would not be unacceptable, though only a Franciſcan." M. Du Boſc was ſelected, on account of his diſtinguiſhed character and addreſs, to draw up remonſtrances againſt the ſeverities which were exerciſed by the Catholics againſt the Proteſtants; and on all occaſions he expreſſed ſuch loyalty to the king, and ſuch a diſpoſition to ſubmit to civil authority, that he frequently ſucceeded in obtaining relief, and in checking the rage of perſecution. At length, however, viz. in 1665, the violence of the adverſaries of the Proteſtants became irreſiſtible, and the parliament of Normandy iſſued an arret, which prohibited Du Boſc from the exerciſe of his miniſtry. Upon this he retired to Holland, and diſcharged the duties of his miniſterial office at Rotterdam, till his death, which happened in 1692. During his life he printed two volumes of ſermons; and after his death, his ſon-in-law, M. le Gendre, publiſhed a collection of public papers, ſpeeches, letters on theological ſubjects, Greek, Latin, and French verſes, &c. Gen. Dict.

Bosc, Hippolitus, taught anatomy and medicine at Ferrara, towards the end of the 16th century. He was alſo a diſtinguiſhed practitioner of ſurgery. His works are "De vulneribus a bellico fulmine illatis," Ferrariæ, 1596, 4to. He attributes the principal part of the miſchief in gun-ſhot wounds to the heat of the ball. "De læſione motus digitorum, et macie brachii." This was publiſhed by J. Lauterbach, in his Concilia, at Francf. in 1605, 4to. "De curandis vulneribus capitis, brevis methodus," Ferr. 1609, 4to.; "De facultate anatomica, lectiones viij, cum quibuſdam obſervationibus," 1600, 4to.; a judicious and uſeful compendium, interſperſed with ſome valuable notes and obſervations by the author. Haller. Bib. Anat. et Chirurg.

Bosc, or Boscius, Ignatius, publiſhed at Ingoldſtadt, 1580, 4to. "De lapidibus qui naſcuntur in corpore humano ac precipuè renibus, ac veſica, et ipſorum curatione." Ibid.

BOSCAGE, denotes a place ſet with trees, a grove, or thicket.

Boscage, *boſcagium*, from Ital. *boſco*, wood, in a *Law ſenſe*, ſignifies maſt or ſuch ſuſtenance as woods and trees yield to cattle.

According to Manwood, to be quit *de boſcagio*, is to be diſcharged from paying any duty of wind-fall wood in the foreſt.

Boscage, among *Painters*, is ſaid to denote a picture or landſcape repreſenting much wood and trees.

Boscage ſometimes denoted a tax or duty laid on wood brought into the city.

BOSCAGER, John, in *Biography*, an eminent French lawyer, was born at Beziers in 1601, and removing at an early age to Paris, officiated for his uncle, La Foret, during his illneſs, as teacher of law, when he was only 22 years old. After having acquired great reputation at the univerſity of Padua, he ſucceeded his uncle, and occupied his chair till his death. His mode of inſtruction manifeſted an accurate and comprehenſive judgment; for he reduced all law to certain principles or definitions, from which he deduced conſequences, that compriſed all the particulars of each topic. Some Latin treatiſes, which he compoſed, were tranſlated into French, at the requeſt of Colbert, and publiſhed under the title of "Inſtitute of the Roman and French law, with remarks by Francis de Launay," 4to. 1686. Another work was publiſhed after his death, entitled, "De Juſtitia et Jure," 12mo. 1689. His death happened by a fall into a ditch, from which he could not extricate himſelf, after he had attained the age of 87 years. Moreri.

BOSCAN, Mosen Juan Almogavar, a reformer of Spaniſh poetry, was born at Barcelona towards the cloſe of the 15th century. By the advice of Andrew Navagero, ambaſſador from Venice to Charles V., he attempted to introduce into the Spaniſh poetry, which was before harſh and barbarous, the Italian meaſures and taſte; and he was the firſt, who, with the aſſiſtance of his intimate friend, Garcilaſo de la Vega, ſucceeded in the attempt. A collection of the works of theſe coadjutors was publiſhed together in 1544. Garcilaſo's teſtimony to his genius and virtue is thus tranſlated by Mr. Southey:

"Then hand in hand
A youth approached, with Phœbus; in his face
The ſkilful eye might read benevolence
And wiſdom; he was perfected in all
The love and various arts of courteſy
That humaniſe mankind; the graceful port,
And the fair front of open manlineſs
Diſcovered Boſcan; and that fire illumed
His generous face, that animates his ſong,
With never-fading ſplendour there to ſhine."

Boſcan is ſaid to have poſſeſſed more learning than taſte, and more taſte than genius. Without being ſublime, ſome of his turns are neat and ingenious. In proſe he tranſlated the courtier of Caſtiglioni. He died in 1542 or 1543. Moreri. Gen. Biog.

BOSCAWEN, in *Geography*, a townſhip of America, in Hillſborough county, New Hampſhire, ſeated on the weſtern bank of Merrimack river, above Concord; 43 miles N.W. from Exeter. It contains 1108 inhabitants; and in its vicinity are the Boſcawen hills.

Boscawen's *Iſland*, a name given by captain Wallis, in 1767, to an iſland in the Southern Pacific Ocean; called by the natives, "Kootahē." It is ſeparated from Keppel's iſland, called "Neootabōotaboo," by a channel 3 miles broad. They are both ſituate in S. lat. 15° 5'. W. long. 173° 48'. Kootahē is very lofty, of a conical form, between two and three miles in diameter, and lies N.E. from the other. Both are populous and fertile. They were diſcovered by Schouten and le Maire, May 10, 1616. Schouten, who, after bartering with the natives for cocoa-nuts, in return for nails and beads, was attacked by them from their canoes, called them Traitors' and Cocoa iſlands, in conſequence of the reception he met with. Captain Wallis exchanged with the inhabitants of Neootabōotaboo ſome nails for fowls, fruit, and one of their clubs. Perouſe ſaw Kootahē, Dec. 20, 1787, and having examined both the iſlands, lay to in a bay upon the weſt coaſt of the larger diviſion of Neootabōotaboo. The natives brought off the fineſt cocoa nuts he had ever ſeen, with other vegetables, as well as ſome fowls and a hog; they ſeemed to manifeſt no apprehenſion, and traded very freely. They reſembled the more ſouthern iſlanders in every thing, except that their looks indicated a ferocity, like that which characterizes their northern neighbours. A rocky bank, two or three leagues N. of Kootahē, was found in 1616, covered with 14 fathoms of water. Miſſionary Voyage, Introd. p. 67.

BOSCH, Balthasar Vanden, in *Biography*, a painter of converſations and portraits, was born at Antwerp in 1675, and firſt ſtudied, after the manner of Teniers, thoſe ſubjects which were apartments decorated with buſtos, vaſes, pictures, and other curioſities; but in proceſs of time he employed his pencil on ſubjects of a more elegant and elevated kind, and acquired a ſuperior ſtyle of performance. He alſo painted portraits with great reputation, and particularly a portrait of the duke of Marlborough on a horſe, painted by Van Bloemen. His paintings fetched an extravagant price, exceeding that produced by the performances of Teniers or Oſtade, with which they cannot, in reality, pretend to any competition. His pencil is light, his touch ſpirited, and his figures, more elegant than thoſe of moſt of his contemporaries, are dreſſed in the mode of the time. In ſome of his works the compoſition and deſign, and alſo the colouring are very good, and the ſubjects are judiciouſly choſen. He died in 1715. Pilkington.

Bosch, Jacob Vanden, a painter of ſtill life, was born at Amſterdam in 1636, and painted ſummer fruits of various kinds with a neat pencil, and with ſuch an exact imitation of nature, that they appeared delicious, and almoſt real. He died in 1676. Pilkington.

BOSCHADIS, in *Zoology*, a ſpecies of Echinorhynchus, that infeſts the inteſtines of the domeſtic duck. The neck is filiform, and the proboſcis ſlightly echinated. Goeze Eingew.

BOSCHAS, Anas Boſchas, in *Ornithology*, the *Common Mallard*, or *Wild Duck*, the ſpecifical diſtinction of which conſiſts in the plumage being of a cinereous colour; the tail feathers (of the male) recurvate; bill ſtraight; collar white. Linn. Fn. Suec. &c.

Gmelin mentions ſeveral diſtinct varieties of this bird, in the Syſt. Nat. the characters of which are deſcribed as follows:—*Cirrhata*, above grey, beneath white, creſt cinereous; *perſica*, head and upper parts of the neck cinereous, beneath yellowiſh; *major*, back ſooty. This is larger than the others, meaſuring two feet and a half in length. *Griſea*, entirely cinereous, with the legs and bill black; *nævia*, with the back black, ſpotted with yellowiſh; *nigra*, having the head and collar black.

The natural hiſtory of the wild duck is detailed ſo amply by different writers, that nothing new remains to be added by us. Dr. Latham, in particular, has entered at great length in his judicious compilation on this ſubject. The wild ducks, obſerves this writer, are frequent in many parts of England, but no where in more plenty than in Lincolnſhire, where prodigious numbers, according to Mr. Pennant, are taken annually in the decoys, each decoy paying from five pounds to twenty, annual rent. In Somerſetſhire the rental of a decoy yearly has been known to amount to even thirty pounds.

With us theſe birds pair in the ſpring. They breed in all the low marſhy grounds, laying from ten to ſixteen eggs. It is obſerved of the young, that they always take to the water as ſoon as they are hatched. The old birds are very artful. They do not conſtantly build their neſt cloſe to the water, but many times at a diſtance from it; in which caſe the female takes the little brood in its beak, or between its legs, one or two at a time, to the water ſide, and going into it herſelf, the young ones follow inſtinctively. Wild ducks are known ſometimes to lay the eggs in a high tree, in the deſerted neſt of a crow or a magpie. Dr. Latham ſpeaks of an inſtance that took place at Etchingham, in Suſſex, in which the female was found ſitting upon nine eggs, in an oak twenty-five feet from the ground. The eggs were ſupported by ſome ſmall twigs laid croſsways.

In England only a comparatively ſmall number of wild ducks are found in the ſummer; becauſe, at that time, they remain in the more northern parts of Europe, and only return to us towards the winter. In France this ſpecies is not often ſeen till the winter; appearing in October, and again departing northward in the ſpring. They are caught in that country, as with us, in decoys, the chief of which are in Picardy, where prodigious numbers are taken, eſpecially on the river Somme. They have alſo another method: a ſportſman, with a cage of tame decoy ducks, takes his ſtation in a certain place, near which, it is conceived, the flock will paſs. If they approach ſo near as to allow him to fire, he takes them with little trouble; but if otherwiſe, he lets fly one of the tame decoy ducks, then a ſecond, and ſo on: theſe tame birds entice the wild ducks in ſmall parties within reach of the ſportman's fowling-piece, who is thus enabled to kill ſix or ſeven birds at every ſhot. They are now and then taken alſo by means of a hook, baited with a bit of ſheep's lights, which, ſwimming on the water, the bird ſwallows the bait, and hook with it. Divers other methods of catching the wild duck are peculiar to different nations, of which one ſeems worth mentioning, on account of its ſingularity; and this is the practice in India. The perſon wiſhing to take theſe, wades into the water up to the chin, and having his head covered with an empty calabaſh, approaches the place where the ducks are; when they, not regarding an object of this ſort, ſuffer the man freely to mix with the flock; after which he has only to pull them by the leg under the water, one after another, till he is ſatisfied; returning as unſuſpected by the remainder as when he firſt came among them. This mode of capture is common on the river Ganges, only that the duck-hunters uſe the earthen veſſels of the gentoos, inſtead of calabaſhes. Theſe veſſels are what the gentoos boil their rice in, and are called kutcharee pots, which, after being once uſed, they look upon as defiled, and in conſequence throw them into the river as uſeleſs. The ducks, from conſtantly ſeeing theſe veſſels float down the ſtream, regard them as little as the calabaſhes; and the duck-hunter, concealing his head in one of them, can ſeize upon them without exciting the leaſt ſuſpicion. A ſimilar method is alſo practiſed in China, and in South America, to take the wild duck.

Boschas, *Anas fera ſive Boſchas mexicana.* Briſs. A ſynonym of Anas Clypeata, the Shoveler, var γ. See Clypeata.

Boschas, *Boſchas Bellonii.* The Garganey. Anas Querquedula is called by this name, both in Geſner's birds, and the Ornithology of Aldrovandus.

BOSCHI, Bosch, or Bosco, in *Geography*, a town of Italy, in the Alexandrin of the Milaneſe, ſeated on the river Orbe, five miles E. from Alexandria.

BOSCIA, in *Botany*, (in honour of Boſc, author of part of the Zoological and Botanical articles in "Nouveau Dictionaire d'Hiſtoire Naturelle," now publiſhing at Paris.) Willden. 266. Claſs, *tetrandria trigynia.* Gen. Char. *Cal.* perianth, four-toothed. *Cor.* four-petalled. *Pericarp*, capſule, four-celled.

Species B. *undulata*, Thunberg, "Leaves oppoſite, lanceolate, waved." A ſhrub. Native of the Cape of Good Hope.

Boscia. La Mark (Illuſt. Pl. 395.) Claſs, *dodecandria monogynia.* Gen. Char. *Cal.* perianth, four-leaved. *Cor.* none. *Stam.* filaments long; anthers didymous. *Piſt.* germ on a pedicle, as long as the filaments; ſtyle, none; ſtigma pointed. *Pericarp*, a nut. *Seed*, one.

Species B. A ſhrub. *Leaves*, oblong-ovate, alternate, on ſhort petioles, ſtrongly reticulated, coriaceous. Flowers in a terminating corymbus. A native of Africa, in the neighbourhood of Goree, where the negroes eat the kernel of the nut. This plant does not appear to be known to Willdenow. It will, doubtleſs, ſoon receive another name, as Thunberg's plant ſeems to have got the firſt poſſeſſion.

BOSCHIUS, John, in *Biography*, a native of Liege, of conſiderable learning and abilities, was invited, in 1558, to the chair of profeſſor of medicine, at Ingolſtadt, which he held with credit ſeveral years. His works are, "De peſte liber," publiſhed originally in German, in 1562, 4to.; "Concordia philoſophorum, ac medicorum, de humano conceptu, atque fœtûs incremento, animatione, mora in utero, ac nativitate," Ingolds. 1576, 4to. and 1588; "Oratio de optimo medico, et medicinæ auctoribus, inter orationes Ingoldſtadienſes." Haller Bib. Anat.

BOSCO, in *Law.* See Attachiamenta *de boſco et ſpinis.*

BOSCOBEL, in *Topography*, in the pariſh of Donrington, in Shropſhire, is a place memorable in Engliſh hiſtory, for the oak tree, wherein king Charles the Second ſecreted himſelf, after the deſperate battle at Worceſter. Finding it impracticable either to eſcape into Wales, or to reach the metropolis in ſafety, and knowing that many of his enemies were ſearching for him, in the immediate neighbourhood, he was prevailed on by major Carleſs (who accompanied him) to ſeek protection in a large oak tree. Here they ſeated themſelves one whole day, and ſaw ſome of Cromwell's ſoldiers ſeeking for the king in an adjoining wood. After the reſtoration, this tree became highly venerated, and numerous perſons went on pilgrimage to ſee it. A great part of it was cut away, and converted into tobacco ſtoppers, hafts of knives, and other memorials; and many plants were propagated from its acorns. Its remains are incloſed with a brick wall, the inſide of which is covered with laurel. The 29th of May, the day of his birth, and of his reſtoration, is ſtill commemorated in England, by an annual feſtival and holiday; and various claſſes of the community diſplay branches, leaves, and apples of the oak tree. Near Boſcobel is Whiteladies, ſo named from being a nunnery of white, or Ciſtercian nuns. The ruins of this are ſtill conſiderable, and the church is ornamented with circular arches, &c. Gough's Edition of Camden's Britannia, vol. ii. Carte's Hiſtory of England, vol. iv. Granger's Biographical Hiſtory of England, vol. iii.

BOSCOI, or Bosci, in *Eccleſiaſtical Hiſtory*, denotes a ſpecies or tribe of monks in Paleſtine, who fed on graſs, like the beaſts of the field.

The word is Greek, βοσκοὶ, q. d. *grazers*; formed from βοσκω, *paſco*, *I feed.*

The Boſcoi are ranked among the number of Adamites, not ſo much on account of their habit as food. They took no care about proviſion; but when eating-time came, or any of them were hungry, went into the fields, with each his knife in his hand, and gathered and eat what he could find.

BOSCOLI, Andrea, in *Biography*, an hiſtorical painter, was born at Florence, in 1553, and educated under Santi di Titi. He was the firſt perſon who had a juſt notion of the chiaro-ſcuro, and uſed it ſucceſsfuly in the Florentine ſchool; where, though it had been happily practiſed by Giorgione, at Venice, and alſo by Titian, it was not well underſtood before his time. He poſſeſſed great freedom of hand, and gave a ſurpriſing force of colour; and both in deſign and compoſition the grandeur of his ſtile reſembled that of his maſter. He ſtudied after nature; and in his travels he drew ſketches of any particular objects that ſtruck him; but purſuing this practice at Loretto, with regard to the fortifications of the city, he was ſeized by the officers of juſtice, and condemned to be hanged; but he happily eſcaped, within a few hours of execution, by the interpoſition of ſignior Bandini, who explained to the chief magiſtrate his innocent intention. He was alſo an engraver; but the ſubjects of his plates are not ſpecified either by Marolles or Florent le Comte. He died in 1606. Pilkington.

BOSCOVICH, Roger Joseph, an eminent mathematician and natural philoſopher, was born of very reſpectable parents, in the free city of Raguſa, on the coaſt of Dalmatia, the 18th of May 1711. He was the youngeſt of nine children, and his mother lived to the extraordinary age of 103. Six ſons received the beſt education that their father's circumſtances could afford; and all of them, particularly the eldeſt, who became a prieſt, were diſtinguiſhed by a happy vein for poetry. Having finiſhed his grammatical courſe with applauſe, the young Boſcovich prompted by the example of his brother, in his fifteenth year took the habit of the noviciate, and entered the Jeſuits' college at Rome. There the original bent of his genius diſcovered itſelf, by the enthuſiaſtic ardour with which he plunged into the ſtudy of the mathematics. His progreſs in that important branch of knowledge was ſo rapid as to aſtoniſh, and ſoon out-run his preceptors. Under their inſtruction he acquired the elements of geometry and algebra, but was left to the exerciſe of his own application in proſecuting the higher parts of mathematics. He ſtudied by himſelf the principles of the differential calculus; and thus prepared, he began the *Principia* of Newton, and devoured that immortal work with the moſt eager avidity. He was tranſported by the vaſt diſplay of new and ſplendid truths which were unveiled; and while, with the torch of geometry, he traced the ſecret links of nature's operations, and ſeemed to penetrate the counſels of heaven, he felt his paſſion for diſtinction wonderfully inflamed: nor, in the warmth of his temper, could he ſuppreſs the movements of ſelf-gratulation, which the conſciouſneſs of his powers and acquirements excited in his breaſt. By his perſuaſion, Noceti, his maſter in philoſophy, was induced to reprint a ſmall poem on the rainbow, and another on the aurora borealis, both of which Boſcovich enriched with ingenious notes and illuſtrations. The publication of this tract ſpread his fame beyond the precincts of the college, and beyond the Alps. Mairan, whoſe opinion concerning the aurora borealis he had eſpouſed, noticed it with loud commendation, in the ſecond edition of his diſſertation; and the praiſes beſtowed by the French philoſopher, with the title conferred on him of correſpondent of the Academy of Sciences, could not fail to prove highly gratifying to his youthful vanity.

After Boſcovich had completed the uſual courſe of philoſophy, he was obliged, by the rules of the inſtitution, to teach grammar and the claſſics; but he never loſt ſight of his favourite ſtudies, and he was invited by his mathematical maſter, to defend annual theſes, and deliver public diſſertations on ſuch ſubjects as occaſion ſuggeſted. Theſe being printed in ſucceſſion, extended farther his reputation. The firſt appeared in 1736, and contained a theory of the ſolar ſpots, very ſimilar to that which was afterwards ſo ingeniouſly ſupported by profeſſor Wilſon, of Glaſgow. It ſuppoſes the ſun to have two atmoſpheres, the lower being denſe, and ſometimes ſprinkled with clouds; the upper rare, and ſubject to variation of height. Next year produced two diſſertations; one on the tranſit of Mercury, and another on a remarkable aurora borealis.

Five years had Boſcovich ſpent in the drudgery of teaching Latin, and three more were conſumed in the unprofitable ſtudy of ſcholaſtic theology, when, by a very ſingular indulgence, he was exempted by his ſuperiors from the fourth year's attendance, and permitted to relinquiſh that dark and thorny path, and thenceforth employ his talents in exploring Nature's wide domain. His ſituation now, as ſupernumerary prefect of the Roman College, was entirely ſuited to his taſte. To communicate mathematical inſtruction was to him a delightful taſk; and he prepared, for the uſe of his pupils, a ſhort ſyſtem of geometry, which compriſed all the capital truths of that ſcience in fourteen propoſitions. In the ſelection of the materials, in their diſpoſition and arrangement, he exhibited the clearneſs, the preciſion, and noble elegance, formed after the model of the ancients. He compoſed the elements of trigonometry with the ſame purity of taſte. But the capital part of the ſyſtem, his theory of the Conic Sections, was reared by repeated efforts, and at diſtant intervals, and was not publiſhed until the year 1755. Boſcovich conſidered theſe curves as deſcribed in *plano*, and aſſumed, for his generic definition, the beautiful property of the *directrix*, which is common to them all, the parabola being only its ſimpleſt caſe. In the ellipſe, the ratio of a line, drawn from any point to either of the *foci*, is to a perpendicular from the ſame point to the *directrix*, in the ratio of a leſs to a greater; in the hyperbola, it is that of a greater to a leſs. But the author did not ſtop here; he likewiſe inveſtigated the properties derived immediately from the ſection of the cone. He ſuppoſed it cut by a moveable plane, and ſhowed how the ſeveral curves would thence be ſucceſſively produced. The ſame luminous idea he transferred to the cylinder, the ſpheroïd, and the conoids. His imagination loved to contemplate the fine mutation and tranſition of mathematical figure, and to trace the ſeries of ſucceſſive, yet apparently connected changes, which have ſuggeſted the *law of continuity*. On that metaphyſical principle, as elucidated by the transformation of geometrical *loci*, he gave an exquiſite diſſertation. Other diſſertations, remarkable for their ingenuity, were ſucceſſively delivered to a crowded audience, at the annual examination of his ſchool. Theſe treated on various difficult points in geometry, aſtronomy, and optics; on oſculating circles, the nature of infiniteſimals, trajectories, the inequality of gravity over the earth's ſurface, the centre of magnitude, the laws of bodies, living forces, the flux and reflux of the ſea, the annual aberration of the fixed ſtars, the limits of aſtronomical obſervations, the uſe of lenſes and dioptric teleſcopes, and a new method of employing the obſervation of the phaſes in lunar eclipſes, on the determination of a planet's orbit, by help of catoptrics, and on the atmoſphere of the moon, which he held to be very different from that of the earth, and more analogous to water. In one of theſe diſſertations, he pointed out a miſtake of the famous Daniel Bernouilli, who had haſtily concluded, that the tides of the atmoſphere muſt riſe higher, in proportion to its rarity, than thoſe of the ocean; in another, he ſhewed that the queſtion, concerning the meaſure of forces, which then ſo vehemently agitated the ſcientific world, as it generally happens, was merely a diſpute of words; in a third, he ſketched the outlines of that bold ſtructure, which has obtained ſuch deſerved celebrity among the learned—his ſublime theory of the conſtitution of matter.

While Boſcovich was thus uſefully and honourably engaged in directing the ſtudies of youth, and enlightening the learned world by his elegant and ingenious writings, the pleaſure of his converſation was eagerly courted at Rome. In every houſe of note he was always a moſt welcome gueſt, and he reigned in every ſociety by the aſcendancy of his talents. Before mixed companies he would freely talk of his own ſpeculations, which he had a ſingular felicity in rendering intelligible and intereſting to the moſt ordinary minds; and though, on theſe occaſions, he was not accuſtomed to conceal his inward ſatisfaction, or decline beſtowing upon himſelf the merited encomiums, theſe frequent ſallies of vanity ſeemed to flow merely from the warmth of his character, and were effaced in the general blaze of admiration entertained for his ſuperior talents. Nor was his ambition confined within the circle of abſtract ſcience; indulging the excurſive flights of fancy, he often ſacrificed to the Muſes. He compoſed Latin verſes, on a great variety of ſubjects, and which conſequently poſſeſſed very different degrees of merit. Every occurrence he was ready to ſeize, whether public or private, ſerious or comic; wars, nuptials, jocular and domeſtic incidents, were all indiſcriminately his theme. He had a wonderful knack in compoſing thoſe verſes, with a memory not leſs aſtoniſhing for retaining them; and at the tables of his friends he took pleaſure in reciting elaborate paſſages. Surrounded by his diſciples and partial admirers, the ſort of idolatry which he received appears, however, to have had rather an unfortunate effect on his character, by tempting him to overrate the meaſure of his powers, and extent of his attainments. Once, and once only, he entered the liſts with his illuſtrious contemporaries. It was in anſwer to the queſtion, propoſed by the Academy of Sciences at Paris, to determine the inequalities produced by the mutual action of Jupiter and Saturn, eſpecially near the time of their conjunction. His memoir was returned with much commendation, and very few mathematicians aſſuredly would have felt themſelves lowered in yielding the premium to the great Euler. But Boſcovich was piqued at what he conceived to be an unfair deciſion, and would never afterwards engage in any public competition.

A philoſopher, reſiding in Rome, amidſt the venerable remains of ancient ſplendour, was powerfully drawn to examine thoſe monuments. Boſcovich wrote ſeveral diſſertations on the ſubject of antiquities, two of which were printed, and the reſt circulated in manuſcript. His zeal, activity, and fondneſs of applauſe, rendered him at all times acceſſible, and in a multitude of caſes, his advice was ardently ſought by individuals. Benedict XIV. a great patron of learned men, and his enlightened miniſter, cardinal Valenti, conſulted him on various important objects of public economy, the clearing of harbours, and the conſtructing of roads and canals. On one occaſion, he was joined in a commiſſion with other mathematicians and architects, invited from different parts of Italy, to inſpect the cupola of St. Peter's, in which a crack had been diſcovered. They were divided in opinion; but the ſentiments of Boſcovich, and of the marquis Poleni, prevailed. In ſtating, however, the reſult of the conſultation, which was to apply a circle of iron round the building, Poleni forgot to refer the idea to its real author, and this omiſſion grievouſly offended the Raguſan geometer. Other incidents had concurred to mortify his pride: he became at laſt diſguſted with his ſituation, and only looked for a convenient opportunity of quitting Rome. While in this temper of mind, an application was made by the court of Portugal, to the general of the Jeſuits, for ten mathematicians of the ſociety to go out to Brazil, for the purpoſe of ſurveying that ſettlement, and aſcertaining the boundaries which divide it from the Spaniſh dominions in America. Wiſhing to combine with that object the menſuration of a degree of latitude, Boſcovich offered to embark in the expedition, and his propoſition was readily accepted. But cardinal Valenti, unwilling to forego the luſtre reflected by a man of ſuch diſtinguiſhed abilities, commanded him, in the name of the pope, to diſmiſs the project, and perſuaded him to undertake the ſame ſervice at home in the Papal territory. In this fatiguing, and often perilous operation, he was aſſiſted by the Engliſh Jeſuit, Mayer, an excellent mathematician, and was amply provided with the requiſite inſtruments and attendants. They began the work about the cloſe of the year 1750, in the neighbourhood of Rome, and extended the meridian line northwards, acroſs the chain of the Appennines as far as Rimini. Two whole years were ſpent in completing the various meaſurements, which were performed with the moſt ſcrupulous accuracy. In the intervals, while this great work was carrying on, the active diſpoſition of Boſcovich ſought amuſement and occupation in other purſuits. At night he was buſy in drawing out his Elements of Conic Sections; and in the mornings and evenings, during his excurſions to and from the remote ſtations among the mountains, he compoſed on horſeback the greater part of his elegant Latin poem on *eclipſes*. This ſingular fact reminds us of what is reported of the late Dr. Darwin, who is ſaid to have framed, in his mind, the beautiful and harmonious epiſodes of the *Botanic Garden*, while driving in his chariot, on viſits to his country patients.

This important operation of meaſuring two degrees on the ſurface of Italy, is elaborately deſcribed by Boſcovich in a quarto volume, written in his uſual diffuſe manner, and full of illuſtration and minute details. But the book is rendered the more valuable by the addition of ſeveral opuſcules, or detached eſſays, relating to the ſubject, and which diſplay great ingenuity, conjoined with the fineſt geometric taſte. We may inſtance, in particular, the diſcourſe on the rectification of inſtruments, the elegant ſynthetical inveſtigation of the figure of the earth, deduced both from the law of attraction and from the actual meaſurement of degrees, and the nice remarks concerning the curve and the conditions of permanent ſtability. This laſt tract gave occaſion, however, to ſome ſtrictures from D'Alembert, to which Boſcovich replied, in a note annexed to the French edition of his works.

The arduous ſervice which Boſcovich had now performed was but poorly rewarded. From the pope he received only a hundred ſequins, or about forty-five pounds ſterling, a gold box, and *abundance of praiſe*. He now reſumed the charge of the mathematical ſchool, and beſides diſcharged faithfully the public duties of religion, which are enjoined his order. A trifling circumſtance will mark the warmth of his temper, and his love of precedence. He had recourſe to the authority of cardinal Valenti, to obtain admiſſion into the oratory of Caravita, from which his abſence excluded him, and which yet did afford only the benefit of a free, but frugal ſupper. In preſiding at that ſocial repaſt, the philoſopher relaxed from the ſeverity of his ſtudies, and ſhone by his varied, his lively, and fluent converſation. He lived in habits of intimacy with his colleagues, and eſpecially with his compatriot, Benedict Stay, known to the learned world by an excellent didactic poem, entitled "Philoſophia Recentior," and which he elucidated by notes, containing, in a very neat compreſſed form, the elements of mechanics.

At this time a diſpute aroſe between the little republic of Lucca, and the government of Tuſcany, on the ſubject of draining a lake. A congreſs of mathematicians was called, and Boſcovich repaired to the ſcene of contention, in order to defend the rights of the petty ſtate. Having waited three months in vain, expecting the commiſſioners, and amuſed with repeated hollow promiſes, he thought it better for the intereſt of his conſtituents, to proceed at once to the court of Vienna, which then ſupremely directed the affairs of Italy. The flames of war had been recently kindled on the continent of Europe, and Boſcovich, like a true courtier, took occaſion to celebrate the firſt ſucceſſes of the Auſtrian arms, in a poem, of which the firſt book was preſented to the Empreſs Thereſa; but the military genius of Frederic the Great of Pruſſia ſoon turned the ſcale of fortune, and our poet was reduced to ſilence. More honourably did he employ ſome leiſure in the compoſition of his immortal work, "Theoria philoſophiæ naturalis reducta ad unicam legem virium in naturâ exiſtentium," printed at Vienna in the year 1758. This he drew up, it is alledged, in the very ſhort ſpace of thirty days, having collected the materials a conſiderable time before; yet we muſt regret the appearance of haſte and diſorder, which deforms a production of ſuch rare and intrinſic excellence.

After a ſucceſsful ſuit of eleven months at Vienna, Boſcovich returned to Rome, and received from the ſenate of Lucca, for his zealous ſervices, the handſome preſent of a thouſand ſequins, or about 450*l.* Thus provided with the means of gratifying his curioſity, he deſired and obtained leave to travel. At Paris he ſpent ſix months, in the ſociety of the eminent men, who then adorned the French capital; and, during his ſtay in London, he was elected, in 1760, a fellow of the Royal Society, and he dedicated to that learned body his poem on *eclipſes*, which contains a neat compendium of aſtronomy. The expectation of the ſcientific world was then turned to the tranſit of Venus, calculated to happen in the following year. Boſcovich, eager to obſerve it, returned through Holland and Flanders to Italy, and joined his illuſtrious friend, Correr, at Venice, from whence they ſailed to Conſtantinople, having, on their way, viſited the famous plain of Troy. In Turkey, he ſcarcely enjoyed one day of good health, and his life was repeatedly deſpaired of by the phyſicians. After ſpending half a year in this miſerable ſtate, he returned in the train of ſir James Porter, our ambaſſador at the Porte; and having traverſed Bulgaria, Moldavia, and part of Poland, his intention was to penetrate into Ruſſia, if the agitation which there prevailed, on the *ſudden* death of Peter, had not deterred him from executing the project. The diary of his journey, which he publiſhed in Italian and French, is but a poor book, full of pedantry, and patched up of trifling and inſipid remarks. Yet ſuch were his pride and blind partiality, that he regarded, with contempt, the wholeſome criticiſms to which it gave occaſion. Boſcovich began his travels at too late a period of life to profit much by them.

At Rome his arrival was welcomed, and he was again conſulted on various plans of public improvement. But in the ſpring of 1764, he was called by the Auſtrian governor of Milan, to fill the mathematical chair in the univerſity of Pavia. The honours which he received provoked the jealouſy of the other profeſſors, who intrigued to undermine his fame. He took the moſt effectual mode, however, to ſilence them, by publiſhing his diſſertations on optics, which exhibit an elegant ſyntheſis and well-deviſed ſet of experiments. Theſe eſſays excited the more attention, as, at this time, the ingenuity of men of ſcience was particularly attracted to the ſubject, by Dollond's valuable diſcovery of achromatic glaſſes.

The expulſion of the Jeſuits from the dominions of Spain prevented Boſcovich from going to California, to obſerve the ſecond tranſit of Venus, in 1769, and which expedition the Royal Society of London had ſtrongly ſolicited him to undertake. And as his rivals began now to ſtir themſelves again, he ſought to diſpel the chagrin, by a ſecond journey into France and the Netherlands. At Bruſſels he met with a peaſant, famous for curing the gout, and from whoſe ſingular ſkill he received moſt eſſential benefit. On his return to Italy, he was transferred from the univerſity of Pavia to the palatine ſchools at Milan, and reſided with thoſe of his order, at the college of Brera, where he furniſhed, moſtly at his own expence, an obſervatory, of which he got the direction. But he was ſtill doomed to experience mortification. Some young Jeſuits, who acted as his aſſiſtants, formed a conſpiracy, and, by their artful repreſentations, prevailed with the government to exclude his favourite pupil and friend from holding a charge of truſt. This intelligence was communicated to him at the baths of Albano, and filled him with grief and indignation. He complained to prince Kaunitz, but implored his protection in vain. To the governor of Milan he wrote, that he would not return, unleſs things were reſtored to their former footing. He retired to Venice, where, having ſtaid ten months in fruitleſs expectation of obtaining redreſs, he meditated ſpending the remainder of his days in honourable retirement at his native city of Raguſa. But while he waited for the opportunity of a veſſel to convey him thither, he received the afflicting news of the ſuppreſſion of his order in Italy. He renounced his ſcheme, and ſeemed quite uncertain what ſtep he ſhould take. Having come into the Tuſcan territory, he liſtened to the counſels and ſolicitation of Fabroni, who held forth the proſpect of a handſome appointment in the Lyceum of Piſa. In the mean time he accepted the invitation of La Bord, chamberlain to Louis XV. and accompanied him to Paris. Through the influence of that favourite, he obtained the moſt liberal patronage from the French monarch; he was naturalized, received two penſions, amounting to 8000 livres, or £333, and had an office expreſsly created for him, with the title of "Director of optics for the marine." Boſcovich might now appear to have attained the pinnacle of fortune and glory; but Paris was no longer for him the theatre of applauſe, and his ardent temper became ſoured by the malign breath of jealouſy and neglect. Such extraordinary favour beſtowed on a foreigner, could not fail to excite the envy of the *ſçavans*, who conſidered him as rewarded greatly beyond his true merit. The freedom of his language gave offence, his perpetual egotiſm became diſguſting, and his repetition of barbarous Latin epigrams was moſt grating to Pariſian ears. Beſides, the name of a prieſt and a jeſuit did not now command reſpect; and the ſentiments of auſtere devotion, which he publicly profeſſed, had grown unfaſhionable, and were regarded as ſcarcely befitting the character of a philoſopher. Mirabeau, in his letters from Pruſſia, mentions Boſcovich with a degree of ſlight bordering on contempt, and warmly recommends it to his court to invite from Berlin the celebrated Lagrange, a mathematician of the very higheſt order, and bleſſed with the mildeſt diſpoſition.

But the geometer of Raguſa was not idle. He applied aſſiduouſly to the improvement of aſtronomy and optics; and his diligence was evinced by a ſeries of valuable memoirs. He reviſed and extended his former ideas, and ſtruck out new paths of diſcovery. His ſolution of the problem to determine the orbit of a comet from three obſervations, is remarkable for its elegant ſimplicity; being derived from the mere elementary principles of trigonometry. Not leſs beautiful are his memoirs on the micrometer, and on achromatic teleſcopes. But his ſituation had become extremely irkſome; and in 1783, he deſired and obtained leave of abſence. Two years he ſpent at Baſſano, in the Venetian ſtate, where he publiſhed his opuſcules, in five volumes, 4to. compoſed in Latin, Italian, and French, and containing a variety of elegant and ingenious diſquiſitions connected with aſtronomical and optical ſcience. During that time he lived with his editor Remondini, and occupied himſelf in ſuperintending the preſs. After finiſhing his taſk, he came to Tuſcany, and paſſed ſome months at the convent of Valombroſa. Thence he went to Milan, and iſſued a Latin proſpectus, in which he propoſed to reprint the philoſophical poem of Stay, enriched with his annotations, and extended to ten books. But very few ſubſcribers appeared; his opuſcules experienced a ſlow ſale; and the imperial miniſter neither conſulted nor employed him in ſome mathematical operations which were carrying on. Every thing but too keenly reminded him that he was no more a favourite of the Italian public. The viſions of glory melted away. This mortifying reflexion preyed upon his ſpirits, and made the deeper impreſſion, as his health was much diſordered by an inflammation of the lungs. He ſunk into a ſtupid, liſtleſs melancholy, and after brooding many days, he emerged into a childiſh inſanity, and at laſt became furiouſly mad. It was truly pitiable to behold a man of his eminent talents reduced to ſuch an humiliating condition. The Milaneſe government provided for his cuſtody. During the heat of delirium, he frequently exclaimed, that he would die poor and inglorious. His religious feelings acquired new force, and he ſeemed to look forward with anxious hope for that diſtinction in a future world, which he thought was unjuſtly denied him in this clouded ſtate of exiſtence. In his ſhort lucid moments, or fits of exhauſtion, that intervened, he regretted having ſpent his time in curious ſpeculation, and conſidered the calamity with which he was viſited as a kind of chaſtiſement of heaven for neglecting the ſpiritual duties of his profeſſion. In this temper of reſignation, his impoſthume burſt, and he expired on the 13th of February, 1787. He was interred decently, but without pomp, in the parochial church of S. Maria Pedone. "Such was the exit," ſays Fabroni, "of this ſublime genius, whom Rome honoured as her maſter, whom all Italy regarded as her ornament, and to whom Greece would have erected a ſtatue, had ſhe for want of ſpace been obliged even to throw down ſome of her heroes."

The abbé Boſcovich was tall in ſtature, of a robuſt conſtitution, with a long pale viſage. His temper was open and friendly, but irritable, vehement, and impatient of contradiction. James Boſwell, in his amuſing Life of Dr. Johnſon, incidentally mentions, that the Engliſh moraliſt chancing to meet Boſcovich in London, had a very keen diſpute with him in Latin on ſome metaphyſical topic. There was much heat on both ſides; and the Goliah of literature treated the mathematician in his uſual beariſh manner.

Boſcovich was more diſtinguiſhed by the elegance of his mathematical genius, than for talents of invention. The predilection he entertained for the geometry of the Greeks, led him perhaps to undervalue the modern analyſis, and rather to neglect the cultivation of the integral calculus, that aſtoniſhing inſtrument of diſcovery, which is indiſpenſable in making any great progreſs in the deeper parts of phyſical and aſtronomical ſcience. His example, with ſimilar ones in this country, ſhows the danger of indulging a taſte ſo laudable in itſelf, but which has a tendency to circumſcribe the powers of human intellect.

The only work of Boſcovich that has appeared in Engliſh, is his "Elements of the Conic Sections," which was, within theſe few years, tranſlated, abridged, and ſomewhat altered by the Rev. Mr. Newton of Cambridge. This little treatiſe, we are ſorry to obſerve, has not yet received ſuch attention from the public as it well merits. For a view of his theory of matter, ſee the article Corpuscular Philosophy.

BOSCUS, in *Ancient Law-Writers*, ſignifies a wood of any kind. It is formed from the Greek, *βοσκω*, *I feed*, as ſerving for paſture. In which ſenſe, *boſcus* amounts to the ſame with the Italian *boſco*, and French *bois*. Boſcus is divided into high wood, or timber, called alſo *ſaltus*, and *haut-bois*; and coppice, or underwood, *ſub-boſcus*, or *ſub-bois*.

BOSEA, in *Botany*, (in honour of Boſe, a ſenator of Leipſic). Linn. 315. Reich. 344. Schreb. 442. Willden. 504. Juſſ. 83. Gært. 490. Claſs, *pentandria digynia*. Nat. Ord. *atriplices*. Juſſ.

Gen. Char. *Cal.* perianth five-leaved, equal; folioles roundiſh, concave, erect, thinner at the edge. *Cor.* none. *Stam.* filaments ſubulate, longer than the calyx; anthers ſimple. *Piſt.* germ ovate-oblong, cuſpidate; ſtyle none. *Pericarp*, berry globular, one celled. *Seed* one, round, acuminate.

Eſſ. Char. *Calyx* five-leaved. *Cor.* none. *Berry* one-ſeeded.

Sp. B. *yervamora*. A ſmall ſhrub. Leaves ſimple, alternate, petioled, ovate, pointed, entire, ſmooth, with fine purple nerves; flowers reddiſh, in looſe axillary racemes. Cultivated by Mr. Miller before 1728. A native of the Canary iſlands. La Marck intimates a doubt whether Sloane's Jamaica plant be the ſame.

BOSEN, in *Geography*, a town of Pruſſia, in the province of Natangen, ſeated on the Satten lake; 50 miles S. of Konigſberg.

BOSENBRUNN, a town of Germany, in the circle of Upper Saxony, and the Vogtland; 3 miles S. W. of Oelſnitz.

BOSHAM, a town of Abyſſinia, near the ſource of the river Lebec. N. lat. 7° 40′. E. long. 36° 30′.

BOSHOND, in *Zoology*, (Jachhals vel boſhond). Boſſinguin, p. 291: The ſpotted hyæna, *canis crocuta*.

BOSIO, James, in *Biography*, a native of Milan, who flouriſhed about the end of the 16th century, and being knight ſervitor of the order of Malta, conducted its concerns at Rome for a long time with reputation. Diſappointed in the expectation of the advancement of his patron, cardinal Petrochini, to the papal chair, he retired and devoted the remainder of his life to pious exerciſes. As a writer he is known by his voluminous hiſtory of the order of Malta, entitled "Dell' iſtoria della ſacra religione dell' illuſtriſſima militia di ſan Gioano Gieroſolimitano," 3 vols. fol. printed at Rome, in conſequence of the arrangement of two cordeliers, in 1621, 1629, and 1684. This is the ſource whence later hiſtorians of the order have derived their chief materials. Some idea may be formed of Boſio's underſtanding and diſpoſition, from the veneration which he manifeſted to the wood of the real croſs, of which he wrote the hiſtory from its diſcovery in the time of Conſtantine. *Antonio Boſio*, the nephew of the preceding, who was alſo agent at Rome for Malta, publiſhed in 1632, the reſult of his reſearches into the vaults and catacombs of Rome in a folio volume, entitled "Roma Sotteranea," a work that contains all the monuments and epitaphs which he could find of the firſt Chriſtians. An improved edition was publiſhed in Latin by Paul Aringhi in 1651. Moreri. Nouv. Dict. Hiſt.

BOSLE, in *Geography*, a town of France, in the department of the Loiret, and chief place of a canton, in the diſtrict of Beaugency; 2 miles N. of Beaugency.

BOSNA, Serai. See Serajo.

Bosna, a river of Boſnia, which paſſes by Serajo, and joins the Save, 50 miles N. of that town.

BOSNIA, called alſo *Rama*, a province of Turkey in Europe, being a part of ancient Pannonia, or of Turkiſh Illyricum, and deriving its name from the river Boſna, or from the people called Boſſeni. It is bounded on the north by the river Save, which ſeparates it from Sclavonia, on the eaſt by the Drino, which parts it from Servia, on the weſt by the Verbas, Croatia, and Dalmatia, and on the ſouth by a chain of mountains, which ſeparates it from Dalmatia. It is about 40 leagues long, and 24 broad; and though mountainous, it is fertile, more eſpecially near the rivers; its arable land producing good wheat, and its paſtures feeding many cattle; its mountains contain ſome mines of ſilver. Its air, ſoil, produce, language, and inhabitants, reſemble thoſe of Servia. Boſnia and Servia were formerly united to Hungary, and governed by their own princes; but in 1465, the Turks took poſſeſſion of them; Stephen V. their laſt ſovereign being taken priſoner by Mahomet II. and flayed alive; from that time they have been a province of the Turkiſh empire, which appoints beglerbeys and ſangiacs over them. Boſnia is chiefly inhabited by Greek Chriſtians, together with ſome Mahometans, Jews, and Catholics. Its principal towns are Banjaluka, Orbach, Serajo, and Zwernick.

BOSOK, a town of Hungary, 3 miles E. of Baia.

BOSON, in *Conchology*, the *turbo muricatus*, ſo called by Adanſon.

BOSOWKA, in *Geography*, a town of Poland, in the palatinate of Braclaw. N. lat. 49° 20′. E. long. 30°.

BOSPHORICUM *Marmor*, a name given by the ancients to a ſpecies of marble, of a yellowiſh white colour, with beautiful veins of a ſomewhat darker hue; called alſo, from its tranſparency, *phengites*.

BOSPHORUS, or Bosporus, formed from *βȣς*, *bos*, and *ϖορος*, *paſſage*, in *Geography*, a long and narrow ſea which it is ſuppoſed a bullock may ſwim over; in a more general ſenſe, a long narrow ſea running in between two lands, or ſeparating two continents, and by which two ſeas, or a gulf and a ſea, are made to communicate with each other.

In which ſenſe boſphorus amounts to the ſame with what we otherwiſe call an arm of the ſea, channel, or ſtreight; the Italians, *faro*; the Latins, *fretum*, and the French *pas*, *manche*.

The name *boſphorus* is chiefly confined to two ſtreights, in in the Mediterranean ſea, *viz.* the "Boſphorus of Thrace," commonly called the "Streights of Conſtantinople," or "Channel of the Black Sea;" and the "Cimmerian, or Scythian Boſphorus," ſo called, it ſeems, from its reſemblance to the Thracian: now more commonly the "Streights of Caffa," which unites the ſea of Azof with the Euxine or Black Sea.

The origin of the name is better agreed on than the reaſon why it was firſt given to the Thracian Boſphorus. Nymphius tells us, on the authority of Accarion, that the Phrygians, deſiring to paſs the Thracian ſtreight, built a veſſel, on whoſe prow was the figure of a bullock, and which was hence called *βȣς, bullock;* and which ſerved them for a ferry-boat.—Dionyſius, Val. Flaccus, Callimachus, Apollodorus, Marcellinus, &c. ſay, that Io, being transformed into a cow by Juno, paſſed this ſtreight ſwimming, which hence was called Boſphorus.—Arrian tells us, that the Phrygians were enjoined by the oracle, to follow the route which a bullock ſhould mark out to them; and that upon ſtirring one up, it jumped into the ſea to avoid their purſuit, and ſwam over this ſtreight. Others ſay, that an ox, tormented by a gad-fly, threw itſelf in and ſwam over; and others, that anciently the inhabitants of theſe coaſts, when they would paſs over, joined little boats together, and had them drawn over by bullocks, &c.

Some late writers rather ſuppoſe Boſphorus to have been ſo called, becauſe here was anciently the beaſt-market. Tournef. Voyag. tom. ii. let. 12. and 14.

The "Thracian Boſphorus," called alſo the "Myſian Boſphorus," becauſe the Myſians inhabited the country oppoſite to Thrace, connected the Euxine with the Propontis, or preſent ſea of Marmora, and formed a winding channel, ſeparating Europe from Aſia, through which the waters of the Euxine flow, with a rapid and inceſſant courſe, towards the Mediterranean. This ſtreight has been very minutely deſcribed by Dionyſius of Byzantium, who lived in the time of Domitian, (ſee Hudſon's Geograp. Minor. tom. iii.) and by Gilles or Gyllius, a French traveller of the 16th century. On the ſteep and woody banks of this channel the ancients profuſely ſcattered a crowd of temples and votive altars, atteſting the unſkilfulneſs, the terrors and the devotion of the Greek navigators, who, after the example of the Argonauts, explored the dangers of the inhoſpitable Euxine. On theſe banks tradition long preſerved the memory of the palace of Phineus, infeſted by the obſcene harpies, which Le Clerc conjectures to have been only locuſts; and of the Sylvan reign of Amycus, who defied the ſon of Leda to the combat of the Ceſtus. The reſidence of Amycus was in Aſia, between the old and the new caſtles, at a place called Laurus Inſana; and that of Phineus was in Europe, near the village of Mauromole and the Black Sea. The ſtreights of the Boſphorus are terminated by the Cyanean rocks, which, as the poets deſcribe them, had once floated on the face of the waters; and were deſtined by the gods to protect the entrance of the Euxine againſt the eye of profane curioſity. At preſent there are two ſmall iſlands, one towards either ſhore; that of Europe being diſtinguiſhed by the column of Pompey. From the Cyanean rocks, to the point and harbour of Byzantium, the winding length of the Boſphorus extends about 16 miles, and its moſt ordinary breadth may be computed at about 1½ mile. According to the ſtatement of Olivier, (Travels in the Ottoman Empire, p. 77.) it is nearly 7 leagues long, and about 20 miles from the point of the Seraglio of Conſtantinople to the Cyanean iſlands. In its greateſt breadth it is not two miles; and in ſeveral places it is ſo narrow, that ſome ancient authors ſay, that a perſon may hear the birds ſing from one ſhore to the other, and that two perſons may hold a converſation acroſs the channel. Herodotus, Polybius, and Arrian eſtimated its length from the temple of Jupiter to the city of Byzantium at 120 ſtadia, or 15 Roman miles, *i. e.* 13 miles 5 furlongs and 191,336 yards in Engliſh meaſure. Its breadth was various. At its entrance they reckoned it 4 ſtadia, or 805 yards; and at the other extremity 14 ſtadia, or 2825 yards. But the ancients, as well as the moderns, differ very much about theſe meaſures. In certain places its waters formed large baſons and deep bays. The new caſtles of Europe and Aſia are conſtructed, on either continent, upon the foundations of two celebrated temples of Serapis and of Jupiter Urius. The old caſtles, erected by the Greek emperors, command the narroweſt part of the channel, in a place where the oppoſite banks advance within 500 paces of each other. Mahomet II., when he meditated the ſiege of Conſtantinople, reſtored and ſtrengthened theſe fortreſſes; but he was not apprized, that near 2000 years before his reign, Darius had choſen the ſame ſituation to connect the two continents, by a bridge of boats, and thus to tranſport 700 thouſand men againſt the Scythians. At this place the cruſaders alſo entered Aſia, when they proſecuted the ſcheme of reſcuing the holy land from the yoke of the Mahometans. At a ſmall diſtance from the old caſtles, we diſcover the little town of Chryſopolis or Scutari; and as the Boſphorus begins to open into the Propontis, it paſſes between Byzantium and Chalcedon.

The harbour of Conſtantinople may be conſidered as an arm of the Boſphorus, and in a very remote period obtained the denomination of the "Golden Horn," from the reſemblance which the curve it deſcribes bears to the horn of a ſtag, or rather of an ox, with the epithet golden, expreſſing the riches which every wind wafted from the moſt diſtant countries into the ſecure and capacious port of Conſtantinople; which ſee. From the mouth of the Lycus, formed by the conflux of two ſmall ſtreams, and ſupplying the harbour with freſh water, by which the bottom of the harbour is cleanſed, and ſhoals of fiſh are invited to make it their retreat, to that of the harbour, this arm of the Boſphorus is more than ſeven miles in length; the entrance is about 500 yards broad, and a ſtrong chain might be occaſionally drawn acroſs it, to guard the port and city from the attack of an hoſtile navy. The navigation from the iſſue of the Boſphorus to the entrance of the Helleſpont is about 120 miles. See HELLESPONT, and PROPONTIS.

The "Cimmerian Boſphorus," now called the ſtreights of Caffa, derived its name from the "Cimmerians," a people who inhabited the adjacent country; ſeparated between Cherſoneſus Taurica, belonging to Europe, and the territories of Aſia; and joined the Euxine ſea, with the Palus Mæotis. Its breadth is about 4 leagues. See *Sea of* AZOF.

BOSPHORUS, or *Cimmerian Boſphorus*, the name of an ancient kingdom; comprehending all the provinces that were ſubject to the Boſphoran princes, and bounded on the eaſt by Colchis, on the weſt by the gulf Carcinites, on the ſouth by the Euxine ſea, and on the north by the Tanais, where that river falls into the Palus Mæotis; ſo that it compriſed the Cherſoneſus Taurica in Europe, and in Aſia the whole tract which lies between the Palus Mæotis and the Euxine ſea. Diodorus Siculus (l. xii.) confines the kingdom of Boſphorus within the Boſphorus Cimmerius, the boundary of Europe and Aſia on that ſide; but Strabo (l. vii.) extends it to the gulf Carcinites, which, with the Palus Mæotis, forms the iſthmus of the Cherſoneſus. The chief cities of the Aſiatic Boſphorus were Phanagoria, the metropolis of Boſphorus in Aſia, according to Strabo, Cepi, Hermonaſſa, Stratoclea, Cimmerium, Sinda on the Palus Mæotis, Tanais at the mouth of the river bearing that name, where the city of Azof now ſtands, Paniardis, Tyrambe, and Geraſum, called by Ptolemy a Cimbrian village. The country bordering on the Palus Mæotis and the Boſphorus, which was inhabited by the Cimmerii, is repreſented by the ancients as inhoſpitable, covered with thick foreſts and continual fogs through which the rays of the ſun could not penetrate. See Cimmerii.

The Boſporani were governed by their own princes in the earlieſt times; but the hiſtory of them by Trogus Pompeius is loſt, ſo that little certainty is known concerning them. The firſt recorded in hiſtory, and mentioned by Strabo, (l. vii.) was Lucon; and he was ſucceeded by ſeveral others, whoſe hiſtory is involved in great obſcurity. The kingdom of Boſphorus, as we are informed by Diodorus Siculus, was voluntarily ſurrendered by Pariſides III. to Mithridates the Great, king of Pontus, after it had been held by his anceſtors for the ſpace of 400 years. In the time of the laſt Mithridatic war, the Boſporani revolted from Mithridates, and admitted Roman garriſons into the cities of Phanagoria, Theodoſia, Cherſoneſus, and Nymphæum; but upon the death of that prince, the whole country was reſtored by Pompey to his ſon Pharnaces, whom he honoured with the title of friend and ally of the Roman people. During the civil war between Cæſar and Pompey, Pharnaces, not ſatisfied with the kingdom of Boſphorus, attempted the recovery of his father's dominions; croſſed the Euxine ſea, and reduced Colchis, Armenia Minor, and ſeveral places in Cappadocia, Pontus, and Bithynia. After the battle of Pharſalia, Cæſar ſent againſt him a conſiderable force under the command of Domitius Calvinus; Domitius being overcome in battle, Pharnaces made himſelf maſter of the remaining part of Pontus and Cappadocia, and of all Bithynia; but as he was advancing into Aſia, properly ſo called, Cæſar left Egypt, traverſed Syria, and came unexpectedly upon Pharnaces, and gained a complete victory. After this defeat Pharnaces fled to Sinope, and from thence ſailed back into Boſphorus; where, upon his landing, Aſander, whom he had appointed governor of that country during his abſence, ſeized and put him to death, and took upon himſelf the title of king of Boſphorus. Cæſar, however, conferred the kingdom of Boſphorus on Mithridates the Pergamian, in recompence of ſervices which he had performed in Egypt. But in endeavouring to ſecure the poſſeſſion of it, he was vanquiſhed and ſlain in battle by Aſander, who, after his death, held the kingdom without any farther moleſtation. Aſander, being diſguſted by the emperor Auguſtus, who gave the command of the Boſphorean troops that ſerved in the Roman army to Scribonius, abſtained from all food, and thus ended his life in the 93d year of his age. Upon his death Scribonius, pretending that he was the grandſon of Mithridates, and marrying Dynamis, the daughter of Pharnaces, took poſſeſſion of the kingdom of Boſphorus, but was expelled from it by Polemon, on whom the kingdom had been beſtowed by Auguſtus. Polemon was ſucceeded by his ſon Polemon II.; who exchanged the kingdom, in the reign of Claudius for part of Cilicia. Trajan, as Eutropius informs us, took the king of Boſphorus under his protection; and Lucian tells us, that the Boſporans, in his time, had a king named Eupator; but we have no record of the period previous to the diviſion of the Roman empire in which this kingdom terminates.

Bosphorus, *Promontory of*, was a promontory of Thrace, at the entrance of the harbour of Byzantium, ſituate on the Thracian Boſphorus, near the Propontis, and N.W. of the promontory of Chalcedon in Aſia Minor.

Bosphorus, a city of Cherſoneſus Taurica, ſeated near the Cimmerian Boſphorus, and ſuppoſed by ſome writers to have been the ſame with Panticapæum, which, according to Strabo, was the metropolis of the European Boſphorus. But Pliny, Eutropius, and Stephanus Byz., ſpeak of them as two different cities. Strabo and Ptolemy take notice of Panticapæum, but ſay nothing of Boſphorus; but Procopius often mentions the latter, but never takes notice of Panticapæum; from which circumſtance it has been inferred, that theſe two names belong, at different periods, to the ſame city; Panticapæum being its moſt ancient name, recognized by Pliny, Strabo, and Ptolemy, and Boſphorus the name given to it by Procopius. Pliny, however, ſays, that ſome perſons called it Boſphorus, and that, in its origin, it was a colony of Mileſians.

Bosphorus, a town of India. Steph. Byz.—Alſo, the name of a town placed by Suidas towards the Helleſpont, which was ravaged under the empire of Juſtinian.

BOSQUET, Francis, in *Biography*, one of the moſt learned prelates of France in the 17th century, was born at Narbonne, in 1605, and educated at Toulouſe. Before he aſſumed the eccleſiaſtical profeſſion, he exerciſed various civil employments, *viz.* thoſe of intendant of Guienne and of Languedoc, ſolicitor-general to the parliament of Normandy, and counſellor of ſtate. But, in 1648, he was nominated biſhop of Lodeve, and entruſted by the king with the management of the national concerns; and in 1657 took poſſeſſion of the biſhopric of Montpellier, in which ſituation he continued till his death in 1676. He was held in high eſtimation, for his learning, piety, and charity. As an author, he acquired betimes a conſiderable degree of reputation by his Latin tranſlation, with notes, of the ſynopſis of civil law, compoſed in Greek verſe by Michael Pſellus. He alſo wrote a "Hiſtory of the popes, who reſided at Avignon," from 1305 to 1394; and publiſhed ſeveral epiſtles of pope Innocent III. with learned notes. But his principal work was a "Hiſtory of the Gallican church, in the reign of Conſtantine," written in Latin, and publiſhed with conſiderable augmentations in 1636, 4to. but with the omiſſion of ſome liberal and ſpirited reflections on the fictions and errors introduced into the early accounts of the Gallican church. He alſo left behind him ſome MS. obſervations on the liberties of the Gallican church, and ſome notes on the canon law. Gen. Dict.

Bosquet, in *Ornamental Gardening*, is a term applied to detached clumps or other parts of gardens, pleaſure or ornamented grounds, planted with a variety of deciduous evergreen trees, and ſhrubs, and herbaceous perennial flowers, either in a regular or irregular manner. They ſhould be laid out in form ſuited to the nature, extent, and particular circumſtances of the ground, ſo as to produce the greateſt poſſible variety and effect; ſome being made circular, others oval or oblong, and with bending ſweeps or ſwells outwards or inwards, and longer or ſmaller as may be neceſſary. They may be diſpoſed with the greateſt effect on the confines of extenſive lawns, or other open ſpaces in graſs; alſo in parks, paddocks, the terminations of ſpacious avenues and carriage ways leading to the houſes, eſpecially where of conſiderable dimenſions, being varied in ſituation, and diſtributed at ſuch diſtances as to leave large intervening ſpaces of open land in graſs.

In the planting of compartments of this nature, in order to produce the beſt effect, much attention ſhould be beſtowed in regulating the ſizes of the plants, their ſhades, and times of flowering, as well as in the diſpoſing them in the order of their different growths, ſo that they may riſe regularly from the ſides to the centres, and diſplay themſelves in the beſt and moſt advantageous manner in their heads and branches. It was formerly the practice to plant trees and ſhrubs of the deciduous and evergreen kinds, chiefly together in ſeparate patches, but by a judicious mixture of both ſorts a great richneſs and variety of effect are produced; various ſorts of tall herbaceous perennial plants, as well as low flowering ones, may be introduced on the ſides and edges, ſuch as thoſe of the golden rod, and other ſimilar kinds, with daffodils, violets, polyanthuſes, primroſes, and many others of the ſame ſort.

In the leſs extenſive kinds of ornamented grounds theſe ſorts of boſquets ſhould always remain perfectly open and wholly expoſed to view, in order that the full variety of the plants may be ſhown; but in extenſive parks, and other ſimilar grounds where they are chiefly planted with the more large and coarſe hardy trees and ſhrubs, they may be incloſed with open hurdles to defend them from the cropping of cattle or other animals, eſpecially until they have acquired a ſufficiently hardy and large growth.

Theſe clumps, after being thus planted, only require the earth among the plants to be ſlightly dug over in the autumn, or very early ſpring, and once or twice hoed over in the ſummer to keep weeds from riſing; the dead wood and irregular branches of the different plants or trees being cut out, ſhortened, and removed, to preſerve them diſtinct and keep them in order. See CLUMP.

When well arranged and kept in neat order theſe ſorts of boſquets or clumps produce much diverſity and ornamental effect, both in large gardens and pleaſure grounds.

BOSRA, in *Geography*, a town of Arabia Petræa, ſunk into decay and inconſiderable note, though it is conſidered as the capital of the country. It is ſeated in the midland, on the back of Paleſtine, on the other ſide Jordan, and about 150 miles from the lake, or ſea, of Galilee. See BOSTRA.

BOSS, or BOSSE, in *Sculpture*, ſignifies relievo, or prominency. The word is French, *boſſe*, which ſignifies the ſame; whence alſo to emboſss. See EMBOSSING.

Boss *of a buckler*, among the *Ancients*, the *umbo*, or ομφαλος, which juts out in the middle.

Boss, among *Bricklayers*, denotes a wooden utenſil wherein the labourers put the mortar to be uſed in tiling. It has an iron hook, whereby it may be hung on the laths, or on a ladder.

BOSS, GASPAR VANDER, in *Biography*, a painter of ſhips, ſea-views, calms, and ſtorms, was born at Hoorn, in 1634, and manifeſting an early genius for the art of painting, applied with aſſiduity to the ſtudy and practice of it, and diſtinguiſhed himſelf by the excellence of his compoſition, by a light free touch, by an agreeable tint of colour, and by a very artful manner of handling. His application was ſo intenſe as to impair his health, ſo that he died much regretted at an early age in 1666. Pilkington.

BOSSAGE, in *Architecture*, a projecting ſtone, laid rough in building, to be afterwards carved into mouldings, capitals, arms, or the like.

BOSSAGES, alſo denote ſtones which ſeem to advance beyond the naked of a building, by reaſon of indentures, or channels left in the joinings; uſed chiefly in the corners of buildings, and thence called ruſtic quoins.

The cavities or indentures are ſometimes round, ſometimes ſquare, ſometimes chamfrained, or bevelled, ſometimes in the diamond form: ſometimes they are encloſed with a cavetto, ſometimes with a liſtel.

BOSSCHART, THOMAS WILLEBORTS, in *Biography*, a painter of hiſtory and portraits, was born at Bergen-op-zoom, in 1613, and ſtudied at Rome under Gerard Segers, with whom he continued four years. His taſte of deſign was fine and correct, his touch free and ſpirited, his colouring tranſparent and true, and his carnations poſſeſſed ſo much ſoftneſs and life, that he was thought to approach near to Vandyck in portrait and hiſtory; and his works were eagerly purchaſed. His merit recommended him to the patronage of the prince of Orange, in whoſe ſervice he was employed for ſeveral years. The large picture of "War and Peace," at the Hague, and the "Martyrdom of St. George," in the great church, are much commended for goodneſs of expreſſion, for excellent colouring, and for being exquiſitely finiſhed. Pilkington.

BOSSE, ABRAHAM, a French engraver, was born at Tours, and flouriſhed in 1630. In his performances he ſucceſsfully imitated the coarſer manner of Callot; and moſt of his works are executed from his own deſigns. The figures, with which he commonly embelliſhed his plates, are drawn in a ſpirited ſtyle, and etched with great freedom. He afterwards retouched the etching with the graver in a bold, expeditious manner. The effect of his plates is clear and pleaſing, though his lights are uſually too much ſcattered. He was moſt ſucceſsful in ſmall ſubjects. We have a treatiſe by him "On the art of drawing;" the beſt edition of which is ſaid to be that with the additions and corrections of M. Cochin; "The ſchool of the painter and ſculptor;" "The workſhop of a copper-plate printer;" "The ſchool-maſter and miſtreſs;" and ſeveral other plates from his own deſigns; and alſo, "The hiſtory of the Maid of Orleans," from the deſigns of Vignon, &c. &c. Strutt.

BOSSEE, in *Geography*, a town of Germany, in the duchy of Holſtein; 6 miles E. S. E. of Rendſburg.

BOSSIÆA, in *Botany*, Willden 1242. Claſs, *diadelphia decandria*.

Gen. Char. *Cal.* bilabiate, upper lip obcordate. *Cor.* banner biglandular at the baſe: keel two-petalled. *Pericarp*, legume peduncled, compreſſed, many-ſeeded.

Species, B. *heterophylla*. Ventenat. A ſhrub two feet high. Branches compreſſed. Leaves alternate, ſmooth, petioled, the lower elliptic, the upper lanceolate. Peduncles one-flowered, axillary. Banner and rings yellow. Keel purple. A native of New Holland.

BOSSINEY, in *Geography*, an ancient borough of Cornwall, in England, is reduced from its original conſequence, and now conſiſts of only a few miſerable cottages; yet ſome of the occupiers of theſe dwellings have the power of electing two members of parliament. This place, with many other towns in the county, was made a chartered borough by Richard earl of Cornwall, brother of Henry III.; but the town has never been incorporated. The right of election is veſted in all perſons who poſſeſs lands within the borough and live in the pariſh, but this number is now reduced to five or ſix.

Boſſiney is in the pariſh of Tintagel, where are the remains of a caſtle occupying a very ſingular ſituation. The fortreſs ſtood partly on the main land and partly on a bold ſlaty promontory, which was ſeparated from the ſhore by an immenſe chaſm in the cliff, over which there was formerly a drawbridge. What remains on the peninſular part is a circular ruinous wall, which incloſes ſome buildings that appear to have been the keep. Beneath is a paſſage through the rocks, where boats could paſs at the time of high tides. From the extent and character of the ruins it is preſumed, that this fortreſs has been a place of great ſtrength and ſecurity. It is aſſerted by many writers, that it was the birth-place of the celebrated Britiſh king, Arthur, but this aſſertion is not ſatisfactorily ſubſtantiated. See ARTHUR. The bold, ſtupendous cliffs about Tintagel, and along the northern coaſt of Cornwall, cannot fail to excite emotions of admiration and terror in the minds of moſt ſpectators.

From Tintagel to Boſcaſtle the road winds through various rocky chaſms. The latter village is ſeated at the bottom of a deep valley, waſhed by a ſmall inlet of the ſea, whilſt mountainous eminences encircle it. This place was formerly noted for a caſtle, built by one of the Botereaux family; but no fragments are now remaining. Hiſtory of Boroughs, vol. i. 8vo.

BOSSO, Matthew, in *Biography*, an eccleſiaſtic diſtinguiſhed for his learning and virtues, was born at Verona, in 1428, and educated firſt at Milan, and after his admiſſion into the congregation of canons regular of the Lateran, at Padua. His merit advanced him to ſeveral eminent offices in his order; and at Fieſole, where he ſuperintended the canonry of St. Bartholomew, he became acquainted with Lorenzo de Medici, who appointed him his confeſſor; and it was from his hands, and in his church that John, the ſon of Lorenzo, afterwards pope Leo X. received the enſigns of the cardinalate. He was offered a biſhopric by pope Sixtus IV. for his ſervices in checking the diſorders that prevailed in the nunneries of Liguria, and the adjacent provinces, but refuſed to accept it. After having five times ſuſtained the office of viſitor, and twice that of procurator-general of his order, he died at Padua in 1502. Of his works the principal are the following, viz. "De ſalutaribus animi gaudiis;" "De inſtituendo ſapientia animo;" "De tolerandis adverſis;" "De gerendo magiſtratu;" "De immoderato mulierum cultu;" and a collection of letters and ſmall pieces, entitled "Recuperationes Feſulanæ," printed at Bologna, in 1493, and furniſhing one of the fineſt ſpecimens of typography of the 15th century. Gen. Dict. Roſcoe's Lorenzo de Medici, vol. ii.

BOSSON, in *Geography*, one of the five glaciers of Swiſſerland, that ſtretch towards the plain of Chamouny, and unite at the foot of Mount Blanc. See GLACIER.

BOSSU, Rene Le, in *Biography*, a polite ſcholar and eminent critic, was born at Paris in 1631; and having received the rudiments of his education at Nanterre, he was admitted a canon regular in the abbey of St. Genevieve, at the early age of 18 years, and purſued the ſtudy of philoſophy and divinity. After having received prieſt's orders, in 1657, he indulged his inclination to the Belles Lettres, and devoted himſelf for ſeveral years to the employment of teaching them. At length he retired to paſs his time in tranquil ſtudy at the abbey of St. Genevieve; and in this retreat, where he was ſedulouſly employed, publiſhed his "Parallel of the philoſophy of Deſcartes and of Ariſtotle," and his more popular "Treatiſe on epic poetry." He alſo publiſhed a ſmall piece in favour of Boileau againſt St. Sorlin; but the greater number of his compoſitions remain in MS. at the abbey of St. John, at Chartres, of which he was made ſub-prior in 1677. He died in 1680. Boſſu was diſtinguiſhed by a ſound judgment, well regulated, but lively imagination, and a mild, benevolent character. His work on epic poetry furniſhes many judicious rules, of which however, Voltaire ſays, that they will never make a poet. It was left in an imperfect ſtate; the author having intended to exemplify his rules from Horace and Virgil. The beſt edition is that of the Hague, in 1714, with a memoir on the life and writings of the author by father Courayer. Gen. Dict.

Bossu, in *Geography*, an iſland about 3 or 4 leagues N.E. from Trinity Point, on the north coaſt of the gulf or river of St. Lawrence.

BOSSUET, James Benignus, in *Biography*, a famous French divine, celebrated for popular eloquence, for his talents as a controverſial divine, and for his elaborate vindication of the Roman catholic faith, was born at Dijon in 1621; and having for ſome time purſued his ſtudies under the care of the Jeſuits, who wiſhed him to enter into their order, he was reſcued from them by the interpoſition of his uncle, and in 1642 ſent to Paris to finiſh his ſtudies at the college of Navarre. As he had devoted himſelf to the clerical profeſſion, theology was the object of his particular attention; and his favourite author was Auguſtin. To the ſtudy of polite literature he dedicated a portion of his time; and whilſt he was a profeſſed admirer of Homer, he diſapproved the introduction of mythology into modern poetry. And though the range of his ſtudies was very extenſive, he diſregarded mathematics from a preconceived notion, that they would not contribute to make him a ſounder divine, or a more eloquent preacher. The philoſophy of Deſcartes recommended itſelf to him by its novelty, and he adopted it, notwithſtanding the reproach and perſecution which it underwent. After completing his theological courſe, he received the degree of doctor of the Sorbonne in 1652, and then removed to Metz, when he was appointed canon of the church. Here he wrote his firſt polemic piece, which was a refutation of the catechiſm of a Huguenot miniſter of that town, with whom, however, he lived on terms of uninterrupted friendſhip. Upon his return to Paris, his eloquence as a preacher recommended him to royal patronage. In 1661, he preached before the king, and his conduct during his reſidence at Verſailles was ſuited to the dignity of his profeſſion. He ſoon obtained, without any ſolicitation on his own part, the biſhopric of Condom; but when he was appointed preceptor to the dauphin, in 1670, he reſigned this preferment, and devoted himſelf entirely to the diſcharge of the duties of this honourable and important office. In this ſituation he compoſed for the uſe of his pupil, his diſcourſe on univerſal hiſtory, which, notwithſtanding ſome objections that have been urged againſt it, is conſidered as his principal performance, and much more inſtructive and uſeful than all his theological and controverſial writings. As ſoon as he had completed the education of the prince, Lewis XIV. advanced him, in recompence of his attention to this object, in 1681, to the ſee of Meaux; and in this ſituation of greater leiſure, he employed himſelf in the defence of the church againſt both infidels and proteſtants. In his polemic writings he diſplayed much logical acuteneſs and dexterity in illuſtrating the doctrine of the church, and the variations ſubſiſting among proteſtants; and he deduced his chief arguments in favour of the former, and in oppoſition to the latter, from the antiquity and unity of the churches; the authority of fathers, councils, and popes, during a long ſeries of ages; the novelty of the pretenſions of the reformers; the neceſſity of an umpire in the province of religion for ſettling diſputes, explaining the ſcriptures, and maintaining order and peace; and the neceſſity of ſubmitting to ſuch an umpire, in order to prevent that diſ-union and variety of ſects, each profeſſing its right to interpret the divine word, and claiming the honour of being the true church, which diſgraced the cauſe of the proteſtants. The latter were ably defended by the French Calviniſts, and particularly by the celebrated Claude, to whom, in the controverſy, ſome even of the catholics have allowed the ſuperiority. Leibnitz alſo became a party in the diſpute between the proteſtants and papiſts, and recommended, for the ſake of unity and peace, mutual conceſſions. But Boſſuet remained inflexible, and conceded only that the ſacramental cup might be allowed, as a matter of favour, to the laity. He was, however, no advocate for the infallibility of the pope, or for his aſſumed right of depoſing kings; but zealouſly oppoſed both theſe claims;

claims, when urged by Innocent XI. againſt the independence of the crown, and the liberties of the clergy of France. The conſequence of his oppoſition was the loſs of the cardinal's hat, which the pope offered him as an inducement to his deſiſting from proſecuting this diſpute.

Boſſuet, not content with writing on general ſubjects, ſuch as the defence of the Chriſtian religion, the catholic faith, and the Gallican church, undertook to refute the notions of the amiable Fenelon concerning quietiſm; either becauſe he conſidered theſe notions as erroneous and dangerous, or becauſe he wiſhed to degrade in the general eſtimation the character of a perſon, whom he regarded as a rival. Fenelon complained of the harſhneſs with which he was treated; and ſuch indeed were the impetuoſity and zeal with which he entered into this diſpute, that being once at court he maintained his opinion with a degree of ardour, which led the king to ſay to him, "What would you have done, if I had taken part with Fenelon againſt you?" Boſſuet replied with great ſpirit, "I would have ſpoken ten times as loud." On another occaſion, however, he was leſs diſpoſed to give offence; for though he had condemned theatrical exhibitions, to which Lewis was addicted, yet being aſked, what he thought of attending them, he replied with a conſiderable degree of addreſs, "For it there are great examples, and againſt it ſtrong arguments."

Of his talents as a ſpeaker Boſſuet exhibited a ſpecimen that was much admired, at the early age of 16; and as to his ſtyle of preaching, it was lofty, free, animated, and energetic. As he poſſeſſed a retentive memory, he ſeldom wrote down more than the heads of his diſcourſes, and ſupplied the intervals extempore, but as the reſult of previous meditation. Hence it happens, that his printed ſermons are rather bold and maſterly ſketches than finiſhed compoſitions; and however much they have been admired, they are far excelled by the diſcourſes of Maſſillon and Bourdaloue. But his funeral orations are conſidered as ſurpaſſing all others with reſpect to ſublimity and pathos. Of the ſeven which he delivered and publiſhed, the three that have claimed pre-eminence are thoſe for the queen of England, widow of Charles I., in which is introduced a fine delineation of Cromwell's character and politics; for the ducheſs of Orleans, ſiſter to Charles II.; and for the famous prince of Condé.

In the exerciſe of his epiſcopal and paſtoral functions Boſſuet was entitled to great reſpect and commendation. He was eminently diſtinguiſhed by his attention to the duties of his office; by his diligence in communicating inſtruction to the ignorant, and comfort to the afflicted; and by the exerciſe of an exemplary hoſpitality to the indigent. In his clerical viſits he paid particular attention even to peaſants and children. Whilſt he was thus amiably employed, he cloſed a ſtudious and dignified life, in the year 1704. It ought to be recorded to his honour, that though he was a zealous advocate for the doctrines of the church of Rome, he was no friend to perſecution, and expreſſed his diſapprobation of the ſeverity exerciſed toward the Huguenots. Nevertheleſs, it does not appear that he ever repreſented to the king the injuſtice, cruelty, and impolicy of this conduct.

"The behaviour and manners of Boſſuet always commanded reſpect, but they often betrayed haughtineſs, a domineering diſpoſition, and a high opinion of himſelf; and ſhewed he had but little of that ſpirit of meekneſs and gentleneſs, which in the archbiſhop of Cambray was joined to every virtue that inſpires veneration. The difference of their characters is eaſily diſcerned in their writings. In thoſe of Boſſuet, the reader admires vigour of mind and ſtrength of reaſoning; in thoſe of Fenelon, he feels the perſuaſive power ariſing from the union of a fine genius with genuine benevolence. Accordingly, the former has been ſaid to have demonſtrated the truth, and the latter to have exhibited the amiableneſs of religion."

Of the works of Boſſuet a collection was made in 1743, in 12 vols. 4to. to which was added, a ſupplement of 5 vols. 4to.; and the Benedictines of St. Maur have publiſhed 12 vols. of a new and improved edition. He alſo wrote in Latin a defence of the declaration of the French clergy on eccleſiaſtical power. Boſſuet was a diſtinguiſhed member of the French academy, into which he was admitted in 1671. Eloge Academique par d'Alembert. Nouv. Dict. Hiſt. Moreri. Gen. Biog.

BOST, or Bust, in *Geography*, a town of Perſia, in the province of Segiſtan, or Seiſtan, ſeated on the banks of the river Heermund, or Hindmend; diſtant about 75 miles S.W. from Candahar. N. lat. 32° 30′. E. long. 64° 25′. From this town *Abulfeth Ali Ben Mohammed al Kateb*, one of the moſt illuſtrious poets who flouriſhed under the dynaſty of the Samanides, derived the appellation of *Al Boſti*. Herbelot.

BOSTAN, a town of Aſiatic Turkey, in the province of Room, ſeated in a fertile plain of the ſame name, watered by the river formerly called "Sarus," and ſurrounded with mountains, on the northern ſide of mount Taurus. The town is ſmall; and its inhabitants preſent a ſtriking contraſt to the more poliſhed natives of Syria. Their common dreſs is a ſhort jacket and a fringed turban. The women, whoſe complexion is fair and florid, wear on their heads flat pieces of metal, ſome of ſilver, and others of copper, according to their rank, which they tie under the chin, and thus ſhelter their faces from the ſun and rain. N. lat. 38° 12′. E. long. 36° 28′.

BOSTANGI-Baschi, or *Boſtangee Bachi*, in the *Turkiſh Affairs*, an officer in the grand ſeignior's houſhold, who has the ſuperintendance of all the gardens, water-works, and houſes of pleaſure, with the workmen employed in them. The poſt of boſtangi-baſchi, or chief gardener, is one of the moſt conſiderable in the Turkiſh court; and his power is very extenſive. He has the emperor's ear, and on that account is much courted by all who have buſineſs depending at the Porte; he is governor of all the villages on the channel of the Black ſea, and has the command of above ten thouſand boſtangis, or gardeners, in the ſeraglio, and other places about Conſtantinople. He repreſſes debauchery, and puniſhes theft and other offences. But that which gives him the greateſt eclat is the honour he has of holding the rudder whenever the grand ſeignior takes his pleaſure on the water, and of accompanying him every where on horſeback, whenever he goes out in ſtate. This officer is of the number of the four "Rickab agaleri," or officers of the court, who are obliged to attend the ſultan on all ſolemn occaſions; the other three are called "Buyuk-imbrohor," or great equerry, "Kurchuk-imbrohor," or little equerry, and "Capidjilar-kiayaſſi," or great chamberlain. The boſtangees are generally ſons of Muſſulmans; their pay is tolerably good, and they are almoſt all married. They were eſtabliſhed under the reign of the firſt emperors, and for a long time furniſhed a nurſery of the beſt ſoldiers. Thoſe of them who diſplayed the greateſt courage and ſtrength, and more eſpecially the higheſt degree of fanaticiſm, were transferred to the janizaries.

BOSTON, in *Geography*, is a large commercial borough-town of Lincolnſhire, in England. It ſtands in that diviſion of the county called Holland, and is nearly ſurrounded by the fens; the greater part of which having been incloſed and drained, is now appropriated to arable and meadow lands. Previous to this great national undertaking, Boſton had loſt much of its population and trade; but this event has renovated the town. It ſtands on the banks of the river Witham, which empties itſelf into the ſea about five miles eaſt of the town. Here is a commodious, well-frequented haven; and formerly a great trade was carried on in the exportation of wool: that being prohibited, the merchants were neceſſitated to ſeek for profit in other commodities, and have nearly kept pace in the characteriſtic commercial ſpirit of the country, by advancing the population, opulence, and trade of Boſton. It is now one of the moſt conſiderable towns and ports in the county of Lincoln; and, beſides two weekly markets, has four annual fairs.

Boſton, according to Bede, was anciently called Botolph's town, from St. Botolph, a Saxon, who founded a monaſtery here, which, according to the ſame venerable writer, gave origin to the town. Other writers ſtate, that the Romans had a ſtation here, and in ſupport of this opinion refer to ſome ancient foundations of buildings, hewn ſtones, and urns, that were diſcovered here in 1716. This town ſent repreſentatives to three national councils, 11th, 26th, and 27th of Edw. III. and firſt returned regular members in Edw. VI.'s time. It was incorporated in the laſt year of Henry VIII.'s reign. The number of voters amounts to nearly 200. About the end of Henry I.'s reign, a man, named Robert Chamberlain, with ſome accomplices, diſguiſed in the habits of monks, ſet the town on fire in ſeveral places, for the purpoſe of plundering the inhabitants. Chamberlain was taken, and executed, but refuſed to impeach his accomplices.

The corporation, by whom the town is governed, conſiſts of a mayor, who is chief clerk of the market, and admiral of the coaſt, a recorder, twelve aldermen, eighteen common-councilmen, a judge, and marſhal of the admiralty, a coroner, two ſerjeants at mace, and other inferior officers.

The river Witham is navigable at ſpring tides for veſſels of ten to eleven feet water; and many of them are employed in the corn trade to London. A communication is opened between this place and Lincoln, by means of a canal; and another cut communicates to Sleaford, Horncaſtle, &c.

Boſton had formerly, beſides St. Botolph's monaſtery, a priory, four friaries, and three colleges. It had alſo two churches; but that of St. John's is entirely deſtroyed. The other, dedicated to St. Botolph, is a large, elegant pile of building, with a lofty tower, which is juſtly admired for the lightneſs, neatneſs, and beauty of its various compartments. In the year 1309 was laid the foundation of this ſtructure, which has ſince proved the pride and boaſt of the Boſtonians. It is 300 feet in height, and is ſaid to be the loftieſt tower in England. From its top is a moſt extenſive view over the flat fens of Lincolnſhire. The whole height is divided into four compartments, of which the uppermoſt is formed into an octagon-ſhaped lanthorn, each ſide perforated with pointed arched windows, and filled with mullions and tracery. This is attached to the ſquare tower by flying buttreſſes, terminated by purfled pinnacles. The three other compartments are ornamented with highly decorative windows and tracery; and at each corner are two ſtrong ornamented buttreſſes. The church, though more ancient than the tower, diſplays a fine example of Engliſh florid eccleſiaſtical architecture. Large in dimenſions, lofty and light in its general character, and richly elegant in the various decorative ornaments of windows, oratories, door-ways, &c. it will be examined with delight by the architectural antiquary. It conſiſts of a nave, chancel, ſide aiſles, ſouth porch chapels, &c.; and is one hundred feet in width, by three hundred feet in length. In the upper part of the nave are twenty-eight pointed windows, between which are fourteen groined arches, with light ſpandrils curiouſly moulded. Theſe, with their interſections and emboſſments, produce a very beautiful effect, which is improved by the lofty columns and arches that divide the centre from the ſide aiſles.

The general appearance and convenience of Boſton have been much improved within the laſt twenty years. Many obſtructions have been removed, and new buildings erected. The market place is ſpacious, and is ornamented with a handſome market-croſs. In 1772, the corporation built an excellent fiſh-market, which is abundantly ſupplied with ſea and river fiſh. Queen Elizabeth gave the corporation a court of admiralty over all the adjacent ſea-coaſt. Veſſels arrive here from Stanton's wharf, London, every ten days; and from Hull and Lynn, every ſpring tide. Several foreign ſhips trade here in ſummer with timber, rye, wine, &c. Boſton is 35 miles eaſt of Lincoln, and 116 miles N. E. of London. It contains 1252 houſes, and 5926 inhabitants. Hiſtory of the Boroughs of Great Britain, vol. ii. Howlet's Select Views of Lincolnſhire, 4to.

Boston, the capital of the ſtate of Maſſachuſett's, in America, the largeſt town of New England, and the fourth in ſize and rank in the United States, lies in N. lat. 42° 23′ 15″, and W. long. 70° 52′ 42″. This town, together with the towns of Hingham, Chelſea, and Hull, conſtitute the county of Suffolk; and it is diſtant 61 miles S. by W. from Portſmouth, 164 N. E. from New Haven, 252 N. E. from New York, 347 N. E. from Philadelphia, and 500 N. E. from the city of Waſhington. It is built upon a peninſula of irregular form, at the bottom of Maſſachuſett's bay, and is joined to the land by an iſthmus at the ſouth end of the town leading to Roxbury. Its length, including the neck, is 3 miles; that of the town itſelf is not quite 2 miles; its wideſt part, 726 yards. The peninſula contains about 700 acres (ſome ſay 1000), in which are about 2600 dwelling-houſes. The number of inhabitants, in 1790, was 18,038; but it has ſince been much augmented, ſo that in 1800, they amounted to 24,937. The town is interſected by 97 ſtreets, 36 lanes, and 26 alleys, beſides 18 courts, &c. many of which are irregular and incommodious. State-ſtreet is very ſpacious, and connecting in a line with Long wharf, where ſtrangers uſually land, exhibits a flattering idea of the town. Boſton contains 19 edifices for public worſhip; 9 for congregationaliſts, 3 for epiſcopalians, and 2 for baptiſts. The Friends, Roman catholics, Methodiſts, Sandemanians, and Univerſaliſts, have alſo one appropriated to each. Moſt of them are ornamented with beautiful ſpires, and furniſhed with clocks and bells. The other public buildings are the ſtate-houſe, court-houſe, a theatre, concert-hall, Faneuil hall, gaol, alms-houſe, work-houſe, bridewell, and powder magazine. Franklin place, adjoining Federal ſtreet theatre, contains a monument of Dr. Franklin, and is reckoned a great ornament to the town. A magnificent ſtate-houſe is alſo erected on the ſouth ſide of Beacon-hill, fronting the mall, and overtopping the monument on Beacon-hill. The market-place, in which Faneuil hall is ſituated, is plentifully ſupplied with all kinds of proviſions, both from the country, and from the ocean, and rivers.

The harbour of Boſton is formed by point Alderton on the ſouth, and by Nahant point on the north. It is ſufficiently capacious to admit 500 veſſels to ride at anchor in good depth of water; but the entrance is ſo narrow, as hardly to allow two ſhips to paſs a-breaſt. It is diverſified with about 40 iſlands, the greateſt number of which conſiſt of rocks and banks of ſand, ſlightly covered with verdure; but about 15 of them afford excellent paſturage, hay, grain, and agreeable places of reſort in ſummer to parties of pleaſure. At the diſtance of about three miles from the town is Caſtle-iſland, the fortifications of which, formerly called Caſtle-

William, defend the entrance of the harbour and ſufficiently garriſoned for a peace eſtabliſhment. The light-houſe ſtands on a ſmall iſland at the north entrance of the channel (point Alderton and Nantaſket heights being on the ſouth), and is about 65 feet high. In ſteering for it from cape Cod, the courſe is W.N.W. when within one league of the cape; the diſtance from cape Cod to the light-houſe is about 16 leagues; and from cape Anne the courſe is S.W. diſtant ten leagues. A cannon is lodged and mounted at the light-houſe, to anſwer ſignals. Of the iſlands, ſeven only are within the juriſdiction of the town, and taxed with it; *viz.* Noddle's, Hog, Long, Deer, Spectacle, Governor's, and Apple iſlands. The wharfs and quays in Boſton are about 80 in number, and very convenient for veſſels. Long wharf, or Boſton pier, extends from the bottom of State-ſtreet, 1743 feet in a ſtraight line into the harbour; its breadth is 104 feet, and at the end of it are 17 feet of water at ebb-tide. Adjoining to this wharf on the north, is a covenient wharf, called from its former proprietor, and its form, Minot's T. Here veſſels are ſupplied with freſh water from a well ſurrounded by ſalt water, and dug at a great expence. On the north ſide Long wharf is covered with large and commodious ſtores; and a canal has been cut, in order to connect this harbour with Roxbury.

In approaching Boſton from the ſea, it preſents a beautiful and pictureſque object. It lies in a circular but irregular form round the harbour, and is ornamented with ſpires, above which the monument of Beacon-hill riſes pre-eminent, bearing on its top a gilt eagle, with the arms of the Union; and on its baſe, a variety of inſcriptions commemorating ſome of the moſt remarkable events in the late war. Beacon-hill is the higheſt point of land on the peninſula; the common below it contains about 45 acres, refreſhed by perpetual breezes; and on its eaſt ſide is the Mall, a pleaſant walk, about 600 yards long, adorned with rows of trees. Charles river, and Weſt Boſton bridges, are highly uſeful and ornamental to Boſton; and both are erected on Charles river, which mingles its waters with thoſe of Myſtic river in Boſton harbour. Charles river bridge connects Boſton with Charleſtown, in Middleſex county, ſtands on 75 piers, and is 1503 feet long, and 42 feet broad. Weſt Boſton bridge ſtands on 180 piers, and is 3483 feet long, and 40 feet wide. Both bridges have draws for the admiſſion of veſſels, and lamps for the benefit of evening paſſengers. Boſton has ſeven free ſchools, ſupported at the public expence, in which the children of all citizens are freely admitted; and beſides theſe, many private ſchools.

The principal ſocieties in the commonwealth hold their meetings in this town; theſe are the Marine Society, American Academy of Arts and Sciences, Maſſachuſett's Agricultural Society, Maſſachuſett's Charitable Society, Boſton Epiſcopal Charitable Society, Maſſachuſett's Hiſtorical Society, Society for Propagating the Goſpel, Maſſachuſett's Congregational Society, Medical Society, Humane Society, Boſton Library Society, Boſton Mechanic Aſſociation, Society for the Aid of Emigrants, Charitable Fire Society, and ſeven reſpectable lodges of free and accepted maſons.

For the ſupport of the foreign and domeſtic trade of Boſton, which is very conſiderable, there are four banks; *viz.* the branch of the United States bank, the Union, the Maſſachuſett's, and the Boſton, banks; the Maſſachuſett's bank conſiſts of 800 ſhares of 500 dollars, equal to 400,000; the capital of the Union bank is 1,200,000 dollars, 400,000 of which is the property of the ſtate. The principal manufactures of Boſton conſiſt of rum, loaf-ſugar, beer, ſail-cloth, cordage, wool, and cotton cards, playing cards, pot and pearl-aſhes, paper-hangings, hats, plate-glaſs, tobacco, and chocolate. It has 30 diſtilleries, 2 breweries, 8 ſugar-houſes, and 11 rope-walks. The number of the different ſtages that run, through the week, from this town, is upwards of 20; and on the great road between Boſton and New Haven, there are conſtantly employed 20 carriages and 100 horſes.

For the government of Boſton, nine ſelect men are annually choſen; and at the ſame time are choſen a town-clerk, a treaſurer, twelve overſeers of the poor, twenty-four firewards, twelve clerks of the market, twelve ſcavengers, twelve conſtables, and a number of other officers. Beſides thoſe called "trained bands," there are four other military companies in Boſton; *viz.* the ancient and honourable artillery company, the cadets, fuſileers, and artillery.

The ſettlement of Boſton took place as early as the year 1631 from Charleſtown. It was called by the Indians Shaumut, and by the ſettlers from Charleſtown, Trimountain, from the view of its three hills; and it derived its preſent name from reſpect to the Rev. Mr. Cotton, a miniſter of Boſton, in England, and afterwards miniſter of the firſt church in this place. In 1727, it was much damaged by an earthquake, and has ſince frequently ſuffered ſeverely by fires, its houſes having been moſtly built of wood. The revolution, whence America dates its independence, commenced at Boſton. Morſe.

BOSTON *Corner*, a tract of land adjoining mount Waſhington, in Berkſhire county, and ſtate of Maſſachuſetts, containing 67 inhabitants.

BOSTON, *New*, a townſhip of Hilſborough county, New Hampſhire; 12 miles S.W. by W. from Amuſkeag falls, 60 miles W. of Portſmouth, and equally diſtant N.W. from Boſton.

BOSTRA, BOTSRA, BOSRA, or BOZRAH, in *Ancient Geography*, one of the principal towns of Arabia, and the capital of a canton or province called "Auranite." It was the capital of the eaſtern Idumæa, and the royal reſidence of Joba, the ſon of Zerah, duke of Edom; and in ſcripture hiſtory, it is commonly mentioned as ſituate in a wilderneſs, becauſe it ſtood on the confines of Arabia Deſerta. It was, however, in thoſe times to which the ancient biblical hiſtory refers, a conſiderable place; having been made a Levitical city by Joſhua, and a city of refuge. It is likewiſe celebrated by ancient writers and medals; and ſeveral of its biſhops, at a later period, aſſiſted at ſome of the ancient councils. It was diſtant four days' journey from Damaſcus, had a very ſtrong caſtle, a gate 20 cubits high, and one of the largeſt baſons or reſervoirs in the Levant. It was captured by Alexander the Great, after the battle of Iſſus, and he ſeems to have been much attached to it; but after his death it became ſubject to the Seleucidan kings of Syria, until the time of Antiochus Dionyſus, when it was conquered by an Arabian prince. Under the reign of Trajan, it was ſubjected to the dominion of the Romans. At this time it was comprehended in a province of Arabia; and Trajan adorned it with many ſumptuous edifices, eſtabliſhed it as a new city, and gave the inhabitants permiſſion to denominate it "Trajana." The emperor Septimius Severus enlarged this city, whence ſome have regarded him as its founder. This prince, or his immediate ſucceſſors, conferred upon it the names and honours of a metropolis. Under the reign of Alexander Severus, it was conſidered as a place of importance, on account of its ſituation on the frontiers of the empire; and it was thought worthy of receiving a Roman colony. In honour of Alexander Severus, it aſſumed the name of "Alexandrianna." The two principal divinities worſhipped at Boſtra were Bacchus and Urania. Bacchus Dionyſus was, according to Diodorus Siculus, the Oſiris of the Egyptians; and this deity was denominated "Duſaris" by the Nabatæan Arabs in the vicinity of Boſtra. Accordingly, the inhabitants of this city engraved a figure of their god Duſares on their medals at Boſtra. There was alſo a temple of the goddeſs Urania, which was engraved on a medal of Septimius Severus, and alſo on one of the empreſs Mammæa. The worſhip of Jupiter Ammon, and of Serapis, was alſo admitted into Boſtra, and they received from the Greeks that of Jupiter Pius or Amicus. The citizens of Boſtra regarded Urania as the tutelar deity of their city. The Duſarian games, which were firſt diſcovered on medals under the reign of the emperor Philip, were celebrated at Boſtra in honour of Duſares, the Bacchus of the Arabians. When Arabia was divided, after the conqueſt of it by Trajan, Boſtra was appointed the metropolis of that part which retained the name of Arabia; and its biſhop afterwards became the metropolitan of the eccleſiaſtical province. See Bosra.—Another town of the ſame name, but leſs celebrated, is mentioned among the Moabite cities, in Jer. ch. xlviii. v. 24.

BOSTRYCHITES Lapis, derived from βοστρυχιζω, *I fold the hair in braids*, in *Natural Hiſtory*, a name given by ſome to a ſtone ſuppoſed to contain women's hair included in it: ſome have underſtood by it, thoſe pieces of cryſtal which have accidental foulneſſes in them, reſembling hair, or pieces of hair, cauſed by earthy or metalline matter; others call by this name thoſe German agates, which contain either the confervæ or other capillary water plants, or other foulneſſes running into their form; the firſt of theſe very frequently have the confervæ of great length, and variouſly undulated and turned about, ſo as very elegantly to repreſent a looſely flowing lock of hair.

Bostrychites is alſo a name given by ſome authors to a ſpecies of pyrites, whoſe irradiations were ſuppoſed to imitate hair.

BOSTRICHUS, in *Entomology*, a genus of Coleopterous inſects diſtinguiſhed by having the antennæ clavated, the club ſolid; thorax convex, with a ſlight margin; head inflected, and concealed under the thorax. Gmel. Fabr. &c. The ſpecies of this genus are capucinus, flavicornis, elongatus, typographus, chalcographus, polygraphus, micrographus, bidentatus, ſcolytus, crenatus, pygmæus, ligniperda, piniperda, teſtaceus, varius, vittatus, minutus, maculatus, bifaſciatus, limbatus, fuſcus, and piloſus.

BOSTWICKS, in *Geography*, a poſt-town of America, in Stokes county, N. Carolina, 290 miles from Waſhington.

BOSULS, a town of France, in the department of the Aveiron; 3½ leagues N.E. of Rhodez.

BOSWELL, James, in *Biography*, ſon of Alexander Boſwell, lord Auchinleck, one of the judges in the ſupreme court of ſeſſion, and juſticiary in Scotland, was born at Edinburgh, Oct. 29, 1740, and received the firſt rudiments of education in that city. He afterwards ſtudied civil law in the univerſities of Edinburgh and Glaſgow; and during his reſidence in theſe cities, he formed an intimate acquaintance with ſome Engliſh ſtudents, which produced a predilection for their manners, that contributed in a great degree to his future habits and attachments. Ambitious, in early life, of diſtinguiſhing himſelf by his literary talents, he was ſo fortunate as to obtain the patronage of the late lord Somerville, of which he always retained a grateful remembrance. In 1760, he viſited London, to which he became much attached, and where he fixed his principal reſidence. Here he enjoyed the advantage of cultivating an acquaintance with ſeveral perſons of literary character, to whom he recommended himſelf by his attention, and by the urbanity of his manners. Although his father had intended him for the profeſſion of the law, his own inclination led him to wiſh for a commiſſion in the army; but he gave up this object in deference to lord Auchinleck's perſuaſion, and at his deſire returned to Scotland; and renewing his attention to the law, purſued a courſe of regular inſtruction, and paſſed his trials as a civilian at Edinburgh. In compliance with his father's wiſhes, he attended the lectures of an excellent civilian at Utrecht, in the winter of 1762; and afterwards obtained permiſſion to make his grand tour of Europe. During his winter's reſidence at Utrecht, he viſited ſeveral parts of the Netherlands, and then commencing his projected travels, he paſſed from Utrecht to Germany, and purſued his route through Switzerland to Geneva; from hence he croſſed the Alps into Italy, paying his reſpects, in the courſe of his journey, to Voltaire at Ferney, and to Rouſſeau in the wilds of Neufchatel. In Italy, he aſſociated with lord Mountſtuart, to whom he afterwards dedicated his "Theſes Juridicæ." From Italy he ſailed to Corſica, and, traverſing the iſland, he obtained the friendſhip of Paſcal de Paoli, in whoſe palace he reſided during his ſtay. From Corſica he went to Paris; and returning to Scotland in 1766, he ſoon after became an advocate at the bar in that country. In the famous Douglas cauſe, which was at that time a ſubject of diſcuſſion, he publiſhed a pamphlet entitled "The Eſſence of the Douglas Cauſe," which contributed to his popularity. In 1768, appeared his "Account of Corſica, with Memoirs of General Paoli," which was highly ſpoken of by Dr. Johnſon, and tranſlated into the German, Dutch, Italian, and French languages. His prologue, written in the winter of this year, on occaſion of opening the theatre royal at Edinburgh by David Roſs, eſq. was flattering to the author, and beneficial to the manager, as it ſecured to the latter the uninterrupted poſſeſſion of his patent till his death in Sept. 1790. In the celebration of the Shakſpeare jubilee at Stratford-upon-Avon, in 1769, Mr. Boſwell took a conſpicuous part, appearing at the maſquerade exhibited on that occaſion, under the character of an armed Corſican chief. In 1783, he publiſhed his letter to the people of Scotland, which, according to the opinion given of it by Dr. Johnſon, in a letter to the author, "contains very conſiderable knowledge of hiſtory and the conſtitution, very properly produced and applied." As this letter was ſanctioned by the approbation of Mr. Pitt, it was ſoon followed by another, in which Mr. Boſwell diſplayed his uſual energy and political talents. In 1785, he publiſhed "A Journal of his Tour to the Hebrides," with Dr. Johnſon; and in the ſame year he removed to London, where he was called to the Engliſh bar. But his profeſſion ſeems to have been leſs the object of his attention than the "Life of Dr. Johnſon," for which he had been collecting materials from the commencement of his acquaintance with him in the year 1763, to the time of his death, and which was publiſhed in 2 vols. 4to. in 1791. Few perſons can be ſuppoſed to be better qualified for this undertaking than Mr. Boſwell; for he had known, and he had familiarly, and almoſt daily, converſed with Dr. Johnſon for more than twenty of the laſt years of his life; during which, he was happy in the kind regard and unreſerved confidence of his venerable friend, who, as we are informed by Mr. B. himſelf, was fully apprized of his biographical intention, and manifeſted no diſapprobation of it. Of this work, which of courſe became very popular, it will be ſufficient to obſerve, that it exhibits a faithful hiſtory of Johnſon's life, exemplified in a variety of anecdotes, that rendered it equally inſtructive and entertaining. The laſt literary performance of Mr. Boſwell was the preparation of a ſecond edition of this work. Mr. Boſwell combined, with conſiderable intellectual powers, a gay and active diſpoſition; and he often experienced an unaccountable depreſſion of ſpirits. In one of his gloomy intervals he compoſed a ſeries of eſſays under the title of the "Hypochondriac," which appeared in a periodical publication about the year 1782, and which he once thought of collecting into a volume. Soon after his return from a viſit to Auchinleck, he was ſeized with a diſorder which put an end to his life, in Portland Street, June 19th, 1795, in the 55th year of his age. At the cloſe of his journal of the tour to the Hebrides, after having given a ſketch of his own character, he introduces, not indeed without an apology, the encomium of Dr. Johnſon, whoſe friendly partiality to the companion of his tour repreſents him as one "whoſe acuteneſs would help my inquiry, and whoſe gaiety of converſation and civility of manners are ſufficient to counteract the inconveniences of travel in countries leſs hoſpitable than we have paſſed." He loſt his wife, to whom he was married in 1769, in the year 1790, and ſhe left him two ſons and three daughters. She was a lady, who to the advantages of a polite education united a ſuperior underſtanding; and on occaſion of her death he honoured her memory with an affectionate tribute. Biog. Dict.

BOSWORTH, Market, in *Topography*, a town in Leiceſterſhire, England; ſituated on a hill, and celebrated in hiſtory as the neareſt place of note to the ſcene of battle between Richard III. and Henry earl of Richmond. The manor anciently belonged to the earls of Leiceſter, and by a partition came to Saer de Quincy, earl of Wincheſter, who, in the reign of king John, gave it to Richard de Harcourt, of Stanton Harcourt, in Oxfordſhire, whoſe deſcendant Richard Harcourt, when lord of the town, obtained from Edward I. the privileges of a market (Wedneſday) and a fair. The manor continued in this family till Henry VIII.'s reign, when it came to the marquis of Dorſet; and from him, by the earl of Huntingdon, to ſir Wolſtan Dixey knight, whoſe heirs are, or lately were, owners of it. Boſworth is 106 miles N.W. from London, and contains 120 houſes and 791 inhabitants. The church is large, contains ſome ancient arms and monuments, and has a beautiful ſpire; it had five chapels belonging to it. There is a free-ſchool, of which Anthony Blackwall, a learned divine, was maſter, and Samuel Johnſon (afterwards LL.D. ſo celebrated in the literary world) his uſher. Thomas Simpſon, the mathematician, was born here in 1710, who, from indigent circumſtances, and the buſineſs of ſtuff-weaving, acquired ſo deep a knowledge of mathematics, as to rank him with the moſt ſcientific men of the age, and to raiſe him to the profeſſorſhip at Woolwich, and F.R.S. He died at Boſworth, 1761. See Simpson. Nichols's Hiſtory of Leiceſterſhire, ſee *Market Boſworth*, et ſeq.

Bosworth, *Battle of*, in *Hiſtory*. This battle, on which the kingdom of England depended, and which terminated the civil war between the houſes of York and Lancaſter, was fought Auguſt 22, 1485, on a large flat plain, called Radmore plain, 3 miles from Boſworth, and 4 miles from Hinckley, between Henry earl of Richmond at the head of 6000 men, and king Richard III. with an army above double that number: about 100 of the former were ſlain, and about 4000 of the latter. The battle, which laſted little more than two hours, was decided by the death of Richard, as his followers then ſought ſafety in flight, and left Richmond maſter of the field and kingdom. Richard fought with ſingular intrepidity; his body, being found among the ſlain, was ignominiouſly thrown acroſs a horſe, and carried to Leiceſter, where it was interred in the Grey Friars church. Many relics of this battle have at various times been found by digging and ploughing in the field. Theſe were ſpurs, rings, armour, croſs-bows, arrow-heads, &c. King Richard's well, and Crown hill, where Richmond harangued his army, preſerve the identity of the place. Henry's Hiſt. of England.

BOTABA, in *Geography*, the name of one of the Ladrones, or Marian iſlands.

BOTABOTA, in *Ornithology*, a name given by ſome writers to that ſpecies of ſea ſwallow (*hirundo eſculenta*), whoſe neſts are ſo famous for ſoups in China, and in ſome of the iſlands in the Indian ocean. See Esculenta Hirundo. The neſts are ſuppoſed to be reſtorative, and greatly provocative to venery; for which laſt quality it is that the eaſtern nations in general are ſo fond of them. See Bird's *Neſts*.

BOTAGIUM, in *Middle Age Writers*, a fee paid for wine ſold in *botæ*, or *buts*.

Wine that taſtes of the caſk is called *vinum botatum*.

BOTALE Foramen, in *Anatomy*, an aperture in the heart of a fœtus, whereby the blood is enabled to circulate, without going into the lungs, or the left ventricle of the heart. See Foetus, Circulation, and Heart.

BOTALLUS, Leonard, in *Biography*, an eminent phyſician of Piedmont, flouriſhed about the middle of the 16th century. He was a diſciple of Fallopius, and took his degree of doctor in medicine at Padua. It appears by his writings, that he was a diligent obſerver, and enjoyed a conſiderable ſhare of practice. That he was in great eſtimation, appears by his having been made in ſucceſſion phyſician and aulic counſellor to Charles IX. Henry II. of France, and to William prince of Orange. He was alſo ſkilled in the practice of ſurgery, having been inſtructed under his brother in the camp of the prince of Orange, whom he cured of a wound, in which the carotid artery had been injured. His works are, "De curandis vulneribus ſclopetorum," 8vo. 1560, Venet. This has been frequently reprinted, and continued, for a long time, to be eſteemed the moſt uſeful manual that had been publiſhed on the ſubject. "Commentarioli duo, alter de medici, alter de ægroti, munere," 1565, Lion, 8vo.; in this he lays down rules for the conduct of the phyſician, the ſurgeon, and the apothecary, in their attendance upon the ſick. But the work by which he is moſt known, and which produced an important revolution in the practice of medicine, is his "De curatione per ſanguinis miſſione, de incidendæ venæ, cutis ſcarificandæ, et hirudinum affigendarum modo," Antw. 1583, 8vo. Though bleeding had always been occaſionally uſed in the cure of diſeaſes, yet in his time it was nearly conſtantly ſuperſeded by purging medicines, or it was too ſparingly uſed, and ſeldom repeated. Our author made frequent recourſe to it, with complete ſucceſs, he ſays, in diarrhœa, dyſentery, in fever, the plague, and during pregnancy, in which caſes it was nearly prohibited. Flattered with the ſucceſs with which his practice was attended, he became, as he advanced in life, more and more bold and free in the uſe of the lancet, and has left records of caſes, in which he bled his patients ten times, or oftener. He even recommends bleeding in quartan fevers, and in dropſies. The reputation the author acquired, ſoon procured him proſelytes; and bleeding became a general remedy all over Europe; but in no country was it carried to ſuch exceſs as in France, where the profeſſors of medicine, for their too frequent recurrence to it, were held up to ridicule by Le Sage, in his inimitable novel of Gil Blas. The mania has at length ſubſided; and bleeding is now conſidered by them as a valuable, but not as an univerſal remedy. The works of Botallus were collected, and publiſhed under the title of "Opera Omnia," in 1660, at Leyden, by I. V. Horne. Haller. Bib. Med. Pract. et Chirurg. Eloy. Bib. Hiſt.

BOTANIST, a perſon who underſtands the nature, hiſtory, and diſtinction of vegetables, on ſettled and certain principles, and can call every plant by a diſtinct, proper, and intelligible name. Linnæi Fundam. Botan. p. i, See BOTANY.

BOTANOMANCY, formed of *βοτανη*, *herb*, and *μαντεια*, *divination*, a ſpecies of ancient divination by means of plants, particularly ſage and fig-leaves. The perſons who recurred to it, wrote their own names and their queſtions on leaves, which they expoſed to the wind; and as many of the letters as remained in their own places, were taken up, and being joined together, contained the required anſwer.

BOTANOPHILI, among the writers on the ſubject of vegetables, thoſe who have treated of them, not as botaniſts, on their natural and eſtabliſhed diſtinctions, but in regard to different operations, as gardeners, phyſicians, &c.

BOTANY, is that branch of natural hiſtory which relates to what is uſually called the vegetable kingdom, the ſecond of the three grand aſſemblages into which all terreſtrial objects are divided. Its name, *βοτανη*, is the Greek word for graſs, and is derived from the verb *βοω*, or *βοσκω*, which ſignifies to feed; becauſe graſs is the chief food of thoſe animals which are moſt uſeful to man. By a proceſs not uncommon in language, its meaning has been extended to the whole vegetable creation; and, by a familiar figure of ſpeech, it is now employed to denote the natural hiſtory of plants.

Botany, as a ſcience, is not confined to the deſcription and claſſification of plants, as ignorance has often been pleaſed to repreſent it, but comprehends many other important particulars. Its various objects may be conveniently arranged under the following general heads.

I. The terminology, or deſcription and nomenclature of the ſeveral parts of a plant which are externally viſible.

If all natural objects were ſimple in their form, it would not be eaſy to diſtinguiſh one from another; nor would it be poſſible to deſcribe them, ſo as to give a clear and preciſe idea of them. Hence a boundleſs variety, connected with general reſemblances, is wiſely and benevolently made their univerſal character. Every plant is compoſed of ſeveral parts, which differ from each other in their outward appearance, and which cannot fail to ſtrike the moſt careleſs ſpectator. Many of them alſo are themſelves compound, and are obviouſly capable of being divided into ſubordinate parts.

The firſt grand diviſion, adopted by moſt botaniſts, is into the *root*; the *body* of the plant; and the *fructification*. The laſt, or ſomething equivalent to it, is eſſential to all plants; the firſt is viſible in almoſt all; and the ſecond is not wanting in many.

The *root* is ſtated by Linnæus to conſiſt of the *radicle*, and the *deſcending caudex*. The *radicle* is that fibrous part which draws nouriſhment from the earth, and in many plants conſtitutes the whole of the root. The *deſcending caudex* is properly part of the ſtock, or body of the plant, which extends itſelf below the ſurface of the ground, as the aſcending caudex riſes above it. That the aſcending and deſcending caudex have preciſely the ſame nature is evident from the well-known fact, that if a young tree be inſerted, what was before the root will produce leaves, while the former ſtem throws out radicles.

Roots are divided, according to the term of their duration, into *annual*, *biennial*, and *perennial*. The *annual* and *biennial* produce flowers and fruits only once, and then ſoon die; the former paſſing through all the ſtages of vegetable life in one ſeaſon; the latter throwing out root-leaves the firſt year, but not completing the fructification till the next. The *perennial* root has within itſelf a principle of continued life, and gives being to new flowers and ſeeds, year after year, to an indefinite length of time. Of the roots that are called perennial, ſome are truly, others imperfectly ſuch. In the true perennial root, the deſcending caudex and the radicle preſerve the ſame individual organization, and increaſe in ſize as long as the plant continues to flouriſh. The imperfectly perennial, are the bulbous and the tuberous, which periſh themſelves, after producing the bulbs, the tubers, or the tubercles, which are to be the parents of future plants. See ROOT, CAUDEX, BULB, TUBER, and TUBERCLE.

The *body* of the plant ſprings from the root, and is terminated by the fructification. It is called by Linnæus the *herb*, and, according to him, conſiſts of the *trunk*, the *leaves*, the *fulchra*, props or ſupports, and the *hybernacula*, or buds; all which will be explained under their reſpective articles.

The *fructification* is a temporary part of the vegetable, deſigned to perpetuate the ſpecies, by producing a perfect ſeed, in which is contained the rudiment of a plant, ſimilar to that by which it was generated. Its eſſential parts are the *ſtamen* and the *piſtil*; the former correſponding with the male, and the latter with the female, in the animal kingdom. The ſtamen conſiſts of the filament and the anther; the piſtil of the germ, or ſeed-bud, the ſtyle, and the ſtigma. They are generally protected by two coverings; the outward called the *calyx*, and the inward the *corolla*; but in many kinds of plants, either one or the other, and, in ſome, both of them are wanting. The piſtil, in the laſt ſtage of its growth, is the parent of the ſeed, or ſeeds, which are either naked, or encloſed in a *pericarp*, or ſeed-veſſel. The *receptacle* or baſe on which the fructification is ſituated, is commonly conſidered as one of its parts; and connected with it there is in many plants a viſible *nectary*, or honey-cup. See the articles FRUCTIFICATION, STAMEN, PISTILLUM, CALYX, COROLLA, SEED, PERICARP, RECEPTACLE, and HONEY-CUP.

II. The claſſification or arrangement.

A knowledge of the different parts of a plant muſt neceſſarily be gained before it can be deſcribed. But amidſt the numerous vegetable productions of even a ſingle country, this, of itſelf, would avail but little. To give a peculiar name to every individual, would be a labour which no invention or diligence can perform; and, if accompliſhed, would produce a burden which no memory can ſuſtain. It is neceſſary, therefore, to purſue reſemblances and differences through a number of gradations, and to found on them primary and ſubordinate diviſions; either aſcending from particulars to generals, or deſcending from generals to particulars. The former is the method in which ſcience of every kind is ſlowly formed and extended; the latter, that in which it is moſt conveniently taught. The number of ſtages through which theſe ſubdiviſions ſhould be carried, is either not pointed out by nature, or enough of nature is not known to fix them with preciſion. They differ, therefore, in different ſyſtems, and, unfortunately, correſponding ones, have not always been called by the ſame names. Linnæus has employed four principal diviſions, which he has called *claſſes*, *orders*, *genera*, and *ſpecies*; occaſionally introducing an intermediate one between the order and the genus, and another between the genus and the ſpecies.

A *ſpecies* conſiſts of individuals, reſembling each other in the form, poſition, proportion, and general appearance of their ſeveral parts, produced from ſimilar individuals, and having a power to produce other individuals of the ſame kind; or, as it is conciſely defined by Juſſieu, it is a perennial ſucceſſion of ſimilar individuals, deriving their origin from a ſucceſſive generation. Theſe individuals are not, indeed, exactly like each other in every minute reſpect; ſuch a perfect conformity does not exiſt in any two individuals, either of animate or inanimate organized nature. But the difference between thoſe of the ſame ſpecies, though ſufficiently diſcernible by the eye, cannot eaſily be expreſſed in words. With a ſtrongly marked reſemblance in all their parts, there is a perpetual variation in their outline, and other particulars; ſo that no two individuals, lying one upon the other, will entirely correſpond. They are formed after the ſame model, not caſt in the ſame mould. In the general, an accurate deſcription of all the parts belonging to any individual, will diſcriminate the whole ſpecies. There are, however, ſome ſenſible qualities of importance enough to be diſtinguiſhed by proper names, which are, in many caſes, too uncertain to enter into a ſpecific character. Of theſe, ſize, colour, ſmoothneſs, or hairineſs of ſurface, and luxuriance of one part at the expence of another, are the chief; and they are owing either to difference of ſoil, climate, particular expoſure, and other accidents; or, to artificial cultivation, the moſt abundant ſource of perpetual varieties.

A *genus* is an aſſemblage of ſpecies, connected with each other by one or more common characters, but ſtill preſerving their ſpecific diſtinctions.

An *order* is a ſimilar aſſemblage of genera.

A *claſs* bears the ſame relation to its orders; and as it ſtands at the top of the ſeries, it ſeizes the moſt general and moſt widely diffuſed reſemblances, and comprehends the greateſt number of particular differences.

A natural arrangement of the ſpecies, genera, orders, and claſſes, free, in every inſtance, from heterogeneous combinations, and diſturbing no real affinities, is the *ne plus ultra* of claſſification. It is a conſummation devoutly to be wiſhed; it is the point of perfection which every naturaliſt ſhould labour to approach, though what no one can expect actually to reach. To have formed the idea is no ſmall advance in the progreſs towards it, and implies a very conſiderable acquiſition of knowledge.

Moſt of the ſyſtems which have hitherto been propoſed, are profeſſedly artificial; that is, founded on a few parts of a plant, with little or no regard to the reſt. The calyx, the corolla, the ſexual parts of the fructification, and the mature fruit, have, each in their turn, been ſelected for this purpoſe by different ſyſtematic writers. A ſlight ſketch of ſome of the principal ſyſtems will be found below in the hiſtory of botany, and a fuller explanation will be given, with critical remarks, under the article CLASSIFICATION. But, as the ſyſtem of Linnæus is that which has been adopted in this work, we ſhall now briefly illuſtrate its general principles.

In this ſyſtem, the fructification has been juſtly conſidered of the firſt conſequence. The characters of the claſſes, orders, and genera, are accordingly taken entirely from it.

In the greater number of plants, the parts of fructification may be readily diſcerned by the naked eye, or with the aſſiſtance of a common lens; but there are alſo not a few in which they have not been ſatisfactorily diſcovered, or are too minute to be deſcribed with ſufficient accuracy, for the purpoſe of ſyſtematic arrangement.

In moſt of thoſe whoſe parts of fructification have been clearly aſcertained and diſtinctly deſcribed, the ſtamens and piſtils are incloſed within the ſame envelope; or, at leaſt, are abſolutely contiguous; but, in ſome, they are contained in ſeparate flowers, or placed at a diſtance from each other. In both caſes, there is much variety with reſpect to their number, poſition, and other circumſtances.

On theſe diſtinctions the diſtribution into claſſes and orders is founded. The characters of the claſſes are taken excluſively from the ſtamens; thoſe of the orders, either from the ſtamens or the piſtils, but moſt generally from the piſtils.

The firſt eleven claſſes, with the exception of the fourth and ſixth, regard ſimply the number of the ſtamens, and derive their names from the Greek word ανηρ, which ſignifies a male, or huſband, compounded with the numerals, μονος, alone, or one; δυω, two; τρεις, three; τετρα, four; πεντε, five; εξ, ſix; επτα, ſeven; οκτο, eight; εννεα, nine; δεκα, ten; δωδεκα, twelve.

Claſs, 1. Monandria. Flowers with 1 ſtamen
2. Diandria. - - - 2 ſtamens.
3. Triandria. - - - 3 ſtamens.
4. Tetrandria. - - - 4 ſtamens, all of the ſame length.
5. Pentandria. - - - 5 ſtamens.
6. Hexandria. - - - 6 ſtamens, all of the ſame length.
7. Heptandria. - - - 7 ſtamens.
8. Octandria. - - - 8 ſtamens.
9. Enneandria. - - - 9 ſtamens.
10. Decandria. - - - 10 ſtamens.
11. Dodecandria. - - 12 ſtamens.

The twelfth and thirteenth claſſes are called, from the general number of their ſtamens, icoſandria and polyandria (εικοσι, twenty, πολυς, many); but their real character depends entirely on the part to which they are attached; for there are icoſandrious plants which have more, and polyandrious ones, which have fewer than twenty ſtamens.

12. Icoſandria. Flowers with about twenty ſtamens attached to the calyx, or ſometimes, in part, to the corolla.

13. Polyandria. Flowers moſt commonly with more than twenty ſtamens, attached to the receptacle.

The fourteenth and fifteenth claſſes have always two ſtamens ſhorter than the reſt. Their names are taken from the number of thoſe which are longer, compounded with the Greek word δυναμις, power, implying a ſuperior rank or dignity.

14. Didynamia. Flowers with two longer ſtamens.

15. Tetradynamia. Flowers with four longer ſtamens.

The next three claſſes are determined by the union of the filaments, or lower parts of the ſtamen, into one or more bundles or brotherhoods. Their names are derived from the Greek word αδελφος, brother, compounded with the numerals, one, two, and many.

16. Monadelphia. Filaments united into one brotherhood.

17. Diadelphia. Filaments forming two brotherhoods.

18. Polyadelphia. Filaments forming more than two brotherhoods.

In the nineteenth claſs the anthers, or ſuperior part of the ſtamens, are united, and compoſe a hollow cylinder, through which the ſtyle of the piſtil paſſes. It is called ſyngeneſia, from the Greek work συγγενεσις, to denote the union of the parts which poſſeſs the power of rendering the piſtil fertile.

19. Syngeneſia. Anthers united.

The twentieth claſs is called gynandria, from γυνη, female, and ανηρ, male; it is diſtinguiſhed by the attachment of the ſtamens to the piſtil itſelf, and not, as in other flowers, either to the receptacle, calyx, or corolla.

20. Gynandria. Stamens on the piſtil.

The twenty-firſt and twenty-ſecond claſſes conſiſt of plants which have the ſtamens and piſtils in ſeparate flowers, growing from the ſame or from different roots. Their names are derived from οικος, a houſe, compounded with the numerals, one and two.

21. Monœcia. Staminiferous and piſtiliferous flowers on the ſame plant.

22. Diœcia. Staminiferous and piſtiliferous flowers on different plants.

The twenty-third claſs has been formed for ſuch plants as have ſome flowers with both ſtamens and piſtils, and others with only ſtamens or piſtils. It is called polygamia, from πολυς, many, and γαμος, marriage, implying a diverſity in the mode of connection between the ſtamens and piſtils.

23. Polygamia. Different diſpoſitions on the ſame plant.

The twenty-fourth and laſt claſs comprehends all the plants which have inconſpicuous flowers, and of which the fructification is conſequently, in a great meaſure, unknown. It derives its name from κρυπτος, private, and γαμος, marriage.

24. Cryptogamia. Flowers inconſpicuous.

The principles on which the claſſes are formed in the ſexual ſyſtem, will be diſtinctly ſeen in the following ſynoptic table.

SYNOPTIC TABLE OF THE LINNÆAN CLASSES.

Flowers	viſible	Stamens and piſtils in the ſame flower.	Stamens and piſtils not united in any of their parts.	Relative length not regarded.	1 ſtamen	1. Monandria.
					2 ſtamens	2. Diandria.
					3 ſtamens	3. Triandria.
					5 ſtamens	5. Pentandria.
					7 ſtamens	7. Heptandria.
					8 ſtamens	8. Octandria.
					9 ſtamens	9. Enneandria.
					10 ſtamens	10. Decandria.
					12 ſtamens	11. Dodecandria.
					about 20 ſtamens attached to the calyx	12. Icoſandria.
					generally more than 20 attached to the receptacle.	13. Polyandria.
				of equal length	4 ſtamens	4. Tetrandria.
					6 ſtamens	6. Hexandria.
				of unequal lengths, two always ſhorter.	2 long, 2 ſhort	14. Didynamia.
					4 long, 2 ſhort	15. Tetradynamia.
			Stamens and piſtils united in ſome of their parts.	by their filaments	into one brotherhood	16. Monadelphia.
					into two brotherhoods	17. Diadelphia.
					into more than two brotherhoods	18. Polyadelphia.
				by their anthers		19. Syngeneſia.
				united, and attached to the piſtil		20. Gynandria.
		Stamens and piſtils in different flowers.	ſtaminiferous and piſtiliferous flowers on the ſame plant			21. Monœcia.
			ſtaminiferous and piſtiliferous flowers on different plants			22. Diœcia.
			perfect and imperfect flowers on the ſame or different plants			23. Polygamia.
	ſcarcely viſible, ſo that their fructification has not been diſtinctly deſcribed					24. Cryptogamia.

After theſe twenty-four claſſes, the palmi are placed in the way of appendix, becauſe their fructification has not hitherto been ſufficiently deſcribed.

By attending to theſe few ſimple and eaſy characters, the botanical ſtudent may readily find out under what claſs he is to look for any unknown plant, the name of which he is deſirous to learn. He is next to inquire to which order of the claſs it belongs.

The orders of the firſt thirteen claſſes are founded entirely on the number of the piſtils; and are called monogynia, digynia, trigynia, &c. from γυνη, female, or wife, compounded, as in the names of the claſſes, with the Greek numerals. The ſtyles are to be counted from the baſe, and not from the upper part, which is often divided into two or more ſegments, without deſtroying the monogynous character of the flower. When the ſtyles are wanting, the number of ſtigmas determines the order.

In the claſſes didynamia and tetradynamia, none of the genera have more than one ſtyle; the characters of the orders are therefore taken from the pericarp.

The claſs didynamia has two orders; the firſt is diſtinguiſhed by its naked ſeeds, incloſed, till ripe, in the permanent calyx inſtead of a pericarp. Its name, gymnoſpermia, is derived from γυμνος, naked, and σπερμα, ſeed.

The ſecond has its ſeeds in a pericarp, and is called angioſpermia, from αγγειον, a veſſel, and σπερμα.

The claſs tetradynamia has alſo two orders, diſtinguiſhed by the form of the pericarp; the firſt called ſiliculoſa, from ſilicula, a little pod; the ſecond, ſiliquoſa, from ſiliqua, a pod. See SILICULA, and SILIQUA.

In the claſſes monadelphia, diadelphia, and polyadelphia, the orders are denominated from the number of the ſtamens, triandria, pentandria, &c.

In the claſs ſyngeneſia, the orders are more complex. They are ſix in number; the firſt five are diſtinguiſhed by the epithet polygamia, intimating that the flowers are compound, and conſiſt of numerous florets, or little flowers, ſeated on a common receptacle.

In the firſt order, polygamia æqualis, all the florets are equally poſſeſſed of ſtamens and piſtils.

In the ſecond, polygamia ſuperflua, the florets of the diſk, or central part of the compound flower, have both ſtamens and piſtils; thoſe of the ray or circumference have only piſtils, but the latter, as well as the former, produce fertile ſeeds.

In the third, polygamia fruſtranea, the florets of the diſk have both ſtamens and piſtils; thoſe of the ray, neither one nor the other, or only abortive piſtils.

In the fourth, polygamia neceſſaria, the florets of the diſk have efficient ſtamens, but abortive piſtils; thoſe of the ray, fertile piſtils impregnated by the ſtamens of the diſk.

In the fifth, each floret has its own calyx, in addition to that which ſurrounds the common receptacle, and forms the whole into one compound flower.

The ſixth differs from the reſt in having only ſimple flowers, referred to this claſs on account of the union of their anthers. It has been lately aboliſhed by the general conſent of botaniſts, and the plants formerly included in it have been referred to the claſs pentandria.

In the claſſes monœcia and diœcia, the orders have the ſame names as the preceding claſſes, and are diſtinguiſhed by the number of the ſtamens, or by the union either of the filaments or of the anthers, or by the attachment of the ſtamens to the piſtil.

The orders of the twenty-third claſs are denominated from the number of houſes or plants on which the ſeveral kinds of flowers are found.

In the order monœcia, there are ſome flowers with ſtamens and piſtils, and others that have either only ſtamens or only piſtils on the ſame plant.

In the order diœcia, they are perfect, and only ſtaminiferous or perfect, and only piſtiliferous flowers on two diſtinct individual plants.

In the order triœcia, the different kinds of flowers are diſtributed among three diſtinct individual plants.

The claſs cryptogamia is divided into four great families;

1. Filices, or ferns.
2. Muſci, or moſſes.
3. Algæ, which term properly implies ſea-weeds; but beſides theſe, it contains ſeveral numerous terreſtrial genera, which ought to conſtitute a diſtinct order.
4. Fungi.

When the order to which a plant belongs is aſcertained, its genus is next to be inveſtigated. The characters of the genera are univerſally taken from ſome part of the fructification, and are advantageouſly exhibited in ſynoptic tables, which will be found under the names of the claſſes in their proper places.

III. The ſynonyms of plants; or the names by which they are diſtinguiſhed in the writings of profeſſed botaniſts and others, from the earlieſt times to the preſent.

It is evident, that a multiplicity of names for the ſame plant is unavoidable in common life; but it may be thought not likely that ſcientific men ſhould willingly increaſe the number. This, however, is the natural conſequence of a gradual improvement in knowledge. As genera were formed, and ſpecies accurately diſtinguiſhed, it became neceſſary to invent generic and ſpecific names. As generic characters were ſettled with greater preciſion, former diſpoſitions were neceſſarily changed, and many plants of courſe appeared under a different generic appellation. The nomenclature of the early botaniſts has, therefore, in the natural courſe of things, become obſolete; and, to avail ourſelves of their obſervations, it is neceſſary to know what they called the various plants which have ſince received new names. To form an accurate collection of ſynonyms is a work of great difficulty and labour, which has exerciſed the diligence and diſcernment of all who have entered deeply into the ſubject, and is ſtill far from complete. It is much to be lamented that the perplexity has been greatly increaſed by the licentious caprice of even good botaniſts. Linnæus himſelf has ſometimes departed from the nomenclature of his predeceſſors, without any good or apparent reaſon.

In a work like the preſent, intended for occaſional conſultation, peculiar attention ought to be paid to this perplexing part of ſcience; and we eſteem it incumbent upon us to ſpare no pains in collecting, not only the ſynonyms of the moſt eminent botaniſts, but alſo the vulgar Engliſh names of indigenous plants, as well as thoſe given by unſcientific nurſerymen and gardeners to exotics.

IV. The ſenſible qualities of plants, or the different manner in which they ſeverally affect the organs of ſight, ſmell, taſte, and touch.

Of theſe, colour is the moſt general and the moſt ſtriking. The colours of plants are indeed ſo wonderfully diverſified, and ſo conſtantly meet the eye, whenever it is directed to the face of nature, that they contribute, more than any other quality, to the beauty of the creation. They are too ſubject to accidental variation, to be ſafely employed as ſpecific characters; but they are in many caſes ſo nearly uniform and conſtant, that they ought not to be entirely neglected. It is not poſſible, indeed, to do more than expreſs a few leading diſtinctions. In the deſcription of their minute ſhades, and gradual approximation to a kindred tint, the powers of language utterly fail. The prevailing colour of vegetables, conſidered in their appearance as a whole, is green; but this green is not, perhaps, preciſely the ſame in any two ſpecies of plants, or in different parts of the ſame plant, or even in the ſame part of the ſame plant in different ſtages of its growth. All that can be done is to point it out generally, by ſtating its relation to white or black, or by fixing upon the colour of ſome well-known plant, or other natural ſubſtance, not as a mark of identity, but as a ſtandard of compariſon. Thus we ſpeak of light green, and dark green, of apple green, and olive green, &c.

The colours of plants are divided by Linnæus into

Hyaline, with the tranſparence either of water or of glaſs.

White, either cream-coloured or ſnowy.

Cinereous, either grey, livid, or lead-coloured.

Black, either dark or jet black.

Yellow, either ſulphur, flame, or copper-coloured.

Red, either crimſon, fleſh-coloured, or ſcarlet.

Purple, more or leſs approaching to violet.

Blue.

Green.

It is ſcarcely neceſſary to obſerve, that this enumeration is very imperfect. The different parts of plants have moſt commonly their appropriate colour. Roots and ſeeds are frequently black, the pericarp rarely, the corolla ſcarcely ever. The ſtem, the leaves, and the calyx are generally green, the corolla very ſeldom. The filaments and the piſtil are often hyaline. The anthers are often yellow, as is alſo the corolla, eſpecially in autumnal flowers. Vernal corollas and ſweet berries are frequently white. Red is common in ſummer flowers, and ſubacid berries growing in the ſhade. Blue is not unfrequent in corollas.

The priſmatic colours afford ſome fixed points of compariſon in the deſcription of colours; but there is no ſimilar natural ſtandard for the diſcrimination of odours and taſtes. However ſcanty and obſcure the vocabulary of the former may be, that of the latter is, therefore, ſtill more ſo. The ſenſe of ſmelling and the ſenſe of taſte have an evident and intimate connection with each other. Herbs and fruits that are grateful to the palate have almoſt always a pleaſant ſmell; but the reverſe does not equally hold; an agreeable perfume does not, in all caſes, warrant the expectation of delicious food. Every plant has an odour and flavour peculiar to itſelf, and differing from all others in kind as well as in ſtrength. They are diſcriminated, according to the manner in which they affect the ſenſe, by a few general expreſſions, which have little or no preciſe meaning.

Odours are,

Ambroſiac, or muſky, as in ſweet woodruff (aſperula odorata) and muſk geranium.

Fragrant, as in jeſſamine and violet.

Aromatic, as in cinnamon, ſaſſafras, and cloves.

Unpleaſantly ſtrong, as in garlic and herb robert (geranium robertianum).

Stinking, as in elder (ebulus) and ſtinking may-weed (anthemis fœtida).

Nauſeous, or diſpoſing to vomit, as in hellebore, aſarabacca, and coloquintida.

Sharp, as in muſtard.

Faint, as in primroſe and lilac.

Taſtes are,

Sweet, as in ſugar-cane and fig.

Acid, as in tamarind and lemon.

Fat, or oily, as in freſh almonds and olives.

Salt, as in ſalſola, and other maritime plants.

Bitter, as in wormwood.

Aſtringent, as in the fruit of the quince. This kind of taſte is either auſtere, partaking a little of the acid, as in unripe fruits, or acerb, rough, partaking more of the bitter, as in the common ſloe.

Viſcous, as in the fruit of the common jujube (rhamnus ziziphus). It produces only a ſlight ſenſation on the palate.

Acrid, as in garlic. It is ſometimes cauſtic, as in the berries of daphne mezereon.

Dry and inſipid, as in farinaceous ſeeds, and ſeveral kinds of bark.

Watery, as in cucumber and lettuce.

Nauſeous, as in tobacco.

Plants affect the touch, as they are fleſhy or membranous, ſoft or harſh, ſmooth or rough, ſilky, hairy, or prickly, &c.

V. The anatomy of plants, or deſcription of the different viſible parts of which their ſubſtance is compoſed. Theſe are,

1. The *epidermis*, or thin cuticle which inveſts the whole of the plant.
2. The *cellular* or *reticular ſubſtance*, which appears in the young ſhoot of a tree after the epidermis is ſtripped off.
3. The *liber*, inner or true bark.
4. The *alburnum*, or *blea*, improperly called by Engliſh dealers in wood, the ſap, a ring of imperfect wood between the liber, and the true wood.
5. The *lignum*, or true wood, conſiſting of concentric ſtrata or rings.
6. The *pith*, a ſpungy ſubſtance incloſed in a longitudinal canal, which conſtitutes the innermoſt part of the plant.
7. The *medullary productions*, or filaments proceeding from the pith, and croſſing the ſtem in a radiate direction, as far as the cellular ſubſtance.
8. The *medullary appendices*, filaments placed between the medullary productions, and reaching no farther than the wood.
9. The *tracheæ*, or air-veſſels.
10. The *ſap-veſſels*, and
11. The veſſels which ſecrete the peculiar juices of the plant.

VI. The phyſiology of plants.

A plant, like an animal, is a very compound, organized, living being, in which various operations, both chemical and mechanical, are continually carrying on, from its firſt production to its final diſſolution. It ſprings from a ſeed fertilized by the pollen of its parent plant. It takes in foreign ſubſtances by its inhaling and abſorbent veſſels. It elaborates and aſſimilates to its own ſubſtance thoſe parts of them that are nutritious, and throws off the reſt. It ſecretes a variety of fluids by the means of glands, and other unknown organs. It gives that motion to its ſap on which the continuance of its life depends. See the articles PHYSIOLOGY *of Plants*, VEGETABLE, and VEGETATION.

VII. The purpoſes to which different plants are applied, either as articles of food, ingredients in the compoſition of medicine, or materials and inſtruments in the uſeful and elegant arts; the ſoil and ſituation in which they are generally found, and which are moſt favourable to their growth; the time of the year in which they open their flowers, and ripen their fruit, with many other incidental particulars, are properly within the province of the botaniſt. But, as a botaniſt, he is concerned with nothing more than the ſimple facts. The beſt methods of cultivating ſuch as are raiſed in conſiderable quantities for the ſpecial uſe or amuſement of man; the theory of their nutritious or medicinal properties; and the manner in which they are to be prepared, ſo as to effect the intended purpoſes; are the province either of the farmer, the gardener, the phyſician, the chemiſt, or the artiſt. But as they cannot, in this work, be conveniently introduced under their reſpective ſciences, they will generally be annexed to the botanical details of each particular plant.

VIII. The hiſtory of botany.

In all ages of the world, vegetables have been a principal article of human food. We can, therefore, ſcarcely doubt, that ſome intimations of the kinds which are moſt proper for this purpoſe, muſt have been given to our firſt parents by immediate revelation from their Creator. Such intimations, however, would be no more than was abſolutely neceſſary to preſerve them from dying by famine, on the one hand, or by the deleterious effects of poiſonous plants on the other. They would extend only to a few ſalutary roots, herbs, and fruits; and agreeably to the general economy of human life, all farther acquiſitions in knowledge would be the reſult of occaſional experiments and ſlow experience. A knowledge of the various ſpecies would then gradually increaſe, and ſome general diſtributions would ſpontaneouſly offer themſelves to notice. A woody trunk would ſoon be diſtinguiſhed from an herbaceous ſtem. A tree and a ſhrub, an annual and a perennial herb, would not long be confounded with each other. The moſt ſtriking differences in the form and conſiſtence of the fruit would alſo be readily obſerved. Moſes, as appears from the firſt chapter of Geneſis, was acquainted with three characteriſtic diviſions: *graſs*, of which the ſeed was probably for ſome time overlooked or diſregarded; *herbs*, which bear their ſeed in a dry pericarp or ſeed veſſel; and *trees*, with all other vegetables, which have their ſeed incloſed in a pulpy or ſome other eatable ſubſtance. And it is worthy of remark, that in the grant of vegetables to man for the purpoſe of food, only the two latter are mentioned; the firſt being reſerved for "the beaſts of the earth, and the fowls of the air, and every thing that creepeth on the earth." Among theſe a ſelection would ſoon be made of ſuch as were moſt grateful to the palate, and the other ſenſes. Whatever were the Dudaim which Rachel begged of the ſon of Leah, and which our tranſlators have abſurdly rendered mandrakes, it is certain, from the ſong of Solomon, that they were a kind of fruit which gave a pleaſant ſmell. Solomon is celebrated for his knowledge of plants: but all that we know of it is, that he ſpake of them from the cedar of Lebanon to the hyſſop that groweth on the wall. It could not, moreover, be very long before the early race of mankind began to perceive that ſome vegetable productions are mildly nutritious, and others actively medicinal. In the frequent ſearch after new viands, which the reſtleſs curioſity and craving deſire of diverſified gratification, natural to man, would induce him to make, he would find ſome that produced violent effects on his bodily frame, and relieved or removed diſorders, which are always the "ſources of pain, and often the forerunners of death." This would give a new direction to his inquiries, and would preſent the vegetable creation to him in a more intereſting point of view. Pain is, in all caſes, ſo difficult to be borne, that whatever promiſes to diminiſh it, is ſought for with unwearied aſſiduity.

The knowledge of medicinal plants was, therefore, regarded as a highly valuable attainment many ages before plants themſelves were made the objects of a diſtinct ſcience. Botany long continued the humble but engaging handmaid of ſurgery and medicine. The balm of Gilead bore a high price in the eſtimation of a Jew, becauſe it was ſtrongly and rapidly aſſociated with the idea of a phyſician. In Homer, Patroclus ſtaunches the bleeding wound of Eurypylus with the juice of a bitter root, the virtues of which he had learned from Achilles, and Achilles from Chiron. The power of the moly, uſed as an internal antidote againſt the incantations of witchcraft, is likewiſe celebrated by the ſame poet; and the knowledge of it is ſaid to have been owing to the intervention of a god. That great honour was obtained by an acquaintance with the medical properties of plants, in the heroic ages, is evident from the encomium given to the wife of one of the heroes whom Neſtor boaſts of having ſlain in his youth:

"Ἡ τοσα φαρμακα ηδη οσα τρεφει ευρεια χθων."
"Who knew the virtues of each earth-born herb."

At a much later period, we ſhall ſearch in vain for any information concerning the botany of the ancients, except in their medical writers. Hippocrates, the oldeſt of thoſe of whom we have any remains, and who flouriſhed at the beginning of the Peloponneſian war, of courſe makes mention of the plants which were then employed in the cure of diſeaſes; but he gives only their names, with their real or ſuppoſed ſanative qualities. Ariſtotle, who lived about half a century after, and whoſe comprehenſive genius left ſcarcely any thing unexplored, could not overlook ſo obvious and attractive a purſuit: but the two books now exiſting which bear his name, are of ſuch inferior merit, that they are generally thought to be ſpurious. Theophraſtus, the diſciple of Ariſtotle, is the firſt profeſſed writer on plants, whoſe works have inconteſtibly deſcended to modern times. He was acquainted with about five hundred, and has left deſcriptions of them, with ſlight philoſophical ſketches relating to ſome of their moſt prominent diſtinctions. But his deſcriptions are ſo vague and imperfect, that, in moſt caſes, it is difficult, in many impoſſible, to determine what plant he intended. And he has made only a rude attempt to divide them into grand families, either by their ſize and texture, as trees, ſhrubs, and herbaceous plants, or by the uſes to which they were then commonly applied.

From the age of Theophraſtus to that of Dioſcorides and Pliny, there is an interval of 400 years. Dioſcorides was a phyſician, and wrote entirely as ſuch. He has enumerated about 600 plants; but his account of them is ſo brief and indeterminate, that, in a botanical view, they are of little value. Nor, in this reſpect, is Pliny entitled to much greater praiſe.

During the dark ages which ſucceeded the downfal of the weſtern empire, almoſt all the knowledge on this ſide of the Indus was confined to the courts of the Mahometan caliphs. The Arabian and Mooriſh phyſicians cultivated the art of medicine with no inconſiderable degree of ſucceſs, and tranſlated the beſt Greek writers on the ſubject into their own language. But in the inveſtigation of plants, they were not much, if at all, ſuperior to their maſters. We are, however, indebted to them for the knowledge of ſenna, caſſia fiſtula, manna, tamarinds, rhubarb, and ſome other medical drugs, which ſtill keep a place in the Materia Medica.

At the revival of literature in the weſt, the ancients were truly conſidered as the depoſitaries of nearly all the knowledge that then exiſted. It ſeemed, therefore, as neceſſary as it was natural, that their writings ſhould, for a time, be excluſively ſtudied. For what ſteps towards a farther progreſs could be advantageouſly taken, till what was already done was clearly aſcertained? As a general idea, it was a good one: but its application to natural hiſtory was unfortunate. For in this branch of knowledge the ancients had done nothing to much purpoſe. The lovers of botany, however, buoyed up by vain expectations, devoted themſelves diligently to the ſtudy of Theophraſtus, Dioſcorides, and Pliny; and much time was idly ſpent in endeavouring to find, on the weſt of the Adriatic, all the plants which have been mentioned by thoſe authors. Commentators ſucceeded commentators; conjecture ſuperſeded conjecture: till at length a few intelligent minds, weary of fruitleſs attempts, perceived the folly of ſtudying a ſcience in the imperfect remains of two dead languages, when they might have free acceſs to the fair and legible characters of a book always open, and inviting their regard by inconteſtible marks of unerring knowledge and wiſdom.

Geſner, in particular, the greateſt naturaliſt whom the world had ſeen ſince the days of Ariſtotle, cultivated both zoology and botany, with a zeal which has never been ſurpaſſed; with a diſcernment and good ſenſe which till then had never been known. He has the glory of having firſt diſcovered the expedience of dividing plants into claſſes, genera, and ſpecies, and the neceſſity of taking the diſtinguiſhing characters of each diviſion from the flower and fruit. He died of the plague in 1565, at the early age of fifty.

Cluſius, who was his contemporary, and many years his ſurvivor, engaged in the ſtudy of plants with equal ardour, but not with equal talents for juſt arrangement. He diſtributed them chiefly according to their ſize, their general habit, and their other ſenſible qualities.

At this time alſo flouriſhed Dr. William Turner, who may be accounted the father of Engliſh botany. It was he who firſt gave names to many Engliſh plants; and much praiſe is indiſputably due to him for his diligence in examining, and judgment in diſcriminating, different ſpecies: but with reſpect to arrangement, he was far inferior even to Cluſius; for he has diſpoſed his plants in the alphabetical order of their Latin names. The firſt part of his Herbal was printed at London in 1551; the ſecond at Cologn, 1562; and the third, dated Welles, in 1564. It is in the black letter; and contains figures of moſt of the plants.

In the ſame period lived Dodonæus, or Dodoens, who began to publiſh in 1552; and in 1583 collected all his works into one volume, which he quaintly called, "Stirpium hiſtoriæ ſex Pemptades," becauſe each larger diviſion conſiſts of five books.

This work is the foundation of Gerard's Herbal, ſo well known in England, and ſo long regarded as a ſtandard book by the merely Engliſh botanical ſtudent. It was publiſhed in 1597, and comprizes the whole vegetable kingdom in three books. The firſt contains the graſſes, grain, ruſhes, reeds, flags, and bulbous-rooted plants; and exhibits a remarkable approximation to the arrangement of a very modern ſyſtem, founded on natural affinities. It was ſuggeſted, however, by a regard not to the monocotyledinous character of the ſeeds, but to the ſimplicity and general form of the leaves. The ſecond includes all herbs uſed for food, for medicine, or for their beauty and elegance. The third is a motley aſſemblage of trees, ſhrubs, fruit-bearing plants, reſins, gums, roſes, heaths, moſſes, muſhrooms, and ſea-plants.

It was left to the judgment of Cæſalpin to begin to execute what the penetrating mind of Geſner had firſt conceived; the arrangement of the whole vegetable creation in a regular ſyſtem. His diſtinctive characters are taken from the different appearances of the fruit, ſometimes modified by the conſideration of other parts; and though it cannot boaſt of being the beſt in theory, or the moſt eaſy in practice, it poſſeſſes great merit as the firſt eſſay in a difficult and important undertaking. Cæſalpin is particularly worthy of regard, as the firſt writer who has diſtinctly mentioned the true difference of ſexes in plants. He died in 1603.

The laſt of the writers of this period are the two Bauhins. John, the eldeſt, was the friend of Geſner, and travelled with him into Italy; but, though ardent in his love of plants, he had no turn for ſyſtematic arrangement, and added nothing to botany, conſidered as a ſcience. He wrote a general hiſtory of plants, which was publiſhed in three folio volumes, but not till 1650, 27 years after his death.

Gaſpard, his brother, was much his junior in years, but far exceeded him in the greatneſs of his conceptions, and the extent of his ſervices to their favourite purſuit. The publication of his "Pinax Theatri Botanici," in 1623, makes a new era in botany. This immenſe work, the fruit of forty years' labour, threw over the ſubject, as it then ſtood, a clear and conſpicuous light, and ſhewed at one view the information which had been given by a multitude of ſcattered authors. It afforded a reſting-place, a kind of fixed point, from which new excurſions were to be made, and new atchievements were to be attempted. But though he ſmoothed and ſhortened the way for others, it muſt be acknowledged of him, as well as of his brother, that he added little to what had already been done.

Many acceſſions were ſoon after made to the number of known plants, by the labours of Pona and Zanoni in Italy, of Johnſon and Parkinſon in England, of Hernandez, Piſon, and Marcgrave in South America, and above all, of Rheede, who, in his "Hortus malabaricus," brought to light about 800 plants, natives of the Eaſt Indies. But botany, as a ſcience, made little progreſs for nearly half a century; when Moriſon, Ray, Rivinus, and Tournefort, all nearly at the ſame time, directed their attention to the claſſification of plants, and inveſtigated the true principles on which it ought to be formed. Moriſon, in a ſecond edition of Bruyner's "Hortus regius Bleſenſis," publiſhed at Paris in 1669, gave the rudiments of an arrangement, founded on the fruit; and alſo aſſerted, that the characters of the genera ſhould be taken from the ſame part: but in his hiſtory of plants, printed at Oxford in 1680, he did not ſtrictly adhere to his own principle. His ſyſtem was quickly ſucceeded, and its fame nearly eclipſed, by that of the immortal Ray, the outlines of which were firſt given, in 1682, in the "Methodus plantarum nova ſynopticè in tabulis exhibita: cum notis generum tum ſummorum tum ſubalternorum characteriſticis." The principal aim of this great naturaliſt was to preſerve the natural families of plants, as they are connected by a ſimilarity of fructification and general habit. Influenced by the latter conſideration, he retained the ancient diviſion of the vegetable kingdom into trees, ſhrubs, and herbaceous plants; making no alteration, except in claſſing with the latter what are generally called ſuffrutices or under-ſhrubs. This ſyſtem he afterwards improved and brought nearer to a natural arrangement; but he ſtill left the characters of his genera in a great degree indeterminate, and governed by no fixed principle. The time was not yet come for taking this farther ſtep towards the perfection of the ſcience.

The claſſification of Rivinus, derived from the ſtructure of the corolla, was firſt made known to the world in 1690. It is more eaſy in practice than either of the former, but does more violence to the order of nature. It muſt, however, be mentioned, to his honour, that he was the firſt who perceived the propriety of not ſeparating trees from herbaceous plants. They are accordingly blended together in different parts of his ſyſtem.

As Moriſon ſoon yielded in celebrity to Ray, ſo Rivinus gave way to Tournefort, the glory of France, and equalled only by Ray, the glory of England. His elements of botany, in which the primary diviſions are taken from the corolla, and the ſecondary ones from the fruit, were publiſhed in 1694. His arrangement, indeed, is not unexceptionable in all its parts, but its imperfections ariſe from the defects of his principle; and though he did not define his genera in plain and appropriate terms, it is evident that he had formed juſt ideas of them in his own mind.

The fame of theſe two great men, who had done ſo much in promoting the progreſs of true ſcientific botany, obſtructed, for a conſiderable time, its farther advancement. It was vain for botaniſts to contend, either in England or

France, with the eſtabliſhed reputation and authority of their reſpectively favoured countryman. Several other ſyſtems were formed about the ſame time, among whom Boerhaave in particular had great merit; but none of them found many proſelytes, or could boaſt of long duration. The firſt publications of Linnæus made their way ſlowly, and with much difficulty. In England, ſo late as the year 1762, Mr. Hudſon was the firſt who publiſhed a national Flora, arranged on the principles of the Linnæan ſyſtem. In France, owing to the perſonal antipathy of Buffon, the ideas of the learned Swede met with much greater and more pointed oppoſition: but they found an early advocate in the duke de Noailles; and, in 1765, the claſſification was adopted in the "Flora Monſpeliaca," of profeſſor Gouan.

The diſtinction of ſexual parts in plants had been diſcovered, and pretty generally admitted, before the time of Linnæus: but he was the firſt who made it the baſis of an artificial ſyſtem. The firſt ſketch of his "Syſtema Naturæ," was publiſhed in 1735; and the "Fundamenta Botanica," in 1736. In 1737 they were followed by the "Critica Botanica," "Genera Plantarum," Hortus Cliffortianus," "Flora Lapponica," and "Methodus Sexualis." In 1751 appeared his great and moſt finiſhed elementary work, the "Philoſophia Botanica;" and in 1753, the firſt edition of the "Species Plantarum," which completed his ſyſtem, by extending it to the loweſt diviſion under which individual plants are collectively arranged. In his "Genera Plantarum," he had given a diſtinctneſs and preciſion to generic characters, which they had never before received; and in this laſt publication he conferred the ſame obligation on the ſpecies; with the addition of *trivial* names, conſiſting of a ſingle word, inſtead of the tedious *ſpecific* names, as they were called, by which the converſation of botaniſts had till then been burdened and embarraſſed. This innovation was at firſt violently condemned by a few diſciples of the old ſchools, from an apprehenſion that it would be unfavourable to the recollection of ſpecific diſtinctions; but its obvious convenience has long gained it univerſal currency.

Notwithſtanding the ſuperlative merit of Linnæus, he found a rival and an oppoſer in Switzerland, as well as in France. The mighty genius of Haller could not condeſcend to walk in the trammels of another man. In his hiſtory of the plants of Switzerland, ſtyled by the very able and judicious preſident of the Linnæan ſociety, one of the moſt excellent and complete Floras the world ever ſaw, he has adopted a method depending chiefly on the number of the ſtamens, combined with the diviſions of the corolla. But his ſyſtem is now little talked of, and leſs ſtudied.

Linnæus devoted the greateſt part of his life to the conſtruction and completion of a ſyſtem confeſſedly artificial; but he was nevertheleſs fully ſenſible, that the perfection of the ſcience requires an arrangement founded ſolely on natural affinities. The idea of ſuch an arrangement had been conceived, and partly executed, by ſeveral of his predeceſſors. The improved ſyſtem of Ray, in particular, is a noble eſſay towards reducing the whole vegetable creation into ſix natural families. All other diſtributions are only proofs of the preſent defective ſtate of knowledge, and are to be employed merely as helps for the attainment of a conſummate ſyſtem. Linnæus has accordingly left what he calls fragments of a natural order, without pointing out their peculiar diſtinguiſhing characters; and the ſubſtance of his lectures on natural orders has been publiſhed, ſince his death, by his pupil Giſeke, in which the omiſſion is, in ſome degree, remedied; though, at the ſame time, it is ſtrenuouſly maintained, that ſuch characters as ſhall be at once completely comprehenſive, and excluſively diſcriminating, are, in the nature of things, abſolutely impoſſible.

Adanſon, a French traveller in Africa, has alſo attempted to form natural families of plants, not from the conſideration of any particular part, but of all, without exception, from the root to the ſeed. But, independent of a multitude of other objections, it labours under the inſuperable impediment of having the diſtinctive characters of each family drawn out to the length ſometimes of four or five pages, without being capable of an abridgment.

The moſt ſucceſsful attempt of this kind is that of Anthony Lawrence de Juſſieu, the illuſtrious nephew of three illuſtrious brothers, who have been all diſtinguiſhed for their attachment to botany, and for their eminent ſervices to it. The outlines of this ſyſtem were ſtruck out by Bernard de Juſſieu, demonſtrator in the royal gardens at Paris; but owe their preſent more mature form to the ſkill and perſevering application of his nephew, who ſucceeded him in his office. It is founded firſt on the number of the cotyledons of the ſeed; next, on the inſertion of the ſtamens with reſpect to the piſtil, whether immediately on the receptacle, the calyx, or the piſtil itſelf; or mediately, by the means of the corolla, ſimilarly ſituated; and ſo on, from the eſſential to the non-eſſential, from the more to the leſs important parts, in a deſcending progreſſion, to ſuch as are the moſt variable and of the leaſt value.

A methodical diſpoſition of plants, from the character of the fruit, has lately been publiſhed by Gærtner, a German botaniſt, who has laboured in this eſſential part with greater diligence and accuracy than any other writer.

But notwithſtanding the acknowledged merit of theſe eſſays, the Linnæan ſtill continues the prevailing ſyſtem, to which all the new genera, conſtituted for plants ſince diſcovered, are regularly referred; and it is to the advantage of the ſcience, that it ſhould, for a long time yet to come, preſerve its aſcendancy. It is capable, indeed, of many improvements; but ſuch improvements ſhould be ſlowly and cautiouſly propoſed, always keeping in view an approximation to a natural order. Moſt of the projects, which have hitherto been formed for this purpoſe, betray more raſhneſs than acute diſcernment, more love of innovation than capacity for removing real imperfections. While they ſeem to acquire greater ſimplicity, they become actually more artificial, and more violently deſtroy the connection of natural affinities. The defalcations of the reſpectable Thunberg have not been generally admitted; the additional ones of Gmelin have been almoſt univerſally condemned; and Willdenow, the laſt and beſt editor of the Species Plantarum, has reſtored all the ejected claſſes. Dr. Smith, with his uſual judgment, has only expunged the order *monogamia* from the claſs *ſyngeneſia*, and retained in the claſs *polygamia* only ſuch plants as have an eſſential difference in the ſtructure of their perfect and imperfect flowers.

See the article CLASSIFICATION *of Plants*, where the different ſyſtems will be detailed and examined. See alſo the Bibliotheca Botanica both of Linnæus and of Haller; La Marck's Preliminary Diſcourſe to the botanical part of the French Encyclopædia; Dr. Smith's Introductory Addreſs to the Linnæan Society; Dr. Pulteney's View of the Writings of Linnæus; and his Sketches of the Progreſs of Botany in England.

BOTANY *Bay*, in *Geography*, a capacious bay on the eaſtern coaſt of New Holland, ſo called by captain Cook, who anchored there on the 20th of April 1770, from the great number of plants which were found in its vicinity by ſir Joſeph (then Mr.) Banks, and Dr. Solander. The land on the ſea-coaſt is moderately high, and nearly level, but in general higher than it is in the interior parts, and covered with ſteep rocky cliffs near the ſea, which reſemble a long iſland lying cloſe under the ſhore. The harbour lies about the middle of this land; and, in approaching it from the ſouth, is diſcovered before the ſhip comes a-breaſt of it; but from the north it is not diſcovered ſo ſoon. About the head of the harbour, there are large banks of ſand and mud, on which are great plenty of water-fowl, and large quantities of oyſters, muſcles, cockles, and other ſhell fiſh, which ſupply the natives who gather them by means of their little canoes in ſhoal-water, with the principal means of their ſubſiſtence. From the report of Cook, who carefully examined this coaſt, and took poſſeſſion of it in the name of the king of Great Britain, it was thought to be a deſirable ſituation for a ſettlement; and accordingly it was propoſed, at the cloſe of the American war, to tranſport felons thither, who were ſentenced to this kind of puniſhment. This plan was adopted in 1786; and the firſt ſhip ſailed from Spithead in January, 1787, and arrived thither in the ſame month of the following year. It appeared, however, from the report of Cook and other navigators, that it was ſubject to the inconvenience of a great ſcarcity of water, and on the arrival of the firſt ſettlers, that it afforded advantages for the eſtabliſhment of a colony much inferior to ſuch as they expected to find; the ſoil being ſwampy, water ſcarce, and the bay itſelf inconvenient for ſhipping, on account of the ſhallowneſs of the water, and its expoſure to the eaſterly winds: and it was therefore reſolved by governor Philips to transfer it to another inlet, about 12 miles farther to the north, called Port Jackſon, on the ſouth ſide of which, on a ſpot called Sydney Cove, this ſettlement is now fixed. For a further account of the ſettlements, and of the country, ſee *New* HOLLAND. Two French ſhips, called the Aſtrolabe and Bouſſole, which left France, on a voyage of diſcovery, under the command of M. la Peyrouſe, in 1785, arrived in this bay in the beginning of the year 1788; and during their ſtay, father La Receveur, who had come out in the Aſtrolabe, as a naturaliſt, died of the wounds he had received in a conflict with the inhabitants of Maſuna, one of the Iſles des Navigateurs, at which they touched. A monument, bearing an inſcription, was erected to his memory, but was ſoon deſtroyed by the natives. But governor Philips cauſed the inſcription to be engraved on copper, and nailed to an adjacent tree. Botany bay lies in S. lat. 34°, and E. long. 151° 21′.

BOTANY *Iſland*, an iſland in the Southern Pacific ocean, near the coaſt of New Caledonia; ſo called by captain Cook from the number and variety of plants it afforded. S. lat. 22° 26′ 40″. E. long. 167° 16′ 45″.

BOTARGO, a ſort of ſauſage, made of the milts and roſe of the mullet-fiſh, much uſed on the coaſt of the Mediterranean, as an incentive to drink. The manner of preparing botargo, as practiſed at Martegues in Provence, is deſcribed by Mr. Ray. The mullets, *mugiles*, are taken in "burdigoes," which are places in the ſhallows incloſed with hedges of reeds. The male mullets are called "alletants," the female "boter," of the roes or ſpawn of which the botargo is made thus:—They firſt take out the ſpawn entire, and cover it round with ſalt for four or five hours; then they preſs it a little between two boards or ſtones; then they waſh it, and at laſt dry it in the ſun for thirteen or fourteen days, taking it in at night. Ray Trav. p. 396, ſeq.

The method of making the botargo, in the towns of Koſlow and Kaffa, in Crim Tartary, on the coaſts of the Black Sea, where the mullet abounds, is as follows:—Immediately after the fiſh ſpawns, the ſpawn is put whole into a ſtrong brine, and ſlightly ſimmered; when it is thought to be ſufficiently done, it is put into pots, and covered with melted wax, to prevent it from ſpoiling; and it will then keep for a long while, and may be conveyed to very diſtant countries.

The people of Provence call it *bou-argues*. The beſt is brought from Alexandria and Tunis. There is alſo a manufacture of it near Marſeilles. It is much uſed throughout all the Levant, and uſually eaten with olive-oil and lemon-juice.

BOTARISSAS, *Strinſios ſive Botariſſas*, Bell. Aq. one of the ſynonyms of *gadus lota*, called alſo *claria fluviatilis* by the ſame author; by the Engliſh *eel-pout*, or *burbot*. See LOTA GADUS.

BOTATRISSA, in *Ichthyology*, ſynonymous with *botariſſas*, *eel-pout*, and *gadus lota*. See BOTARISSAS, and GADUS LOTA.

BOTAURUS, in *Ornithology*, a ſpecies of ARDEA, with a ſmooth black head; body above cinereous and fulcous, variegated; beneath rufous; lore and orbits naked and yellow; throat white, ſtreaked with black, and reddiſh. Gmel.

This is *botaurus major* of Briſſon, and *grand butor* of Buffon; *greater ſpeckled*, or *red heron* of Ray and Willughby; *greater bittern* of Latham.

Ardea botaurus is a native of Italy; length three feet nine inches; the bill is yellowiſh; irides yellow; feathers on the head and breaſt long and flowing.

BOTE, BOTA, in our old *Law-Books*, ſignifies compenſation, ſatisfaction, or amends, for any injury done. See ESTOVERS.

Hence *man-bote*, ſatisfaction due for a man ſlain. In king Ino's laws it is declared what was the rate ordained for this offence, according to the quality of the perſon ſlain.

Hence alſo *boteleſs* (charter of Hen. I. to Thomas, archbiſhop of York), where no judgment or favour will acquit a man; as, *v. gr.* for ſacrilege, &c. And hence our common phraſe *to boot*, ſpeaking of ſomething given by way of compenſation.

BOTE, *cart*, *fire-bote*, *hay-bote*, *houſe-bote*, *kin-bote*, *plough-bote*, *theft-bote*. See the adjectives.

BOTEFEUX, in *Gunnery*, are ſticks two or three feet long, and an inch thick, ſplit at one extremity, to hold an end of the match twiſted round it, for firing the cannon.

BOTENALKAITOS, a ſtar in the conſtellation Cetus, called alſo BATENKETOS.

BOTERNHOFEN, in *Geography*, a town of Germany, in the duchy of Holſtein, 9 miles S.S.W of Nordorp.

BOTEROLL, in *Heraldry*, is the tag of a broad-ſword ſcabbard, and by the French heralds eſteemed an honourable bearing.

BOTERVIGIE VAN BOER, in *Zoology*, (*Conus glaucus*, Linn.) is deſcribed under this name by Rumphius.

BOTESCART, in *Ancient Engliſh Writers*, the ſame with boatſwain.

BOTESDALE, in *Geography*, a market-town of Suffolk, in England, is ſeated near the borders of Norfolk, on the turnpike road which leads from that place to Bury St. Edmund's. It was formerly called Botolph's-Dale, from a chapel dedicated to that ſaint in a valley. This ſacred ſtructure had long continued in a ſtate of dilapidation, but Thomas Holt, eſq. and ſome neighbouring gentlemen, raiſed a ſubſcription, and had it properly repaired and fitted up for its original deſtination. This town enjoys the advantage of a free grammar ſchool, which was founded and endowed by the eminent ſir Nicholas Bacon, who was created the firſt baronet of England. He alſo bequeathed other legacies to the town; and the ſchool has been ſince enriched by the donations of other perſons. Boteſdale is annexed to the rectory of Redgrave, the church of which is highly intereſting to the hiſtorian and antiquary, from its incloſing the monuments and remains of ſir Nicholas Bacon and his lady, alſo another magnificent one for lord chief juſtice Holt. The latter is ſaid to have coſt 1500*l*. and the former (executed by Nicholas Stone) 200*l*. Both theſe illuſtrious men were ſucceſſively poſſeſſed of the lordſhip of Redgrave, where the abbot of Bury had previouſly "his faireſt country-ſeat." The fine old manſion has been ſucceeded by a modern building; and the place, now poſſeſſed by a deſcendant of chief juſtice Holt, is conſidered "one of the fineſt in the county" of Suffolk.

Boteſdale has a weekly market on Thurſday, and two annual fairs. It contains only 65 houſes, and 536 inhabitants, of which number 222 are employed in manufactures. From Norwich it is 27 miles, and from London 86 miles N.E. Gough's Camden, vol. ii. Magna Britannia, vol. iv.

BOTETOURT, one of the American counties in the ſtate of Virginia, ſituate between the Alleghany and Blue ridge; its chief town is Fincaſtle. The county is 44 miles long and 40 broad; and contains 8482 free inhabitants, and 1343 ſlaves.

BOTH, JOHN, in *Biography*, an eminent landſcape painter, was born at Utrecht in 1610, and, after having been the diſciple of Abraham Bloemart, went for improvement to Rome, where he reſided many years; directing his attention to landſcape, in which he attained to high perfection. His model was the ſtyle of Claude Lorraine; and ſome of his performances are mentioned in competition with thoſe of Claude. The warmth of his ſkies, the judicious and regular receding of the objects, and the ſweetneſs of his diſtances, afford a pleaſure ſuperior to that produced by the works of almoſt any other artiſt. His tints are ſo admirably formed as to expreſs not only the light of the morning breaking from behind hills and woods, and diffuſing a warm glow over the whole face of nature, and alſo the ſetting of the ſun with its tinge in the clouds, but even the different hours of the day. By his colouring he obtained the diſtinction of being called "Both of Italy." We have alſo by his hand a ſet of ten landſcapes, which are etched in a ſlight, free, maſterly ſtyle. He loſt his life by accidentally falling into a canal at Venice in 1650. Pilkington and Strutt.

BOTH, ANDREW, brother of the former, and diſciple of Bloemart, accompanied him to Rome, and applied to the ſtudy of figures, in which he imitated the ſtyle of Bamboccio with great ſucceſs. The two brothers mutually aſſiſted each other till the death of John; and then Andrew returned to his own country, where he painted ſometimes portraits, and ſometimes landſcapes, in the manner of his brother, and alſo converſations, and players at cards, in the manner of Bimboccio; and where he died in 1656. Andrew Both alſo etched ſome few plates in a free, maſterly ſtyle, reſembling that of Oſtade, *viz.* ſix ſmall upright plates of "Dutch merry-making," to which he affixed his name; "St. Antony praying with a ſcull before him," and "St. Francis with a crucifix before him," its companion. Pilkington and Strutt.

BOTH, in *Geography*, a river of Germany, in the circle of Bavaria, which runs into the Inn, near Scherding.

BOTH-*ſheets aft*, in *Sea Language*, expreſſes the ſituation of a ſhip ſailing right before the wind.

BOTHAGIUM, BOTHAGE, or BOOTHAGE, cuſtomary dues to the lord of the market, for the liberty of pitching and ſtanding of booths.

BOTHENA, BOTHNA, or BORTHNA, in the Scotch *Law*, a park or field wherein cattle are incloſed, and fed. The word is alſo written *barthena*; formed from the ancient Scottiſh *buth*, a flock of ſheep.

BOTHENA is alſo uſed for a barony, lordſhip, or ſheriffdom. In which ſenſe it is ordained by ſtatute, that the king's moot or court of each bothena, that is, each ſheriffdom, ſhall be held within forty days.

BOTHFELD, in *Geography*, a diſtrict of Germany, in the bailiwick of Calenberg, conſiſting of five villages, of which Bothfeld is parochial.

BOTHMAR, a county of Germany, in the principality of Zell, and 7 leagues W. of it; ſituate on the Reuſe.

BOTHNIA, EAST, *Oſter bottan*, Lat. *Oſtro-bothnia*, a province of Sweden, ſituated on the eaſt ſide of the gulf of Bothnia, whence it derives its name, is bounded on the north by Swediſh Lapland, on the eaſt by Ruſſia, on the ſouth by Finland, to which it properly belongs, and on the weſt by the gulf of Bothnia. Its extent has not been accurately aſcertained; by ſome it has been computed to be about 90 Swediſh miles long, and 40 broad; and by others its length has been eſtimated at 66 Swediſh miles, and its breadth at 12. It is ſeparated from Ruſſia and Finland, properly ſo called, by a chain of hills, which runs along its eaſt ſide. Theſe mountains ſupply large rivers, of which ſome diſcharge themſelves into the White ſea, and others into the gulfs of Bothnia and Finland. The country, eſpecially on the ſea coaſt towards the ſouth, is low and marſhy; however, the induſtry of the inhabitants has made it productive of corn, though the cold and froſt often diſappoint their hopes, and ſeveral tracts of land lie waſte. It abounds with wood, and its lakes and rivers yield plenty of fiſh. Some of the rivers are ſaid to have furniſhed pearls. The inhabitants derive their chief ſubſiſtence from agriculture, grazing, burning lime and tiles, and making pitch and tar. They alſo employ themſelves in fiſhing and hunting, ſhip-building, and the manufacture of wooden-ware. Thoſe who inhabit the rocky iſlands near the ſea-coaſt ſpeak the Swediſh language, but thoſe of the inland parts uſe that of Finland. The number of inhabitants is eſtimated at about 80,000, who are ſcattered over 28 pariſhes, 19 of which are occupied by Finns, and nine by Swedes, and which are under the juriſdiction of the biſhop of Abo. The commodities furniſhed by this country for exportation are timber, butter, cattle, fiſh, oil, pitch, tar, &c. Eaſt Bothnia is divided into three parts or lehns, which are under one governor. Its chief towns are Cajana or Cajaneborg, Utea, Braheſtad, Gemla-Carleby, Ny-Carleby, Jacobſtadt, Waſa, and Chriſtineſtadt.

BOTHNIA, *Weſt*, a province of Sweden, lying on the weſt ſide of the gulf of Bothnia, and bounded on the north and weſt by Lapland, on the ſouth by Angermanland, and on the eaſt by the gulf of Bothnia. That part of this province which is inhabited extends from the frontiers of Angermanland to the church of upper Tornea, and is computed to be about 58 Swediſh miles in length, and from 16 to 18 miles in breadth. Off the coaſt of this province are ſeveral pleaſant iſlands, and its interior has ſeveral foreſts, with lakes and rivers. It has alſo excellent paſtures among the mountains, the ſummit of which ſupplies the rein-deer with moſs. The ſoil is tolerably fertile, and produces corn, which is ſown late, and ripens in ſix, ſeven, or eight weeks, but which is often injured by the ſudden froſts of July. This province has ſeveral mines of copper and iron. The inhabitants are celebrated for their hardineſs and valour; they ſubſiſt by agriculture, grazing, hunting, and fiſhing; and even in fruitful years mix their corn with chaff and pulverized pine bark, with which they make their "ſtampe-brot," or pounded-bread. They traffick in beams, deal-boards, and other timber, ſhingles, tar, ſalted and ſmoke-dried ſalmon and other fiſh, wild fowl, veniſon, common train-oil, tallow, butter, and cheeſe; and alſo in ſables, and ſkins of blue and white foxes, ermines, bears, wolves, martens, hyænas, beavers, and rein-deer. Theſe commodities are carried by them, not

x. 3. and 2 Sam. xvi. 1. But the term, tranſlated “ earthen bottle,” in Jerem. xix. 1. is בקבק, *baklek*. A very different word is uſed in Judges iv. 19. to ſignify the veſſel out of which Jael gave milk to Siſera, it is called נאוד, *naud*, which, having ſome reference to moiſt or oozing, was probably made of goat-ſkin, or the ſkin of ſome animal, and being conſtantly kept full of milk, was preſerved in a pliant ſtate. The ſame word is alſo uſed to denote the bottle in which Jeſſe ſent wine by David to Saul, 1 Sam. xvi. 20. *Naud* is alſo uſed to expreſs the bottle into which the Pſalmiſt deſires that his tears might be collected, Pſ. lvi. 8.; and that to which he reſembles himſelf, Pſ. cix. 83. He ſays “ I am become like a bottle in the ſmoke,” *i. e.* like a bottle kept in the tents of the Arabs, blackened with ſmoke. To the meanneſs of ſuch a drinking veſſel as a goat-ſkin bottle, as well as to the blackneſs contracted in the Arab tent, the Pſalmiſt probably refers; and it was a moſt natural image for him to uſe, driven from among the veſſels of ſilver and gold in the palace of Saul, to live as the Arabs did, and conſequently to be obliged frequently to drink out of a ſmoked leather bottle. The word uſed by Job (ch. xxxii. 19.) in the plural, is אבות, *abuth;* and as אוב, *aub*, ſignifies, in general to ſwell or diſtend, it is properly uſed to expreſs a ſkin bottle, which would be made to ſwell by the liquor poured into it, and which would be more diſtended and enlarged, till they would at laſt burſt, if they had no vent, by the fermentation of the liquor as it advanced towards ripeneſs. Hence we perceive the propriety of putting new wine into new bottles, &c. according to the appropriate alluſion in the goſpels (Matt. ix. 17. Mark, ii. 22. Luke v. 37, 38.), which being moiſt and ſtrong, would reſiſt the expanſion, and preſerve the wine to due maturity; whereas old bottles of this kind, being dry and more brittle, would be in danger of burſting, and were beſt adapted to receive old wine, the fermentation of which had ceaſed. Theſe leather bottles are ſuppoſed, by a ſacred hiſtorian, not only to be frequently rent, when grown old and much uſed, but alſo to be capable of being repaired (Joſh. ix. 4.). Modern travellers, as well as ancient authors, frequently take notice of theſe leather bottles. The Arabs, ſays ſir John Chardin, and all thoſe who lead a wandering life, keep their water, milk, and other liquors, in theſe bottles, the manner of repairing which he alſo deſcribes. They ſerve, according to this writer, to preſerve their contents more freſh than in any other way. They are made, he ſays, of goat-ſkins: when the animal is killed, they cut off its feet and its head, and in this manner they draw it out of the ſkin without opening its belly. They afterwards ſew up the places where the legs were cut off, and the tail, and when it is filled, they tie it about the neck. Theſe nations, and the country people of Perſia, never go a journey without a ſmall leather bottle of water hanging by their ſide like a ſcrip. The great leather bottles are made of the ſkin of an he-goat; and the ſmall ones, that ſerve inſtead of a bottle of water on the road, are made of a kid's ſkin. In ſpeaking of the Perſians, the ſame traveller ſays, that they uſe leather bottles, and find them uſeful in keeping water freſh, eſpecially if people, when they travel, take care to moiſten them, wherever they find water. The evaporation thus furniſhed ſerves alſo to keep the water cool. He ſays, that the diſagreeable taſte of the leather is taken off, by cauſing it to imbibe roſe-water, when it is new, and before it is applied to uſe. Formerly, it is ſaid, the Perſians perfumed theſe leather veſſels with maſtic, or with incenſe. From him alſo we learn, that they put into theſe goat-ſkin and kid-ſkin veſſels every thing which they want to carry to a diſtance in the Eaſt, whether dry or liquid; they are thus preſerved freſher than if they were conveyed in boxes or pots; the ants and other inſects are prevented from getting among them; and they are thus kept free from duſt; and for theſe reaſons butter, honey, cheeſe, and other ſuch aliments, are incloſed in veſſels made of the ſkins of theſe animals. Accordingly, the things, particularly the balm and honey, which were ſomewhat liquid, that were carried to Joſeph as a preſent, (ſee Gen. xliii. 11.) were probably incloſed in little veſſels made of kid-ſkins. Homer alſo refers to this mode of preſerving various kinds of proviſion in leathern veſſels. Od. B. 354.

The bottles made of ſkin reſemble the “Girba,” deſcribed by Mr. Bruce, in his Travels through Abyſſinia, vol. iv. p. 334. “This,” he ſays, “is an ox's ſkin ſquared, and the edges ſewed together very artificially by a double ſeam, which does not let out water, much reſembling that upon the beſt Engliſh cricket balls. An opening is left in the top of the girba, in the ſame manner as the bung-hole of a caſk. Around this the ſkin is gathered to the ſize of a large handful, which, when the girba is full of water, is tied round with whip cord. Theſe girbas generally contain about 60 gallons each, and two of them are the load of a camel. They are then all beſmeared on the outſide with greaſe, as well to hinder the water from oozing through, as to prevent its being evaporated by the action of the ſun upon the girba, which, in fact, happened to us twice, ſo as to put us in imminent danger of periſhing with thirſt.”

Glaſs bottles are better for cyder than thoſe of ſtone. Foul glaſs bottles are cured by rolling ſand or ſmall ſhot in them; muſty bottles, by boiling them.

Bottles are chiefly made of thick coarſe glaſs; though there are likewiſe bottles of boiled leather made and ſold by the caſe-makers.

Fine glaſs bottles covered with ſtraw or wicket, are called *flaſks*, or *bettees*.

The quality of the glaſs has been ſometimes found to affect the liquor in the bottle. Mem. Acad. Scienc. 1704.

Bottle, is alſo a meaſure at Amſterdam, the ſame with the mingle.

Bottle, *blue*, in *Botany*. See Centaurea Cyanus.

Bottle, *moſs*. See Splachnum.

Bottle, *white*. See Cucubalus Behen.

Bottle-*head*, a ſpecies of whale.

Bottle-*noſe*, in *Natural Hiſtory*, a name given by the Engliſh to various animals; the *cachalot* is called the bottle-noſe; ſo alſo any of the whale tribe diſtinguiſhed by the gibboſity of their ſnout. In ſome parts of England the *anas arctica* of old writers is called the bottle-noſe.

BOTTLING, or Botteling, the operation of putting up liquors in bottles corked, to keep, ripen, and improve.

The writers on good huſbandry give divers rules concerning the bottling of beer, cyder, and the like. The virtues of Spa, Pyrmont, Scarborough, and other waters depend on their being well bottled and corked, otherwiſe they loſe both their taſte and ſmell. To preſerve them, it is neceſſary the bottles be filled up to the mouth, that all the air may be excluded, which is the great enemy of bottled liquors. The cork is alſo farther ſecured by a cement. Some improve their bottled beer, by putting cryſtals of tartar and wine, or malt ſpirits; and others, by putting ſugar boiled up with the eſſence of ſome herbs and cloves, into each bottle.

Cyder requires ſpecial precautions in the bottling; being more apt to fly, and burſt the bottle, than other liquors. The beſt way to ſecure them, is to have the liquor thoroughly fine before it be bottled. For want of this, ſome leave the bottles open a while, or open them after two or three days bottling, to give them vent. If one bottle break, through fermentation, it is beſt to give them all vent and cork them up again. Mean cyder is apter to break the bottles than rich. Some ſoak the corks in ſcalding water, to render them more pliant and ſerviceable. See CYDER.

Another particular to be obſerved is, to lay the bottles ſo as that the liquor may always keep the cork wet and ſwelled. Something alſo depends on the place where the bottles are ſet, which ought to be ſuch as expoſes them as little as poſſible to the alterations and impreſſions of the air: the ground is better for this purpoſe than a frame; ſand better than the bare ground; and a running water, or a ſpring often changed, beſt of all.

To haſten the ripening of bottled liquors, they are ſometimes ſet in a warm place, or even expoſed to the ſun, when a few days will bring them to maturity.

BOTTOM, the loweſt part of a thing as contradiſtinguiſhed from the top.

Hydroſtatical writers ſpeak of the preſſure of fluids, on the bottom of veſſels; in which caſe, the law of gravitation is, that the altitude remaining the ſame, the preſſure will be at the bottom. M. Leibnitz has aſſerted, that a body, in falling through a fluid, does not preſs on the bottom, that is, does not increaſe the preſſure on it; which is found to be falſe. Phil. Tranſ. N° 351. p. 570. A.D.S. an. 1692. p. 16.

When water boils, the bottom of the veſſel is found conſiderably colder than it was ſome time before boiling; inſomuch that the hand may bear it in the former caſe, not in the latter. Hiſt. Ac. Sc. ann. 1703. p. 29. See BOILING.

BOTTOM, in *Navigation*, denotes the ground or ſurface of the earth under the water.

They ſay a rocky, ſandy, gravelly, clayey bottom; a bottom with good hold, with a bad hold, &c.

The bottom of the ſea, Ray obſerves, is level, *i. e.* the deſcent from the ſhore to the deep is equable and uniform: but the bottoms of ſome ſeas are found higher than thoſe of others. Count Marſigli has made divers inquiries into the ſtructure of the bottom of the ſea, and its beds of ſtones, ſalt, bitumen, &c. Ray, Wiſd. of Creat. part i. p. 84. See SEA.

Over the natural bottom of the ſea is formed an accidental bottom, by the mixture of different matters, ſand, ſhells, mud, &c. ſtrongly compacted by the glutinous quality of the ſea-waters, almoſt to a degree of petrifaction. Theſe incruſtations being neceſſarily formed in ſtrata, there are ſome places wherein the fiſhermen can diſtinguiſh the annual augmentations. Hiſt. Acad. Sc. 1710.

BOTTOM *of a Ship*, that part of a ſhip below the water. This is alſo called the *quick-work*: and that above the water is called the *dead-work*. As the good or bad qualifications of a ſhip, with regard to ſailing, ſteering and ſtaying well, veering, carrying ſail, ſtowing her cargo, carrying her guns, &c. depends, in a great meaſure, upon the form of the bottom, every attention ought, therefore, to be paid to this particular point; and hence the method of conſtructing the bottom of a ſhip, ſo as to anſwer any intended purpoſe, is the niceſt and moſt difficult part of ſhip-building; to this article the reader is referred.

That a ſhip may ſail well, it is neceſſary to give her a long floor, with little riſing both fore and aft, and the capacity of the fore-body equal, or nearly ſo, to that of the after-body.

In order to make a ſhip ſteer well, the after-part of the bottom muſt not be full; the wing-tranſom carried pretty high; the faſhion-pieces well-formed, and not full below the load-water line; the midſhip-frame carried well forward; to draw more water aft than at the ſtem; a conſiderable rake forward; but the ſtern-poſt to be nearly perpendicular to the keel; and the upper works to be tight and as low as poſſible.

That a ſhip may carry a preſs of ſail, the floor-timber muſt be flat and long; the lower futtock full; upper futtock nearly ſtraight; the breadth to be thrown out aloft; the main breadth carried high; the upper works light; and hence, the centre of gravity low.

To make a ſhip keep a good wind, and drive little to leeward, requires a conſiderable length of keel, with reſpect to her breadth; a deep hold, and, conſequently, a ſhort floor-timber, with a conſiderable riſing.

In order that a ſhip may carry her guns well above the water, ſhe muſt have a long floor-timber, and not much riſing; a full midſhip-frame; a low wing-tranſom; and light upper works.

To obtain the preceding properties, very oppoſite rules muſt be followed; and hence it appears to be almoſt impoſſible to conſtruct a ſhip ſo as to be poſſeſſed of them all. The body, however, muſt be ſo formed, that as many of theſe properties may be retained as poſſible; always obſerving to give the preference to thoſe which are moſt required. If it is known what particular employment the ſhip is wanted for, thoſe qualities then are to be principally adhered to, which are moſt eſſentially neceſſary for that employment.

BOTTOM, *Copper*, a practice now become pretty general in Britain, of covering the bottom with ſheets of copper, which accelerates the ſailing of a ſhip, prevents the bottom from being worm-eaten, and keeps it long clean. It is, therefore, neceſſary, that ſhips making long voyages, ſhould be coppered.

BOTTOM, *Double*; a ſhip of this kind was conſtructed by ſir William Petty in the year 1663; which was found to ſail conſiderably faſter than any of the ſhips with which it had an opportunity of being tried. Her firſt voyage was from Dublin to Holyhead; and in her return, ſhe turned into that narrow harbour againſt wind and tide, among rocks and ſhips with ſuch dexterity as many old ſeamen confeſſed they had never ſeen the like. This veſſel, with ſeventy more, were loſt in a dreadful tempeſt.

BOTTOM, *Foul*, that is, when the bottom of a ſhip is covered with ſhell-fiſh, weeds, &c. This greatly retards the rate of a ſhip, and prevents her from ſteering and working; and, beſides, proves ſometimes fatal. An inſtance of this happened to a large built ſhip from Africa, in this foul condition, that could not be ſteered into Liverpool, but was loſt, entirely owing to her bottom not being ſcrubbed during the voyage. Every poſſible means ought, therefore, to be uſed to keep the ſhip's bottom clean. For this purpoſe, a caſk-ſcrubber has been found to anſwer with ſucceſs when at anchor, and in calm weather on the open ocean. This ſcrubber is made of elm, about an inch thick, and a foot broad, the middle part of the frame juſt to fit a ten gallon caſk, that was laſhed to the battons at each end, and the long ſquare ſpaces on each ſide of the caſk were filled with birch-broom ſtuff, which projected about ſix inches without the frame, and wedged faſt towards the ends, with long wedges againſt boards that ſlide with ſmall tennons at each end in a groove, to keep the birch faſt and firm. Two of theſe were connected together by iron-work, having a joint, that they may the more naturally ply to the curved or rounding parts of the ſhip's bottom. In uſing this ſcrubber, a block was faſtened under the bowſprit end, and another on the driver boom, rigged out right aft; a ſingle block is reeved in theſe blocks, and made faſt to the ſlings, and juſt long enough to veer and haul the ſcrubber along the bottom fore and aft, cloſe to the keel. Another rope is bent to the lower part of the ſcrubber, and hauled tight under the bottom, and made faſt to the inſide of the boat's main-thwart, the upper part of the ſcrubber being even with the water's edge, at midſhips, on the other ſide. The people are then ordered to walk fore and aft with the rope to the ſcrubber, till it comes to the water's edge both ways, the boat moving the ſame way with the ſcrubber, the people in her helping, by puſhing their hands againſt the ſhip's ſide, till the firſt depth is thought to be clean enough; then the people in the boat haul by their rope the ſcrubber a depth lower, by which, and the empty caſks, it is confined and preſſed to the bottom, at the different depths, till it is ſcrubbed down to the keel; and even the keel itſelf, by the rope going fore and aft under it.

BOTTOM, *Hogged*, a concave keel by which the ſheer of the ſhip is apparently broken. Ships with long ſtraight floors are moſt liable to this defect, either from accident, in taking the ground, improper ſtowage of the cargo, or otherwiſe. To prevent this, Mr. Hutchinſon adviſes to build ſhips with their floors and bottoms lengthways, to form an arch with the projecting part downwards, which will naturally not only contribute greatly to prevent their taking damage by their bottoms hogging and ſtraining upwards, either aground or afloat, but will, among other advantages, be a help to their ſailing, ſteering, ſtaying, &c. This curved bottom is one of the principal properties of the life-boat.

BOTTOM *having ſeveral keels*, which, upon account of the very different form of the bottom from the common form, requires a particular deſcription. This is a propoſal of Thomas Gordon, eſq. of Premnay, in his "Principles of Naval Architecture," printed at Aberdeen in the year 1784, in order to unite the ſeveral properties of ſhips, which has hitherto been deemed impracticable; ſuch as to make a ſhip ſail well, draw little water, keep a good wind, &c. For this purpoſe the bottom, ſays Mr. Gordon, ſhould be formed quite flat, and the ſides made to riſe perpendicular from it, without any curvature; which would not only render her more ſteady, as being more oppoſed to the water in rolling, but likewiſe more convenient for ſtowage, &c., while the ſimplicity of the form would contribute greatly to the eaſe and expedition with which ſhe might be fabricated. Though diminiſhing the draught of water is, *cæteris paribus*, undoubtedly the moſt effectual method of augmenting the velocity with which veſſels go before the wind, yet, as it proportionably diminiſhes their hold of the water, it renders them extremely liable to be driven to leeward, and altogether incapable of keeping a good wind. This defect may, however, be remedied, in a ſimple and effectual manner, by proportionally augmenting the depth of the keel, or, as ſo large a keel would be inconvenient, on many accounts, proportionally increaſing their number; as, in place of adding a keel eight feet deep to a veſſel drawing ſix feet water, to affix to different parts of her flat bottom, which would be well adapted for receiving them, ſix different keels of two feet deep each, at equal diſtances from each other, with proper intervals between; which will be found equally effectual for preventing theſe pernicious effects.

Thus then it appears, that a veſſel drawing eight feet water only, keels and all, may be made to keep as good a wind, or be as little liable to be driven to leeward, as the ſharpeſt built veſſel of the ſame length drawing fourteen, nay twenty feet or upwards, if a few more keels are added, at the ſame time that ſhe would be little more reſiſted in moving in the line of the keels, than a veſſel drawing ſix feet only. Theſe keels, beſides, would ſtrengthen the veſſel conſiderably, would render her more ſteady, and leſs liable to be overſet, and thereby enable her to carry more ſail, &c. Veſſels of this kind would likewiſe be well qualified for lying in docks and harbours when dry; and though the very quickeſt ſailers of any, might be navigated in the ſhalloweſt water; from which latter circumſtance many important advantages would reſult, as running little danger from ſand-banks, rocks, &c. being capable of riding in many bays, and entering many harbours, rivers and creeks inacceſſible to others, whether as an aſylum, or for the purpoſes of trade or war; for bombarding, or making deſcents on an enemy's coaſt. By enlarging, perhaps doubling, the breadth of ſhips, and forming their bottoms flat, and well furniſhed with keels, they muſt, in the firſt place, become much ſteadier, ſo as to carry their guns well, roll little, if at all, and be enabled to carry greatly more ſail, and that in a better direction; at the ſame time that they would be in no danger of being diſmaſted or overſet, unleſs the maſts were of a moſt extraordinary height indeed. Secondly, that they could carry more guns on their bow and ſtern, would have little or no occaſion for ballaſt; and if any was uſed, would incur leſs danger upon its ſhifting. Thirdly, that there would be much more room upon deck, as well as accommodation below, the breadth being ſo much increaſed without any diminution of the height above the load-water line, and without occaſioning any neceſſary augmentation in the number of men for working the veſſel, &c. Theſe are the principal advantages of a ſhip of this conſtruction; Mr. Gordon, however, proceeds to enumerate others.

BOTTOM *with ſliding keels.* See SHIP *with ſliding keels.*

BOTTOM, *ſagged,* the keel having a convex curvature. Long ſtraight-floored ſhips are moſt liable to be ſagged, as well as hogged. This defect ariſes, in a great meaſure, from loading the ſhip with a weighty cargo, as lead, iron-ore, ſtones, &c. and ſtowing it in the main-body of the ſhip. This ſagging of the bottom has, from experience, been found to increaſe the velocity; but, on the other hand, the ſhip is generally in a leaky condition. The principal method of remedying this defect, is to diſtribute the cargo more equably, ſo that the upward and downward preſſures may nearly counterbalance each other. This may be accompliſhed by means of a form-gage; for an an account of which ſee that article.

BOTTOM, *to prevent from being worm-eaten.* One of the beſt remedies hitherto diſcovered for preventing worms from deſtroying the bottom of a ſhip, ſeems to be the coal-tar, invented by the earl of Dundonald, and manufactured at Calroſs in Scotland. By many comparative trials, by ſinking piles of wood for ſome conſiderable time in the water, ſome of which were payed with coal tar, and the others with common vegetable tar; it was found that, in thoſe payed with coal-tar not the leaſt appearance of the worm could be traced, the tar ſtill remaining black and ſmooth upon the wood, which, on being cut, emitted a ſtrong ſmell of the tar; whereas, the other piles were obſerved to be full of worms. Some proofs of the efficacy of this tar will be inſerted under the proper article.

A mixture of the oil of the cocoa-nut with lime has alſo been uſed to pay the bottoms of ſhips, in order to exclude worms.

BOTTOM is alſo uſed to denote a whole ſhip, or rather veſſel.

In this ſenſe we ſay Engliſh bottoms, foreign bottoms. By the act of navigation, certain commodities imported in foreign bottoms, pay a duty called petty cuſtom; from which they are exempt, if imported in Engliſh bottoms.

Bottom is alſo uſed for what remains at the bottom of a veſſel. In this ſenſe, Paracelſus calls the ſediment of urine, *fundus urinæ*.

Bottom-*Stone*, a kind of iron-ſtone, or ore, in the Staffordſhire mines.

Bottom-*Nails*. See Nail.

BOTTOMRY, in *Navigation* and *Commerce*, is a contract, in the nature of a mortgage of a ſhip, on which the owner borrows money, to enable him to fit out the ſhip, or to purchaſe a cargo for a voyage propoſed; and pledges the keel or *bottom* of the ſhip (*partem pro toto*), as a ſecurity for the re-payment. It is moreover ſtipulated, that if the ſhip be loſt, in the courſe of the voyage, by any of the perils enumerated in the contract, the lender alſo ſhall loſe his money; but if the ſhip ſhould arrive in ſafety, then he ſhall receive back his principal, and alſo the intereſt agreed upon, generally called the "Marine Intereſt," however this may exceed the legal rate of intereſt. The perſon of the borrower, as well as the ſhip and tackle, if they arrive ſafe, are anſwerable for the money lent, and the marine intereſt. But if the loan is not upon the ſhip, but upon the goods and merchandize, which muſt neceſſarily be ſold or exchanged, in the courſe of the voyage, then only the borrower, perſonally, is bound to anſwer the contract; who is therefore, in this caſe, ſaid to take up money at "*Reſpondentia*." Bottomry is a loan upon the ſhip, and reſpondentia upon the goods. However, in the latter caſe, the perſonal reſponſibility of the borrower is not always the only ſecurity of the lender. If the money be lent for the outward and homeward voyage, the goods of the borrower on board, and the returns for them, either in money, or in other goods, purchaſed with the proceeds of them, are liable to the lender. The money is to be repaid to the lender, with the marine intereſt, upon the ſafe arrival of the ſhip, in the one caſe, and of the goods, in the other. Such are the leading circumſtances that diſcriminate theſe two contracts; in all other reſpects, they are nearly the ſame, and are governed by the ſame principles.

This kind of contract by bottomry, or rather reſpondentia, was known to the Romans; they denominated it, "nauticum fœnus," or "contractus trajectitiæ pecuniæ;" and it is treated of, both in the Digeſt, and the Code, "De nautico fœnere." They called the ſum lent, "pecunia trajectitia," perhaps, becauſe the borrower was accuſtomed to take the money on board with him in ſpecie, in order to employ it in trade, in the courſe of the voyage; which money was to be repaid, after a fortunate voyage, with a ſtipulated intereſt, called "periculi pretium;" and ſometimes, "uſura maritima," or "uſura nautica;" but it was lent on this condition, that if the ſhip ſhould be loſt, by the perils of the ſea, in the courſe of the voyage, the lender ſhould loſe both principal and intereſt.

Bottomry eſſentially differs from a ſimple loan: becauſe, in a loan the money is at the riſk of the borrower, and muſt be paid at all events; but in bottomry, it is at the riſk of the lender during the voyage. Accordingly, upon a loan, the legal intereſt only can be reſerved; whereas, upon bottomry, any intereſt may be legally reſerved, which is agreed upon between the parties.

The contracts of bottomry and inſurance reſemble one another in ſeveral particulars; the lender and the inſurer are alike liable to the perils of the ſea; the former receives the marine intereſt, and the latter the premium, as the price of the riſk, which of courſe varies, according to the length and danger of the voyage. The perils to which both are expoſed, commence and terminate together. The marine, and alſo the premium of inſurance, are not due, if no riſk be run, though this be prevented by the voluntary act of the borrower. Theſe contracts, however, materially differ in a variety of reſpects. In bottomry, the lender ſupplies the borrower with money, to purchaſe the goods that are riſked; but an inſurer furniſhes no part of the property inſured. The lender, in taking on himſelf the riſk of the goods, does not contract any obligation to the borrower; a loſs by the perils of the ſea does not make him a debtor to the borrower, but only prevents the borrower from becoming his debtor; whereas, in caſe of loſs, the inſurer becomes a debtor to the inſured, to the amount of ſuch loſs, not exceeding the ſum inſured. In caſe of ſhipwreck, the lender, by the general law, has a *lien* on the effects ſaved, to the extent of the ſum lent, and the marine intereſt, to the excluſion of the borrower; whereas, an inſured perſon has an intereſt in the effects ſaved, in common with the inſurer, ſo far as he was uninſured. The lender is not liable for particular average; but the inſurer is liable for this, unleſs he be exempt by expreſs ſtipulation. By the clauſe, "free of average," inſurers may be exempted from general average; but, in a caſe where the lender is liable by law to general average, ſuch a clauſe would be illegal and void. If the voyage be diviſible into ſeveral diſtinct riſks, the premium of inſurance may be apportioned to each, and there may be a return for ſuch as have not been begun; but in bottomry, if the riſks be once commenced, and no loſs happen, the marine intereſt muſt be paid entire.

This contract is eminently uſeful in a country, where perſons in trade have not capital ſufficient to carry on their foreign commerce; and by means of it a kind of partnerſhip is formed between the lender and the borrower, in which one ſupplies money, and the other ſkill, experience, and a ſpirit of adventure; in which one riſks the perils of the ſea, and the other compenſates him by a ſhare of the profits of the adventure. But in other reſpects this contract bears no reſemblance to a partnerſhip, as it has no community of capital nor any community of loſs.

Formerly contracts of this kind were more common in this country than they are now; becauſe the immenſe capitals engaged in every branch of commerce ſuperſede the neceſſity of ſuch loans. On this account money is now ſeldom borrowed in this manner, unleſs it be by the maſters of foreign ſhips, who, being in our ports, need pecuniary aſſiſtance to refit, to pay their men, to purchaſe proviſions, &c. or by officers and others belonging to ſhips engaged in long voyages, who are allowed to trade to a certain extent with the proſpect of great profit, but without capitals of their own; in this caſe, though it now ſeldom occurs in this country, they take up money on reſpondentia to make their inveſtments.

This contract, required to be always in writing, is ſometimes made in the form of a deed poll, called a "bill of bottomry," executed by the borrower; ſometimes in the form of a bond or obligation, with a penalty. But whatever may be its form, it muſt contain the names of the lender and the borrower, thoſe of the ſhip and maſter; the ſum lent, with the ſtipulated marine intereſt; the voyage propoſed, with the duration of the riſk: and it muſt alſo ſpecify, whether the money be lent on the ſhip, or on the goods on board, or on both; together with any other ſtipulation agreed by the parties to be introduced into the contract. It is alſo eſſential to this contract, that the marine intereſt be expreſsly reſerved in it.

Concerning the parties in this contract we obſerve, that any perſon, who is capable of contract, may lend money on bottomry. Any perſon, who has a veſted aſſignable property in a ſhip or cargo, may borrow money on bottomry or reſpondentia, to the extent of his intereſt. The contract itſelf ſeems to have originated from the practice of permitting the maſter of a ſhip, in a foreign country, to hypothecate the ſhip, in caſes of neceſſity, for the purpoſe of raiſing money to refit; and, indeed, it is neceſſary for the ſafety of the ſhip, and in order to enſure the ſucceſs of the voyage, that the maſter, in the abſence of the owners, ſhould have this power, implied by the marine law in his appointment. However, with reſpect to the purpoſes of this contract, he poſſeſſes no ſuch power, till he becomes actually maſter, or as far as this buſineſs is concerned, till after he ſets ſail. Hence, if he borrows money on bottomry in the place where the owners reſide, without their expreſs authority, the act can only concern himſelf, and affect his own intereſt on board. In a foreign country, and in the abſence of the owners, the maſter cannot raiſe any money on bottomry for any debt of his own, but merely for the uſe of the ſhip, in caſes of neceſſity; and this neceſſity muſt appear in the written contract, or elſe the lender will have neither a *lien* on the ſhip, nor an action againſt the owners; the maſter alone being liable. Nevertheleſs the lender is not bound to look to the application of the money, but may have his action againſt the owners and his *lien* on the ſhip, without being obliged to prove that the money was properly applied, unleſs indeed he be an accomplice in any fraudulent miſapplication of it; in which caſe the owners may impeach the contract upon that ground. As an inſurance upon any trade with the enemies of the ſtate in time of war is void, the lending of money upon bottomry is illegal.

As to the articles hypothecated, they may be the body, tackle, furniture, and proviſions of the ſhip, the whole or any part of the cargo, or both ſhip and cargo. On reſpondentia, indeed, money may be borrowed without hypothecating any thing; and the borrower may take money on board with him in ſpecie, for the purpoſe of employing it in trade, during the courſe of the voyage. But it is eſſential to the nature of the contract, that the money lent, or ſome equivalent to it, be expoſed to the perils of the ſea, at the riſk of the lender. The ſame reaſons of policy which forbid gaming inſurances, equally apply to wagers in the form of bottomry loans. The miſchiefs likely to reſult from this practice have been reſtrained by our legiſlature. Accordingly the ſtatute 16 C. II. c. 6. re-enacted and made perpetual by 22 C. II. c. 11. § 12. after reciting “that maſters and mariners of ſhips, having inſured, or taken upon bottomry, greater ſums of money than the value of their adventure, do wilfully caſt away, burn, or otherwiſe deſtroy the ſhip under their charge, to the great loſs of the merchants and owners,” enacts, for future prevention of the ſame, “that if any captain, maſter, mariner, or other officer belonging to any ſhip, ſhall wilfully caſt away, burn, or otherwiſe deſtroy the ſhip to which he belongs, or procure the ſame to be done, he ſhall ſuffer death as a felon.” When this ſpecies of gaming came into uſe in England, and perſons borrowed money “on the voyage,” as it was called, without any intereſt in the ſhip or cargo, which they could hypothecate, the ſtatute 19 Geo. II. c. 37. § 5. directed, that upon Eaſt India voyages the money ſhould only be lent on the ſhip or goods on board, with benefit of ſalvage to the lender. As many Britiſh ſubjects, in the reign of George I. fitted out ſhips, and clandeſtinely traded to the Eaſt Indies under colour of foreign commiſſions, the ſtatute 7 Geo. I. c. 21. § 2. made to reſtrain theſe practices, and to protect the monopoly of the Eaſt India company, declares, “that all contracts and agreements, made or entered into by any of his majeſty's ſubjects, or any perſon or perſons in truſt for them, for the loan of any money, by way of bottomry, on any ſhip or ſhips in the ſervice of foreigners, and bound to, or deſigned to trade in, the Eaſt Indies, ſhall be void.” This clauſe expreſsly, and in the moſt unqualified terms, reſtrains the lending of money on bottomry, on any ſhip or ſhips in the ſervice of foreigners. But whether a ſhip, the property of Britiſh ſubjects, fitted out by them, and laden with their merchandize, can be ſaid to be in the ſervice of foreigners, merely becauſe ſhe is furniſhed with a commiſſion from a foreign ſtate, is a queſtion upon which there has not yet been any judicial deciſion. Freight may be both inſured and hypothecated upon a bottomry contract. Seamen may borrow money on any goods which they have on board; but with reſpect to their wages, they can neither inſure them nor borrow money upon them.

As to the rate of marine intereſt, Juſtinian, who, in ordinary caſes prohibited the *centeſima*, or one *per cent.* per month, or 12 *per cent.* per annum, allowed it in this contract, and forbade any higher intereſt. But in modern times, when commerce is carried on between countries remote from one another, it is impoſſible to fix any preciſe ſtandard by which this may be regulated. The legality of marine intereſt, however exorbitant it may ſeem, is allowed by courſe both of law and equity; nor can it be deemed uſury, provided the money lent be *bonâ fide* put in riſk. This intereſt commences with the riſk, and alſo terminates with it. But if the time of the contract be a fixed period at a ſtipulated rate, and the voyage be performed within that period, the marine intereſt for the whole period will be due; but if the voyage exceed that period, the riſk of the lender will ceaſe, and the debt become obſolete, though the voyage ſhould not be ended. The riſk alſo will ceaſe, if the ſhip has been prevented by unavoidable accident from performing her voyage within the time limited. Upon the ceſſation of the ſea-riſk, if the borrower delays the payment, common intereſt begins to run on the principal, excluſive of the marine intereſt, “*ipſo jure*,” without any demand.

The perils of the ſea, which conſtitute the riſk of the lender, comprehend all thoſe accidents and misfortunes to which ſhips at ſea are liable, and which no human foreſight or precaution can prevent. Accordingly contracts on bottomry and reſpondentia expreſsly provide, that “if, in the courſe of the voyage, and within the time preſcribed, an utter loſs of the ſhip by fire, enemies, men of war, or any other caſualties, ſhall unavoidably happen,” the bond ſhall be void, and the borrower diſcharged; ſo that the perils are nearly the ſame with thoſe to which the under-writers upon a policy of inſurance are liable. A loſs by pirates, though not uſually expreſſed in ſecurities of this kind, is included in the riſk. Nothing, however, but a total loſs will diſcharge the borrower; and the obligation remains, notwithſtanding any damage which the goods may ſuſtain by the perils of the ſea; nor is there any deduction on account of ſuch damage. In this reſpect the lender on bottomry is in a better ſituation than an inſurer, who is obliged to indemnify the inſured, to the extent of the ſum inſured, from all damage ariſing from any of the perils againſt which the inſurance is made. No capture or detention, that does not amount to a total loſs, in a caſe of inſurance, can diſcharge the borrower. Lord Manſfield, in delivering the opinion of the court, in a caſe of this kind, ſaid, “It is clear, that by the law of England, upon a bottomry contract, there is neither average nor ſalvage.” But the lender is not liable for loſs proceeding from the internal defect of the thing that is hypothecated, unleſs by expreſs ſtipulation, ſuch as the ſhip's not being ſea-worthy, and periſhing by age, rottenneſs, or any ſuch cauſe, or the goods periſhing of themſelves, liquors running out through the defect of the caſks, dry goods heating and fermenting by length of time, &c.; nor is the lender liable for the act of the owners or maſter of a ſhip, as if the voyage be changed by order of the owners, or if a loſs happen by the barratry of the maſter, or by the miſconduct of the merchant. In theſe caſes the borrower is not diſcharged, except by expreſs ſtipulation, which ſhall render the lender liable for every loſs not occaſioned by the act of the borrower. Nor is the lender liable for any loſs by ſmuggling, which occaſions a forfeiture of the ſhip, and a confiſcation of the goods, (unleſs he was privy to it. In England, if the money were lent to be employed in a trade prohibited by law, the contract would be void; and the ſum lent could never be recovered from the borrower, even though no loſs had happened. The lender, like an inſurer, is only anſwerable for loſſes that happen within the time and place of the riſk, ſpecified in the contract; and, therefore, if the ſhip deviate from the voyage, without neceſſity, neither the lender nor the inſurer will be liable to any loſs that may afterwards happen. (See Insurance.) If the ſhip be preſſed into the king's ſervice, this will excuſe a deviation; but if the borrower allege a deviation, this muſt be explicitly denied. A change of the ſhip, without neceſſity, diſcharges the lender. Money is generally lent for the whole voyage, outward and homeward; or for either ſeparately; or for a limited time. The contract uſually ſpecifies the commencement and end of the riſk; and any misfortune, happening before or after, is at the riſk of the borrower. If the voyage be deſcribed in the bond, but the time of the commencement and end of the riſk be not ſpecified, the riſk, as to the ſhip, ſhall commence from the time of her ſetting ſail, and continue till ſhe anchors in ſafety at her port of deſtination; and as to goods, from the time of their being ſhipped till they are ſafely landed. When the loan upon goods is both for the outward and homeward voyages, the lender continues liable to the riſk, during the homeward voyage, on the goods by which thoſe have been replaced on which the money was lent.

Between inſurance and bottomry there is this difference; that an inſurer, independently of previous ſtipulation to the contrary, is liable to the charge of particular average, whereas, a lender without expreſs ſtipulation is exempt from it: but, by the general law of merchants, in caſe of groſs or general average, the lender ſhall contribute to diſcharge the borrower; and it is maintained by ſome writers, that the nature and object of the bottomry contracts ſeem to require, that the lender ſhould be liable for general average. Lord Mansfield, however, as we have already obſerved, is of opinion, that, by the law of England, there is neither average nor ſalvage upon ſuch contracts; and in this opinion lord Kenyon concurs. But ſerjeant Marſhall obſerves, that he has not been able to diſcover any decided caſe, or authority in the law, to warrant this doctrine. He alſo diſſents from another learned writer, (Park,) who thinks, that the ſtat. 19 Geo. II. c. 37. § 5. which provides, that the benefit of ſalvage ſhall be allowed to the lender, on Eaſt India voyages, concluſively proves, that there was neither average nor ſalvage upon bottomry contracts at common law. Mr. Marſhall is of opinion, that this ſtatute has not introduced any new principle into the law, either of inſurance or bottomry contracts; but merely reſtored them to their original and proper uſe, from which a ſpirit of gaming had perverted them. Nor can he admit, that, becauſe the ſtatute gives the benefit of ſalvage to the lender upon Eaſt India voyages, he was not therefore entitled to this at common law. But admitting this to be the caſe; does it hence follow, that he was not liable to general average at common law? The ſtatute makes no mention of general average. It has been determined, however, that if an inſurance be made in England, upon a reſpondentia intereſt, upon a foreign ſhip, and it appears that the lender is liable, by the law of the country, to which the ſhip belongs, to contribute to a general average, the under-writers upon the policy will be liable for ſuch contribution.

As the ſtatute 19 Geo. II. c. 17. gives the benefit of ſalvage to lenders on bottomry, and reſpondentia ſecurities, reſtricted to Eaſt India voyages, it has been a ſubject of inquiry, whether, before that act, the lender upon any voyage was entitled to the benefit of ſalvage. By the general law of merchants, the event upon which the borrower is diſcharged, is the total loſs of the ſhip or goods, upon which the money is lent, in conſequence of the perils mentioned in the contract. The borrower is bound to pay principal and marine intereſt, provided the ſhip or goods, on which the money is lent, arrive at its deſtined port, however damaged or depreciated by the perils of the ſea; nevertheleſs, if part ſhould be captured or loſt, the borrower is only bound to pay in proportion to what remains. If the ſhip be loſt, and the goods ſaved, the contract remains in force, and the borrower becomes liable, provided another ſhip can be procured to convey the goods to the place of their deſtination. But for the expence of this other veſſel, the lender is accountable; and if no other can be procured, the borrower will be diſcharged, on accounting to the lender for the proceeds of the goods ſaved. By the law of England, according to the opinion of lord Mansfield, already cited, "there is neither ſalvage nor average upon bottomry contracts:" however, without the benefit of ſalvage, this contract muſt partake, in a great degree, of the nature of a wager, even when the money is lent upon goods on board, of equal value. In caſe of a total loſs of the ſhip, the lender loſes all, though all the goods are ſaved. Blackſt. Comm. vol. ii. p. 457. Marſhall on the Law of Inſurance, vol. ii. b. ii. p. 632.

Bottomry, *bill of*, is a contract between two perſons, the one borrowing, and the other lending a ſum of money, by which the borrower, ſetting forth his intention to make a voyage in a certain ſhip therein named, acknowledges the receipt of a certain ſum of money from the lender, on this condition, that if the ſhip does happily perform her voyage, without any diſaſter by enemies or otherwiſe, then he is to reſtore that ſum to the lender, with an additional ſum, therein expreſſed, for the intereſt, within a certain time after his return; but that if the ſhip be loſt, or taken by enemies or pirates, then the perſon of the borrower to be for ever diſcharged, and the lender to bear the loſs. For the form of ſuch a bill by deed, and when the ſhip is to go to ſeveral ports, ſee Marſhall's Treatiſe on the Law of Inſurance, vol. ii. Appendix, p. 718. See Bottomry.

BOTTONI, Albertus, in *Biography*, of an illuſtrious family, originally from Parma, was born at Padua, in the early part of the 16th century. After paſſing through the uſual ſchool education, in which he diſtinguiſhed himſelf, he applied to the ſtudy of medicine, took the degree of Doctor, and was ſoon after advanced to the chair of profeſſor in that faculty, which he filled many years, with ſingular credit. He died at a very advanced age, in 1596, leaving behind him, Haller ſays, an immenſe property. He publiſhed, "De vita conſervanda," Patav. 1582. 4to. "De morbis muliebribus," 1585, reprinted in the collections of Bauhine and of Spachius. "Methodi medicinales duæ, in quibus legitima medendi ratio traditur." Francof. 1595. 8vo. For the titles of other publications by this author, ſee Haller Bib. Med. Eloy. Dict. Hiſt.

Bottoni, Dominique, the ſon of Nicholas Bottoni, a celebrated philoſopher and phyſician of Lentini, in Sicily, born the 6th of October 1641, received his education under Peter Caſtello. In 1658, he was admitted to the degree of doctor in medicine, and was ſoon after made phyſician to the marquis De Villa Franca, viceroy of Sicily, phyſician to the royal hoſpital of Meſſina, and ſuperintendant of the phyſicians there, with a penſion of 50 crowns per month. He afterwards enjoyed a ſimilar ſituation under the viceroy of Naples. In 1697, he was made correſponding or honorary member of the Royal Society of London, to which he had previouſly ſent his "Idea hiſtorico-phyſica de magno trinacriæ terræ motu," which is publiſhed in their tranſactions. We have alſo by this writer "Pyrologia topographica, id eſt, de igne diſſertatio, juxta loca, cum eorum deſcriptione," Neapoli, 1692, 4to. "Febris rheumaticæ malignæ, hiſtoria medica," Meſſina, 1712, 8vo. "Preſerve ſalutari contro il contagioſo malore," Meſſina, 1621, 4to. He died about the year 1731. Eloy. Dict. Hiſt.

BOTTONO, in *Geography*, a town of Italy, in the duchy of Parma; 9 miles S.S.E. of Parma.

BOTTRYS, in *Botany*. See Chenopodium.

BOTRYTIS. See Byssus.

BOTTS, in *Zoology*, bots and horſeworms. See Oestrus genus, and ſpecies Equi, Bovis, Hæmorrhoidalis, Veterinus, Ovis. Theſe are a peculiar kind of grub, found not unfrequently in the ſtomach of the horſe, of a cylindrical figure, pointed at one extremity, and obtuſe at the other, and beſet every where with numerous rigid ſpines. There are at leaſt two different kinds inhabiting the ſtomach of the horſe, which at length produce, on their arriving at maturity, a two-winged inſect of the fly kind.

Beſides thoſe of the horſe, there are others of a diſtinct kind, but belonging to the ſame family, which live in their grub ſtate under the ſkin of the backs of oxen, the deer, and the rein-deer; and others, again, occupy for a dwelling the frontal cavities of the head of the ſheep, and cells at the baſe of the horns; and others inhabit alſo the ſame ſituations in the deer. They exiſt on the pus and lymph they create on theſe membranes by their irritation; and when full fed, they fall to the earth, and undergo the uſual transformations of other inſects.

The inacceſſible ſituations of theſe animals in their *larva* ſtate, and the impoſſibility of raſing them out of thoſe ſituations, has been the cauſe, probably, of their hiſtory having ſo long remained in the greateſt obſcurity.

They have been generally conſidered by the vulgar as true worms of the inteſtines, and ſimilar in their origin to other worms of the inteſtinal canal, than which nothing can be more untrue.

The following is a conciſe detail of what is at preſent known reſpecting them; the account purſuing nearly the order in which the diſcoveries have been made. The firſt who laboured to unveil the hidden and extraordinary economy of theſe animals was Valliſnieri, an Italian of Padua, and the pupil of Malpighi. Before his time, the moſt abſurd notions prevailed reſpecting them. The Romans, who had ſeen them hanging to the extremity of the rectum of the horſe, believed them to be pieces of the inteſtine itſelf torn away by the worms and animals exiſting within them: and Vegetius has thus deſcribed them; "Hujuſmodi paſſionis ſignum eſt (morbus coriaginoſus,) cum invenitur humor in ano fabæ coctæ ſimilis: eſt namque ſanies ex illis vulneribus quæ beſtiolæ intrinſecus fecerunt." Valliſnieri, in his firſt eſſay, deſcribed the changes of the *oeſtrus bovis*; giving indifferent figures of them, and tracing them from the back of the ox to the perfect ſtate of a fly. This eſſay was publiſhed ſoon after the year 1700. Indeed, all that is known reſpecting them was diſcovered within the limits of the laſt century.

The next eſſay developes the hiſtory of the *oeſtrus ovis*, or of that inſect which is found infeſting the noſtrils and cavities of the face of the ſheep; and in a ſubſequent volume (ed. Venezia, vol. ii. p. 1633.), he publiſhed his obſervations on the botts of the horſe. He was embarraſſed by the great difference he found in the appearance of the botts of the ſtomach; and hardly knew whether to attribute it to a difference of ſex, of feeding, or of their being two diſtinct kinds, which ſubſequent diſcoveries have fully confirmed to be the caſe. His figures of them are very obſcure, and ill expreſſed, ſo much ſo that it requires an eye accuſtomed to the appearance of theſe inſects, at all to identify them. They are, however, without doubt, deſigned to repreſent the *oe. equi* and *oe. hæmorrhoidalis*.

The next labourer in this obſcure path of natural hiſtory, was the celebrated Reaumur, vol. iv. p. 503. of the "Memoires pour l'Hiſtoire des Inſectes." He repeated all the experiments of Valliſnieri reſpecting the above three ſpecies, and fully confirmed all he had ſaid reſpecting them; accompanying his account with ample details of their appearance and habits, and his deſcriptions with much better repreſentations of them than his predeceſſor. Madame de Breauté, an abbeſs, in whoſe praiſes he ſufficiently enlarges, at length furniſhed him with an opportunity of getting the *larvæ* of the *oe. bovis* from ſome of the cows belonging to her convent; and on them he made his obſervations. Among other remarks, in this intereſting memoir, he mentions, that by a ſingular chance he obſerved a line of ſmall air-bubbles arranged along the ſide of the inſect, and placed oppoſite to the ſpiracula, being entangled in the pus, which every where covered its ſurface, and correſponding in number and poſition to theſe openings; which would ſeem to prove that theſe ſpiraculæ are deſigned, not for the admiſſion of air, as is generally conceived, but in reality for its exit; the air being received by a cartilaginous tube opening at one end of the inſect, viz. that extremity which is placed next the external opening of the ſkin, and which becomes the tail part of the future inſect, the larva being, in reality, inverted in the abſceſs. He very candidly obſerves, however, that he could not force any air through theſe apertures, by holding the larva under water, and compreſſing it with the fingers.

He alſo noticed, that the opening in the ſkin, through which the larva breathes and evacuates, is conſiderably enlarged about the period of its exit, by the animal raiſing itſelf in the abſceſs, and preſſing againſt it; and after ſome days of this diſcipline, the aperture being enlarged, he works himſelf through by ſucceſſive efforts, and falls to the ground. This excellent obſerver particularly mentions alſo their launching themſelves from the back of the animal at an early hour of the morning in preference to any other part of the day.

The perfect inſect, he obſerves, could not be induced to take any kind of food or nouriſhment, though he preſented it with a great variety; a circumſtance, indeed, that is not ſo much to be wondered at, ſince a large ſhare of the inſect world appear to paſs the laſt ſtage of their lives, not only without food, but without organs for receiving it. Generation would appear to be the leading purpoſe of this ſtate of their exiſtence.

It is particularly worthy of remark, as it may be the means of exciting thoſe who may be poſſeſſed of the opportunity to farther reſearch, to make mention of the recitals given by this celebrated obſerver in another memoir (vol. v. p. 66.),

p. 56.), where he deſcribes the larvæ found in the cavities of the face of the ſtag; and it is evident that they are widely different from thoſe inhabiting the ſame place in the ſheep, or indeed from any other ſpecies at preſent known. He did not ſucceed in his attempts to breed the fly from theſe larvæ; and we are therefore in the dark reſpecting this inſect; and, unleſs it be the *oeſtrus naſalis* of Linnæus, which, on ſeveral accounts, it does not appear probable that it is, it muſt be a new ſpecies.

Reaumur ſeems fully to have believed the abſurd doctrine of Valliſnieri, that the parent fly entered actually into the noſtrils and fauces to depoſit its eggs, of which we ſhall have occaſion to ſpeak hereafter more particularly.

Next to the works of Reaumur, in this line of reſearch, follow the writings of baron De Geer, who has followed and confirmed the diſcoveries of Valliſnieri and Reaumur, without adding any thing of importance to their obſervations. He ſeems alſo to entertain, without heſitation, the opinion of Valliſnieri, that the *oeſtrus equi* enters the rectum to depoſit its eggs. We find, however, that he was aware that Linnæus, under the title *oe. bovis*, had confounded two diſtinct ſpecies.

He alſo erroneouſly appears to have conſidered the *oe. bovis* and *hæmorrhoidalis* as one ſpecies, being deceived by the circumſtance of their deſcription, which, as to colours, is very ſimilar.

Linnæus next, by the extraordinary conciſeneſs of his writings, ſeemed to ſatirize the enormous details in the natural hiſtorians of the preceding age, whoſe works were rapidly becoming too voluminous even for peruſal. On moſt occaſions he brought what was important to be known within the narrow limits of a few Latin phraſes well expreſſed. He marſhalled, for the firſt time, the ſcattered members of this extraordinary race under the common family title of *oeſtrus*. He, however, was only acquainted with five ſpecies, all European; *bovis*, *tarandi*, *hæmorrhoidalis*, *naſalis*, and *ovis*. His ſpecific characters are very appropriate; and we ſhall have occaſion, in enumerating the ſpecies at preſent known, at the concluſion of this general account, to give them nearly as he had done.

Fabricius next added to this family three more ſpecies; the *oe. buccatus*, *oe. pecorum*, *oe. trompe*. Deſcribing from cabinets, without entering into their hiſtory, has been the ſource of the greateſt confuſion. His *oe. vituli* is a mere variety of the *equi*; and the Linnæan *bovis*, which is the commoneſt ſpecies, ſeems to be altogether omitted in his enumeration.

Gmelin next occurs; and, collating from all quarters, without any acquaintance with the animals themſelves, has added three more ſpecies, which he believes to be new, from the works of profeſſor Pallas. Theſe are indicated by the names of *antilopæ*, *faſciculoſus*, and *hominis*.

The European ſpecies, eſpecially thoſe that infeſt our cattle, horſes, and ſheep, in Great Britain, being the moſt intereſting, we ſhall proceed to illuſtrate the moſt curious circumſtances of their hiſtory, and barely mention the names of the reſt, and the animals and country they inhabit.

Linnæus, through the whole courſe of his life, had never met with the true fly produced by the ox-bot, but had conſtantly taken a very diſſimilar one which infeſts the horſe for it. Indeed, this inſect is truly rare. Valliſnieri had never ſeen but one, and that was mutilated. Reaumur, with uncommon pains, had raiſed two or three to the perfect ſtate of a fly, and informs us, that to effect his purpoſe more completely, he employed a cow-herd to collect for him, promiſing him the price of half a day's labour for each he ſhould bring; but out of thirty procured by this means not one lived. The cow-keeper, no doubt, too eager for his reward, had preſſed them with his fingers from their ſituations under the ſkin, before they were perfectly ripe and full fed; in which caſe they would certainly all periſh, even though within a day of this period.

There is only one good ſpecimen of this inſect that we know of in England, even at this time, which is in the collection of Mr. Thomas Allen, and was taken from the back of a cow near Hampton court. By rare chance we took another of theſe in the Alps, between Salanche and Bonneville, after obſerving it to ſettle on ſome dung that lay in the road where ſome cattle had recently paſſed, and which, on our return through Germany, we preſented to the venerable and very reſpectable profeſſor D. Schreber of Erlang, the intimate friend and pupil of Linnæus, who, we were ſurprized to find, till that time had not ſeen it.

Nothing is, however, more eaſy than to procure theſe inſects by the ſimple means we formerly uſed, and the detail of which may not be unacceptable to the public, eſpecially to thoſe who wiſh to ſee them from curioſity, or from a deſire to procure them for their cabinets. During the latter months of the ſummer, at which time theſe larvæ are moſt frequently found of a mature age, and ready to quit their habitations, which is diſcoverable by the ſuperior ſize of the tumor, and by the increaſed diameter of the external opening in the ſkin; ſelecting ſuch as theſe, the hairs are to be removed with a pair of ſciſſars to ſome little diſtance from the tumor, and a piece of leather thickly ſpread with pitch, through the centre of which a hole is cut, and into this is inſerted a ſmall gauze pouch or bag; the pitched leather is now placed on the ſkin, to which it readily adheres, and the inſect, when it falls from the abſceſs, is caught by the bag, where, as it cannot eſcape, it remains till removed by the perſon who looks after them. Three larvæ, procured in this way, produced two flies in very good condition: one fled away during ſome experiments that we were making with it; the other was given to Mr. Allen, as above ſtated, after drawings had been made of it for the uſe of the Linnæan ſociety.

We are now under the neceſſity of adverting to a ſmall communication ſent to the Linnæan ſociety by the writer of this article, in the year 1796, and publiſhed in the third volume of their Tranſactions, p. 289, as this memoir contains ſome farther obſervations and diſcoveries than thoſe which had fallen within the notice of Valliſnieri and Reaumur, we ſhall briefly extract from them what is new or uſeful.

Page 291. "The larva of the *oeſtrus bovis* is very unlike the other larvæ of this genus, ſo much ſo that I did not imagine, till I had procured the fly from it, that it was the larva of an *oeſtrus*. It neither poſſeſſes the aculei, the lips, or the marginal ſetæ, which are the prominent characters of the larvæ of the *oe. equi* and *hæmorrhoidalis*. When young, the larva is ſmooth, white, and tranſparent; as it enlarges, it becomes browner; and about the time it is full grown, it is totally of a deep brown colour, having numerous dots on its ſurface, diſpoſed in tranſverſe interrupted lines paſſing round the ſegments. Two diſtinct and different kinds of lines are ſeen on each ſegment; the uppermoſt of them is narrower, and conſiſts of larger dots. Underneath theſe there is a broader line, and the dots ſmaller. The firſt are eaſily ſeen, by uſing the lens, to be real hooks bent upwards, or towards the tail of the inſect; and on examining the broader line of ſmall dots, with a tolerably powerful magnifier, they were found alſo to be real hooks turned in an oppoſite direction to the former, that is, downwards in the abſceſs, and towards the head of the inſect. This ſingular arrangement of hooks round the body of the larva, in this inſtance, ſerve the purpoſe of legs in other larvæ, enabling it to move about in the abſceſs at pleaſure, and to crawl out of it when ripe, and renders the uſe of the tentacula, obſervable at the ſmall end in the other ſpecies, not neceſſary in this.

"Theſe hooks, being erected by the muſcles of the ſkin, according to the ſeries of them uſed by the larva, it appears to be raiſed or depreſſed in the abſceſs; and by this motion, and the conſequent irritation, a more or leſs copious ſecretion of pus is produced for the ſuſtenance of the larva. The *chryſalides* continued in that ſtate from about the latter end of June till about the middle of Auguſt, when the fly, forcing open a very ſingular marginated triangular lid, or *operculum*, at the ſmall end, made its appearance.

"Although its effects on the cattle are ſo often remarked, yet the fly itſelf is rarely ſeen or taken, as the attempt would be attended with conſiderable danger, if in purſuit of the oxen. The pain it inflicts in depoſiting its eggs, appears to be very ſevere. When one of the cattle is attacked by this fly, it is eaſily known by the extreme terror and agitation of the whole herd. The unfortunate object of the attack runs bellowing from among them to ſome diſtant part of the heath, or the neareſt water. The tail, from the ſeverity of the pain, is held with a tremulous motion ſtraight from the body; and the head and neck ſtretched out to the utmoſt. The reſt, from fear, generally follow to the water, or diſperſe to different parts of the field.

"When the oxen are yoked to the plough, the attack of this fly is attended with real danger to the drivers: ſince they become perfectly uncontrolable, and will often run with the plough directly forwards through the hedges, or whatever obſtructs their way.

"There is provided, on this account, to many ploughs a contrivance immediately to ſet them at liberty. The ſingular ſcene attending the attack of this fly on the herd, has often been the ſubject of poetical deſcription; no one has, however, more naturally or elegantly delineated it than the bard of Mantua:

"——— Eſt lucos ſilari circa ilicibuſque virentem
Plurimus alburnum volitans cui nomen aſilo
Romanum eſt, oeſtron Graii vertere vocantes:
Aſper, acerba, ſonans: quo tota exterrita ſylvis
Diffugiunt armenta; furit mugitibus æther
Concuſſus, ſylvæque, et ſicci ripa Tanagri."
Georg. lib. iii. ver. 146—151.

"The ſtrongeſt and healthieſt beaſts ſeem conſtantly to be preferred by this fly; and their poſſeſſing them in their backs is conſidered as a criterion of goodneſs with the dealers in cattle; and the tanners obſerve, that their beſt and ſtrongeſt hides have the greateſt number of bot-holes in them.

"The whole of this family of inſects appear to have a ſtrong diſlike to moiſture; ſince the animals find a ſecure refuge, when they get into a pond or brook, where the other flies which annoy them, follow without heſitation, but the oeſtri rarely or never; and during very cold, rainy, or windy weather, they are not to be ſeen.

"Among the country-people, the larvæ of this inſect are commonly known by the name of warbles, wornuls, or wormuls, or more properly bots."

We now tranſcribe from the above memoir what is moſt worthy of notice reſpecting the *oeſtrus equi*, or large horſe-bot.

"Theſe larvæ attach themſelves to every part of the ſtomach, but are in general moſt numerous about the pylorus, and are ſometimes, though much leſs frequently, found in the inteſtines. They hang moſt commonly in cluſters; being fixed by the ſmall end to the inner membrane of the ſtomach, where they adhere by means of two ſmall hooks or *tentacula*. When removed from the ſtomach, they will attach themſelves to any looſe membrane, and even to the ſkin of the hand; for this purpoſe, they draw back their hooks almoſt entirely within the ſkin, till the two points of theſe hooks come cloſe to each other; they then preſent them to the membrane, and keeping them parallel till it is pierced through, they expand them in a lateral direction; and afterwards, by bringing the points downwards, or towards themſelves, they include a ſufficient piece of the membrane with each hook, and thus remain firmly fixed, for any length of time, without any farther exertion from the animal.

"All thoſe bots which feed on the mucous membranes lining the canals of the body, are provided with theſe tentacula; whilſt thoſe which inhabit beneath the ſkin, will be found univerſally without them. The oeſtrus of the ſheep has them alſo, but uſes them only in paſſing over the membranes on which it lives, making them a fixed point to which it draws up its body, and thus ſecures its paſſage along thoſe ſmooth and lubricated ſurfaces of the noſtrils.

"The larva of this bot, when very young, is of a cylindrical figure, of a pellucid ruby red, and appears without ſpines to the ſegments. As it acquires an increaſe of ſize, it aſſumes a more flattened appearance, becomes whiter; and the ſpines, which are tipt with black, become very viſible, being placed in double lines, and are directed towards the tail, or truncated end of the larva.

"Their food is probably the chyle, which, being nearly pure aliment, may go almoſt wholly to the compoſition of their bodies without any excrementitious reſidue; though, on diſſection, the inteſtine is found to contain a yellow or greeniſh matter, which is derived from the colour of the food, and ſhews that the chyle, as they receive it, is not perfectly pure.

"The ſlowneſs of their growth, and the purity of their food, muſt occaſion what they receive in a given time to be proportionably ſmall; from whence probably ariſes the extreme difficulty there is found in deſtroying them by any medicine or poiſon thrown into the ſtomach. Opium, tobacco, or the draſtic purgatives, which often bring away in abundance the common worms of the inteſtines, produce little or no effect on theſe.

"On opening the body of the bot, and removing the gelatinous matter, the air tubes are ſeen, and ſeem of a ſplendid ſilvery colour, glittering very beautifully, as though they were injected with the pureſt mercury; they remain diſtended by their own inherent elaſticity, and are filled with air to their minuteſt ramifications.

"Reſpiration appears to be the office of theſe air-canals, which are the lungs of the larva; and, conſidered in this point of view, they are much larger than the reſpiratory organs of any other animal, which is the more extraordinary if the reſpiration of animals be for the production of anima heat; this being unneceſſary to larvæ, that are ſupplied ſo abundantly with it from the high temperature of their reſidence in the living ſtomach. Nor can theſe organs be formed for the purpoſes of the future inſect, ſince they cannot be detected in either the chryſalis or fly. One ſhould almoſt, from this circumſtance, be led to ſuſpect that the reſpiration of animals was more intimately connected with the reception of food, and the converting it into living matter than any other deſign. Though it would alſo appear, that the impurity of the air in the ſtomach, and its caſual ſupply might render theſe larger reſervoirs neceſſary.

"The larvæ of the large horſe-bot attain their full growth about the latter end of May, and are coming from the horſe from this time to the latter end of June, or ſometimes later. On dropping to the ground, they find out ſome convenient retreat, and change to the chryſalis; and in about ſix or ſeven weeks, the fly appears; for the deſcription of which, ſee the concluſion.

"The mode purſued by the parent fly, to obtain for its young a ſituation in the ſtomach of the horſe, is truly ſingular, and is effected in the following manner. When the female has been impregnated, and the eggs are ſufficiently matured, ſhe ſeeks among the horſes a ſubject for her purpoſe; and advancing on the wing, ſhe holds her body nearly upright in the air, and her tail, which is lengthened for the purpoſe, curved inwards and upwards. In this way, ſhe approaches the part where ſhe deſigns to depoſit the egg; and ſuſpending herſelf for a few ſeconds before it, ſuddenly darts upon it, and leaves the egg adhering to the hair; ſhe hardly appears to ſettle, but merely touches the hair with the egg held out on the projected point of the abdomen. The egg is made to adhere by means of a glutinous liquor ſecreted with it. She then leaves the horſe at a ſmall diſtance, and prepares a ſecond egg; and poizing herſelf before the part, depoſits it in the ſame way. The liquor dries; the egg becomes firmly glued to the hair; and this proceſs is repeated by various flies, till four or five hundred eggs are ſometimes placed on one horſe.

"The horſes, when they become uſed to this fly, and find it does them no injury, as the *tabani* and *canopes*, by ſucking their blood, hardly regard it, and do not appear at all aware of its inſidious object.

"The inſide of the knee is the part on which theſe flies are moſt fond of depoſiting their eggs, and, next to this, on the ſide and back part of the ſhoulder, and leſs frequently on the extreme ends of the hairs of the mane. But it is a fact worthy of attention, that the fly does not place them promiſcuouſly about the body, but conſtantly on thoſe parts which are moſt liable to be licked with the tongue; and the ova, therefore, are ſcrupulouſly placed within its reach. Whether this be an act of reaſon or inſtinct, it is certainly a very remarkable one; and one ſhould ſuſpect, if it was the latter, it ought to direct the performance of the act in one way only.

"Whichever of theſe it may be, it is without doubt, one of the ſtrongeſt examples of pure inſtinct, or of the moſt circuitous reaſoning, any inſect is capable of. The eggs thus depoſited, I at firſt ſuppoſed were looſened from the hairs by the moiſture of the tongue, aided by its roughneſs, and were conveyed in this way to the ſtomach, where they were hatched: but on more minute ſearch, I do not find this to be the caſe, or at leaſt only by accident; for when they have remained on the hairs four or five days, they become ripe, after which time the ſlighteſt application of warmth and moiſture is ſufficient to bring forth in an inſtant the latent *larva*. At this time, if the tongue of the horſe touches the egg, its *operculum* is thrown open, and a ſmall active worm is produced, which readily adheres to the moiſt ſurface of the tongue, and is from thence conveyed with the food to the ſtomach.

"I have often clipped off with a pair of ſciſſars ſome hairs, with the eggs on them, from the horſe; and on placing them in the hand moiſtened with ſaliva, they have hatched in a few ſeconds. At other times, when not perfectly ripe, the larva would not appear, though held in the hand, under the ſame circumſtances, for ſeveral hours; a ſufficient proof that the eggs themſelves are not conveyed to the ſtomach.

"It is fortunate for the animals infeſted by theſe inſects, that their numbers are limited and kept within bounds, by the hazards they are expoſed to. I ſhould ſuſpect near a hundred are loſt for one that arrives at the perfect ſtate of a fly. The eggs, in the firſt place, when ripe, often hatch of themſelves; and the larva, without a nidus, crawls about till it dies; others are ſubject to be waſhed off by the water, or are hatched by the ſun and moiſture thus applied together; when in the mouth of the animal, they have the dreadful ordeal of the teeth and maſtication to paſs through; and on their arrival at the ſtomach, they may paſs, mixed with the maſs of food, into the inteſtines; and when full grown, on dropping from the anus to the ground, a high road or water may receive them; if on the common, they are in danger of being cruſhed to death, or of being picked up by birds, which ſo conſtantly for food attend the footſteps of the cattle. Such are the contingencies by which nature has prevented the too great increaſe of their numbers, and the total deſtruction of the animals they feed upon."

I have once ſeen the larvæ of this oeſtrus in the ſtomach of an aſs. Indeed, there is little reaſon to doubt their exiſtence in the ſtomachs of all this tribe of animals.

The perfect fly but ill ſuſtains the changes of weather; and cold and moiſture in any conſiderable degree would probably be fatal to it. Theſe flies never purſue the horſe into the water; this averſion, I imagine, ariſes from the chillneſs of the atmoſphere over that element, which is probably felt more exquiſitely by them, than by other flies, from the high temperature they had been expoſed to during their larva ſtate. The heat of the ſtomach of the horſe is much greater than that of the warmeſt climate; being about 102° of Farenheit; and in their fly ſtate, they are only expoſed to 60°, or from that to about 80°, in very warm weather. Such a change, if ſuddenly applied, would in all probability be fatal to them; but they are prepared for it, by ſuffering its firſt effects in the quieſcent and leſs ſenſible ſtate of a chryſalis. I have often ſeen this fly in cloudy weather, and during the night time, fold itſelf up with the head and tail nearly in contact, and lying apparently in a torpid ſtate, though in the middle of the ſummer,

I never obſerved theſe bots hanging to the extremity of the rectum, previous to quitting it, as the hæmorroidales, or ſmall horſe-bots, are ſeen to do.

Whether theſe bots can at all exiſt in the ſtomach of a carnivorous animal, I am not aſſured. I gave upwards of a hundred eggs, proved by trials to be ripe, and containing a living caterpillar, to a cat in milk at various times; and on deſtroying her, at the end of two months after the firſt portion had been given, I could diſcover no traces of them in the ſtomach or inteſtines.

I gave ſix of the larvæ of the great horſe-bot, recently taken from a dead horſe's ſtomach, and perfectly alive, to another horſe, in a ball made of meal, in the centre of which they were incloſed: their effects on the ſtomach were not noticeable by any external indications; 27 of them were the next day exhibited to a horſe with the farcy, without their producing any ſenſible effect.

Of the *oeſtrus hæmorrhoidalis*, or ſmall horſe-bot. The larva, or grub, producing this inſect, is in moſt reſpects like the former, occupying the ſame ſituation alſo in the ſtomach of the horſe: it is eaſily diſtinguiſhed by its ſmaller ſize, and being nearly or quite deſtitute of ſpines, on leaving the rectum; when full grown, it aſſumes a reddiſh green colour, and in about two days becomes a chryſalis.

None of the larvæ of this family of inſects appear to change their ſkin, which at length becomes alſo the ſhell of the chryſalis: when ſqueezed, they forcibly contract themſelves into a ſmaller ſpace, and become very hard. It is probable they in this way reſiſt the violent preſſure they muſt occaſionally ſuſtain from the weight of the food, and the actions of the ſtomach, and in paſſing through the inteſtines and the ſphincter ani.

After remaining in the chryſalis ſtate about two months, the fly appears. See the deſcription at the concluſion, and the figure of it in the plate.

“ It ſeems hitherto to have been univerſally believed among naturaliſts, that the female fly enters the anus of the horſe, in a very extraordinary manner, to depoſit its eggs. Reaumur received the idea of Valliſnieri, and Valliſnieri of a Dr. Gaſpari, whoſe obſervations I ſhould ſuſpect originated from ſeeing the *hippoboſca equina* teazing the horſe, as is very commonly ſeen ; and its getting within the rectum was merely, it is probable, ſupplied by his fancy and imagination. The objections to an idea of this ſort are theſe, admitting there was any good foundation for ſuch a ſuppoſition ; that the anus is rather cloſed than opened by any irritation externally applied ; that the fly would be cruſhed in attempting to paſs the ſphincter of a horſe's rectum ; and having no means of holding, while depoſiting its eggs, it would be quickly forced out with the dung ; and it is evident, that the whole of the ova, to the amount of ſome hundreds, muſt all be depoſited in one horſe, as it is impoſſible, if the fly ſurvived, it could undergo this puniſhment a ſecond time ; for the heat and moiſture of the rectum would at leaſt deſtroy its wings, and prevent its attaining a ſecond time this ſituation.

“ I mention theſe objections, not as they merely relate to this ſpecies, but that it may not be credited of the naſalis, or indeed of any of them, that they really enter the body of the animal, to obtain for their young a ſituation there.

“ I have not ſeen any writer who has conjectured the real mode in which this fly depoſits its *ova;* which having diſcovered by repeated opportunities of witneſſing it, I can ſpeak of with certainty.

“ The part choſen by this inſect for this purpoſe is the lips of the horſe, which is very diſtreſſing to the animal from the exceſſive titillation it occaſions : for he immediately after its touch rubs his mouth againſt the ground, his fore legs, or againſt a tree ; or if two are ſtanding together, they often rub themſelves againſt each other.

“ At the ſight of this fly the horſe appears much agitated, and moves his head backwards and forwards in the air, to baulk its touch, and prevent its darting on the lips; but the fly, watching for a favourable opportunity, depoſits its eggs from the point of the abdomen, and he continues to repeat his attacks on the lip, till the enraged animal endeavours to avoid it, by galloping away to a diſtant part of the field. If it then continues to follow, or teaze him, his laſt reſource is in the water, where the oeſtrus is never obſerved to purſue him.

“ The teazing of other flies may ſometimes occaſion a motion of the head ſimilar to this; but it ſhould not be miſtaken for it, as it is never in any degree ſo violent as during the attack of the oeſtrus.

“ At other times I have ſeen this fly get between the legs of the horſe whilſt he is grazing, and then make his attack on the lower lip. The titillation occaſions the horſe to ſtamp violently with his fore-foot againſt the ground, and he often ſtrikes with his foot as though aiming a blow at the fly. They alſo ſometimes hide themſelves in the graſs ; and as the horſe ſtoops to graze, they dart on the mouth or lips, and are always obſerved to poize themſelves during a few ſeconds in the air, while the egg is preparing on the point of the abdomen.

“ When ſeveral of theſe flies are confined in a cloſe place, they have a particularly ſtrong fuſty ſmell, ſuch as we feel when animals are confined in a cloſe place : and I have obſerved both ſheep and horſes, when teazed by them, to look into the graſs, and ſmell to it very anxiouſly ; and if by theſe means they diſcover the fly, they immediately turn aſide, and haſten to a diſtant part of the field.

“ The eggs of this ſpecies appear of a darker colour than the former, and are provided with a *petiolus,* or foot-ſtalk from the ſmall end, the oppoſite being obtuſe, and provided with an *operculum :* it is alſo ribbed in a tranſverſe direction, unlike the eggs of the preceding ſpecies.

“ Our anceſtors imagined that poverty or bad food engendered theſe animals, or that they were the offspring of putrefaction. In Shakſpeare's Henry the Fourth, part 1ſt, the oſtler at Rocheſter ſays, “ peas and beans are as dank here as a dog, and that is the next way to give poor jades the bots ;” and the miſerable nag of Petruchio is ſaid to be ſo “ begnawn with the bots.” When the animal is kept from food, the bots are alſo ; and, it is natural to ſuppoſe, are then the moſt troublesome : whence aroſe the idea, that poverty or bad food could engender them.

“ Of the *oeſtrus veterinus.* This inſect was known to Linnæus, who gave it the name of *naſalis,* from an idea of its entering the noſtrils of the horſe, and depoſiting its eggs in the fauces: “ Habitat in equorum fauce per nares intrans.” Linn. Syſt. Nat. 2. p. 969. which as it could not well do without deſtroying its own wings, is probably as much a fable as the “ miré per anum *intrans,*” of the preceding ſpecies. We have ſeen four *chryſalides* of this fly, which were uniformly found under the dung of horſes, which leads to a ſuſpicion that they alſo inhabit the ſtomach of this animal. The larva is at preſent unknown ; but if it inhabited the *fauces* of the horſe, it would produce ſuch troubleſome ſymptoms as could not eaſily eſcape the notice of thoſe whoſe buſineſs it is to attend to the diſeaſes of cattle. Such a diſeaſe has, however, never been deſcribed ; nor after an extenſive opportunity, both in the dead and living ſubject, have I ever ſeen a bot in the *fauces* of the horſe. Perhaps the bots of the ſtomach, having crawled to the fauces in ſearch of food, after the death of the animal, might have given riſe to this idea : they may have even accidentally bred there ; for there is little room to doubt, that theſe animals can live in any part whatever of the alimentary canal, or the paſſages leading to it. For a figure of this fly, ſee alſo the plate of the *oeſtri.*

“ Of the *oeſtrus ovis.* About the middle of June I procured ſome full-grown larvæ of the *oeſtrus* ovis, from the inſide of the cavities of the bone, which ſupports the horns of the ſheep. They are nearly as large as thoſe of the large horſe-bot, of a delicate white colour, flat on the under ſide, and convex on the upper, having no ſpines at the diviſions of the ſegments, though provided with two curved hooks at the ſmall end. The other extremity is truncated, with a ſmall prominent ring or margin, which ſeems to ſerve the ſame purpoſe, though in an inferior degree, as the lips of the oe. equi and hæmorrhoidales, by occaſionally cloſing over, and cleaning the horny plate of reſpiration. When this margin opens, after cloſing over the plates, a ſlight ſnap is ſometimes heard, from the ſudden admiſſion of air.

“ When young, thoſe larvæ are perfectly white and tranſparent ; except the two horny plates, which are black : as they increaſe in ſize, the ſegments of the upper ſide become marked with two brown tranſverſe lines ; and ſome ſpots are obſervable on the ſides.

“ They move with conſiderable quickneſs, holding with the *tentacula* as a fixed point, and drawing up the body towards them. On the underſide of the *larva* is placed a broad line of dots, which, on examination with glaſſes, appear to be rough points, ſerving, perhaps, the double purpoſe of aſſiſting their paſſage over the ſmooth and lubricated ſurfaces

faces of theſe membranes, and of exciting alſo a degree of inflammation in them where they reſt, ſo as to cauſe a ſecretion of lymph or pus for their food.

“ I have moſtly found theſe animals in the horns and frontal ſinuſes; though I have remarked that the membranes lining theſe cavities were hardly at all inflamed, while thoſe of the maxillary ſinuſes were highly ſo. From this I am led to ſuſpect they inhabit the maxillary ſinuſes, and crawl, on the death of the animal, into theſe ſituations in the horns and frontal ſinuſes.

“ The breeds of theſe, like the *oe. bovis*, do not appear confined to any particular ſeaſon; for quite young and full-grown larvæ may be found in the ſinuſes at the ſame time.

“ When full grown, they fall through the noſtrils to the ground, and change to the *pupa* ſtate, lying on the earth, or adhering by the ſide to a blade of graſs. The fly burſts the ſhell of the pupa in about two months. The figure is given in the plate; and its deſcription at the concluſion.

“ The manner in which this ſpecies depoſits its *ova*, which we have often ſeen, has not, we believe, ever been deſcribed; nor is it eaſy to ſee, though ſtanding cloſe to the animal at the time, exactly in what way this is accompliſhed, owing to the obſcure colour and rapid motions of the fly, and the extreme agitation of the ſheep; but from the motions of the ſheep afterwards, and the mode of defence it takes to avoid it, there is little doubt that the egg is depoſited in the inner margin of the noſtril.

“ The moment the fly touches this part of the ſheep, they ſhake their heads violently, and beat the ground with their feet, holding their noſes, at the ſame time, cloſe to the earth, and running away, earneſtly looking on every ſide, to ſee if the fly purſues: they alſo may ſometimes be ſeen ſmelling to the graſs as they go, leſt one ſhould be lying in wait for them; which if they obſerve, they gallop back, or take ſome other direction, as they cannot, like horſes, take refuge in the water: to defend themſelves againſt its attacks, they have recourſe to a rut, or dry duſty road, or gravel-pits, where they crowd together during the heat of the day, with their noſes held cloſe to the ground; which renders it difficult for the fly, who makes his attacks on the wing, to get at the noſtril.

“ I imagine the noſtril, from repeated attacks of the fly, and the conſequent rubbing againſt the ground, becomes highly irritated and ſore; which occaſions their touch to be ſo much dreaded by the ſheep.

From the difficult and very precarious mode theſe flies purſue, and alſo the *hæmorrhoidalis*, in depoſiting their eggs, they cannot ſucceed in depoſiting but a few in each ſheep; whereas, on the contrary, if they actually entered thoſe cavities of the face to effect it, they muſt depoſite them all, and in one ſubject, the impoſſibility of which is already ſtated.

“ *General obſervations on the oeſtri.* Having traced theſe ſeparately through their various changes, and mode of propagation, it may not be improper to conſider their good or ill effects on the animals that are ſubject to them.

“ Though the attention of naturaliſts is at preſent occupied with the formation of a nomenclature, and deſcriptions, to every object of natural hiſtory, yet this purſuit, though difficult, and highly important, is not ſo much the ultimate aim of this ſcience, as a knowledge of their economy and properties; as it is from thoſe we are taught the moſt effectual means of avoiding the conſequences of the injurious, and of protecting ſuch as can be uſefully applied to the purpoſes of mankind. If after mature inquiry, the exiſtence of the oeſtri ſhould be proved, in a greater degree, injurious, than beneficial, by any ſervice they can afford, their numbers might be conſiderably reduced, and a total extirpation of ſome of the ſpecies would not, I am diſpoſed to believe, be altogether impracticable in our inſular ſituation.

“ The injury derived from their depredations is principally felt by the tanners, whoſe hides are often ſo perforated by theſe animals, as to be conſiderably damaged; and ſometimes the loſs of a horſe or ſheep may be occaſioned by the exiſtence of the other ſpecies.

“ If it were deſirable to leſſen their numbers, the following, I apprehend, would be the moſt ſucceſsful means. The larvæ of the oe. bovis, or ox bot, which breeds in the backs of the horned cattle, is ſo conſpicuous, that it is more eaſily deſtroyed than the others: the injection of any very corroſive liquor into the ſinus would kill it; or by puncturing the larva with a hot needle, through the aperture in the ſkin, or even by ſimple preſſure, they may be deſtroyed, afterwards extracting them, or leaving them to ſlough away, which I have often obſerved they do, when cruſhed by a blow from the horn of the beaſt, or by any other accident, without the leaſt injury to the animal. A man employed for this purpoſe might, in half a day, deſtroy every bot on a large common, the beaſts being ſuffered to paſs by him one by one.

“ In reſpect to the great and ſmall horſe-bot, thoſe who have horſes which have been much out to graſs the preceding year, in countries where theſe flies are prevalent, might conſiderably diminiſh their numbers, by examining the horſes occaſionally for the bots, during the ſummer months; when they will be found hanging to the extremity of the rectum, where they remain, eſpecially the *hæmorrhoidalis*, for ſome days before they fall to the ground.

“ The deſtruction of a ſingle one, at this ſeaſon of the year, is not only the death of an individual, and its effects, but the almoſt certain deſtruction of a numerous family.

“ I am induced the more particularly to recommend attention to this circumſtance on another account, which is from the neceſſity there is of preventing the irritation which this animal occaſions to the anus of the horſe, which at times is highly troubleſome. If the horſe is uſed on the road, while the bots are adhering to this part, the irritation becomes particularly diſtreſſing, and cauſes him to move very aukwardly and ſluggiſh, as though tired; and, if ſeverely beaten, he ſoon relapſes again into the ſame awkward way of going; and as this generally happens during warm weather, it is attributed to mere lazineſs, and ſevere correction follows, but to no purpoſe, of which we have two or three times been an eye witneſs; but, on the removal of the bot, the cure is inſtantaneous.

“ There is no medicine at preſent known that will detach them from the ſtomach, or inteſtines, though there are not wanting abundance of infallible noſtrums for this purpoſe among the very numerous profeſſors of horſe medicine. An eaſy and effectual mode for the *oe. equi*, is to deſtroy the eggs which are depoſited on the hairs, and are readily ſeen and removed by a pair of ſciſſars, or a bruſh and warm water.

“ In the ſheep, it would be much more difficult to prevent or deſtroy them by any of theſe means, particularly if they are ſituated in the maxillary ſinuſes; as, in this caſe, even trepanning them would be inſufficient, as they would probably lie concealed in the convolutions of the turbinated bones.

“ Perhaps the removal of the ſheep to a diſtant paſture, during the months of June and July, whilſt the greateſt part of the bots are yet on the ground, in a chryſalis ſtate, and not bringing them on ſuch ground again, till the ſetting in of winter, would be the means of deſtroying them moſt effectually; and this proceſs, repeated for two or three years ſucceſſively, in places where they are particularly troubleſome, might prove eventually uſeful to the farmer: the Laplanders, we learn from Linnæus, migrate annually with their rein-deer, on account of the bot which infeſts them.

On the other hand, notwithſtanding the apparently unneceſſary exiſtence and cruel effects of the *oeſtri*, they are probably not altogether without an uſe, or were deſigned by Providence to add, without a recompence, to the numerous ſufferings of theſe laborious and inoffenſive animals.

"A phyſiological view of their effects will perhaps beſt juſtify their exiſtence, and ſave them from ſuch an imputation.

"The larvæ of the *oeſtri*, when applied under proper reſtrictions, and only to a certain extent, may be of greater utility than from our preſent very limited knowlege of them we are able to diſcover; but we may venture to remark, that their effect in keeping up a conſiderable degree of irritation in the membranes, on which they are ſituated, may perhaps not inaptly be compared to that of a perpetual iſſue, or bliſter. Nor is there wanting abundant proof of the utility of local irritations, in preventing the acceſs, as well as in effecting the cure of diſorders. We often ſee a formidable diſeaſe quickly removed by bliſtering the ſkin, or by irritating the mucous membranes of the ſtomach, or inteſtines, by a vomit or purge. The appearance of exanthematous eruptions on the ſkin, and the formation of local abſceſſes, from the ſame cauſe of partial irritation, often relieve a general diſorder of the ſyſtem.

"The mucous membranes, and the ſkin, poſſeſs this power, when irritated, in a more eminent degree than all the other parts of the body, and it is to theſe the larvæ of the *oeſtri* are applied. Irritating the membranes of the ſtomach, by ſuch means, in other animals, would excite nauſea and vomiting; but the horſe, not poſſeſſing this power, his ſtomach is peculiarly fitted for the ſtimulus of ſuch inhabitants.

"How far the acceſs of thoſe dreadful diſorders, which ſometimes ariſe of themſelves in cattle and horſes, and afterwards become contagious, as the murrain, glanders, farcy, &c. may be prevented by theſe peculiar irritations, it will not be eaſy to diſcover, nor whether that ſingular tendency or diſpoſition in the horſe to inflammatory complaints, as the inflammation of the eyes, termed moon-blindneſs, inflammations of the lungs, and of the bones, &c. may be in any degree ſubdued by theſe local ſtimuli."

"In confirmation of this ſuggeſtion, I may remark, (although I am aware other reaſons may alſo be aſſigned for it,) that thoſe horſes which are not expoſed to the bots, more frequently are infected with the glanders, farcy, &c. as thoſe of the army, poſt coaches, poſt waggons, and dray horſes, theſe being rarely ſpared, from the nature of their work, to graze on the commons, and thus be expoſed to receive them."

If, on a more minute ſearch into their effects on the ſyſtem, the utility of theſe native ſtimuli of animals ſhould be eſtabliſhed, and, like the leach, or the cantharides, they ſhould be called in aid of veterinary medicine, it would be very practicable to adminiſter them artificially, in any quantity, either by the eggs, or the larvæ themſelves.

If the ſtimulus is conſidered as of too gentle a nature, it is, in ſome meaſure, atoned for by its permanency, and the unlimited power of increaſing their numbers; at leaſt by the adminiſtration of them, in this way, we might accurately aſcertain their real effects, and whether they are ſo fatal as has been imagined.

There ſeems alſo to be a principle exiſting in nature of leaving no ſpace unoccupied that can poſſibly afford a ſituation for the convenient increaſe of animal exiſtence: hence, perhaps, ſprings one of the cauſes for the extraordinary occupation of theſe parts by theſe animals.

The characters which appear to be general in the ſtructure of this family are, that the *antennæ* have three articulations, the laſt almoſt globular, having a briſtle or hair in front; and theſe antennæ are each lodged in a deep excavation of the face. The mouth, a ſimple aperture, not at all projecting from the head. The *palpi*, or feelers, are two, of two joints, their extremity globoſe, ſunk in a depreſſion on each ſide the mouth.

All the ſpecies of this extraordinary family at preſent known are,

Oeſtrus bovis, great ox bot fly. Browniſh unſpotted wings; abdomen with a black band in the middle, and its extremity with orange-yellow hairs.

Oe. equi, or great horſe bot. Wings white, with a ſtripe of black, and two ſmall black ſpots.

Oe. hæmorrhoidalis, or leſſer horſe bot. Wings dark, unſpotted, abdomen black, baſe white, and point orange.

Oe. veterinus, or *naſalis* of Linnæus, the red bot fly. Wings unſpotted, ſides of the thorax, and baſe of the abdomen, with white hairs.

Oe. ovis. The ſheep bot fly. Wings tranſparent, with ſmall ſpots at the baſe; abdomen chequered with black and white.

Oe. tarandi. The rein-deer bot fly. Wings immaculate, thorax with a black band, abdomen orange, poſteriorly yellow.

Larva, &c. In the backs of the rein-deer of Lapland.

Oe. cuniculi. The American rabbit bot. Black wings, brown thorax, black beyond the middle, poſteriorly, on the ſides of the thorax, and the baſe of the abdomen, with yellow hairs. Larva. In the backs of the hares and rabbits of Georgia. The immenſe ſize of this oeſtrus, which is more than twice as large as the ox bot of this country, would lead us to doubt, whether it might not have been the inhabitant, originally, of ſome of thoſe immenſe animals of that continent, which are now loſt. See Lin. Society Tranſ. vol. iii. p. 299.

Oe. buccatus. Carolina bot fly. Red-brown, face white, with black ſpots.

Found in Carolina and Georgia.

Oe. pecorum. Wings brown, thorax grey, hairy, abdomen black, baſe with white hairs. In the inteſtines of the ſheep, ſays Fabricius, whoſe ſpecies are to be adopted with great caution; perhaps it is only a dark-coloured female, of the oe. naſalis. The whole genus has been greatly confuſed by Fabricius, and not leſs by his ſucceſſor, Prof. Gmelin, where three additional ſpecies, *antilopæ*, *faſciculoſus*, and *hominis*, are probably all ſpurious. The firſt of theſe agrees, in all reſpects, with the female of oe. equi, the habitat being falſe. The ſecond is a variety of the oe. naſalis, and the third is, perhaps, merely an accidental depoſit of oe. bovis, in the human body, of which there are numerous inſtances.

Oe. Georgianus. Body and wings black, ſides of the thorax white, with two black ſpots.

It is found in American Georgia; the animal it infeſts is not yet known. From the cabinet of Mr. Francillon. It is twice as large as the oe. bovis, and very diſtinct from any thing yet deſcribed.

For the figures of theſe animals, ſee the plate of the genus *Oeſtrus*.

BOTWAR, in *Geography*, a town of Germany, in the circle of Suabia, and duchy of Wurtemberg, ſeated on a ſmall river of the ſame name, which runs into the Neckar; 10 miles S. of Heilbronn, and 13 N.N.E. of Stutgard.

BOTZEN. See Bolzano.

BOTZENBURG. See Boitzenburg.

BOVA, a town of Italy, in the kingdom of Naples, and province of Calabria Ultra, the ſee of a biſhop, ſuffragan of Reggio, ſituate on the brow of a hill, at the foot of the Apennines, near the ſea; 20 miles S.E. of Reggio. Being out of the way of trade and thoroughfare, this place can boaſt neither of wealth nor agriculture. The villages in its vicinity carry corn, cheeſe, and cattle to Reggio; but that being a poor mart, has but ſmall demands, and a little circulation of money. Moſt of the inhabitants are of Greek origin and riſe; and emigrated from Albania a few centuries ago. Their common language is Albaneſe, which is a dialect quite different from the modern Greek and Sclavonian languages; and though known in Europe for more than a thouſand years, and ſpoken by all the nations round Albania, ſtill remains without an alphabet, and many of its ſounds are not to be accurately expreſſed either by Latin or Greek letters. Hence it may be inferred, that it is a mixture of the dialects of thoſe Tartarian hordes that over-ran Macedonia and Greece in the 8th century; to which medley the intercourſe with Germans, Italians, and cruſaders, has added a variety of foreign terms. The men can ſpeak Calabreſe; but the women, who neither buy nor ſell, underſtand no tongue but their own, which they pronounce with great ſweetneſs of accent. Swinburne's Travels in the two Sicilies, vol. ii. p. 241, &c.

BOUAGE, a town of France, in the department of the Lower Loire, and chief place of a canton in the diſtrict of Nantes; 8 miles S.W. of Nantes.

BOUALI, a town of Africa, the capital of Loango, ſo called by the French.

BOVATA *terræ*, in *Ancient Law Writers*, ſignifies an oxgate of land, or ſo much as may be ploughed in a year with one ox; by ſome reckoned at fifteen acres, by others at eighteen, by others at twenty, and by others at thirteen or twenty ſhillings yearly rent.

This is otherwiſe called *bovatus*, and *bovariata terræ*.

BOUATI, in *Botany*. Rumphius Amb. 2. tab. 41. Boſc in Nouveau Dictionnaire d'Hiſtoire Naturelle. Claſs, *hexandria digynia*.

Gen. Char. *Cal.* perianth ſmall, tripartite, pubeſcent, caducous. *Cor.* petals three, oblong, pointed, concave, longer than the calyx. *Stam.* ſix. *Piſt.* germ ſuperior, oval, compreſſed, villoſe, dimpled at its ſummit; ſtigmas two, ſeſſile, obtuſe. *Per.* a capſule nearly heart-ſhaped, compreſſed, ſmooth, ſharp edged, dimpled at its ſummit, and divided into two cells, each of which contains a ſingle oval ſeed.

It is a ſmall tree which grows in the Eaſt Indies, is extremely bitter in all its parts, and is given with ſucceſs in fevers. It is alſo uſed as a reſtorative, and an antidote to poiſons.

BOUBI, in *Ornithology*, the name given by the French navigators to the booby of the Engliſh. See Booby.

BOUBIL, the name by which the Chineſe at Canton denominate the crying-thruſh, *turdus canorus*. In other parts of China, the ſame bird paſſes under the title of *wa-mew*. Sonnerat tells us, this is the only ſinging bird that is known to inhabit the vaſt empire of China, where it is occaſionally kept in cages, for the ſake of amuſement, by the fair ſex. It ſubſiſts on rice, worms, inſects, &c. The ſame bird is alſo called *baniahbou*. See Canorus.

Boubil, *Boubil de la Chine*, the name given by Sonnerat to the *turdus bubil* of Gmelin, and *chaunting-thruſh* of Latham. See Bubil.

BOUBOU. Le Vaillant, in his Hiſtory of the Birds of Africa, beſtows this name on a ſpecies of Turdus, the male of which has a remarkable peculiar note, reſembling the word *boubou*, often repeated. This bird was previouſly deſcribed by Buffon, under the title of *Merle noir et blanc d'Abiſſinie*: it is alſo the *turdus æthiopicus* of Gmelin.

BOUBOUT, one of the ſynonymous names of the hoopoe, or hoop, the *upupa epops* of Linnæus. See Epops.

BOUC, in *Zoology*, *Geyſſet bock*, Geſn. ſynonymous names of the goat, *capra hircus*. *Bouc d'Afrique*, is *capra depreſſa*; and *bouc de juda* (of Buffon) is *capra reverſa* of Linnæus; the *whidaw goat* of Pennant.

Bouc *Damoiſeau*, the French name of the Linnæan *antilope grimmia*; called alſo by them *grimme*, and *Chèvre de grimme*.

Bouc-*Eſtain*, or *Bouc-ſtein*, the names of the wild goat (*capra ibex* of Linn.), in old French writers. The word is of German origin, being derived from *bock*, or bouc, and *ſteen*, a rock or ſtone; in French, *bouc de rocher*; or, as we ſhould render it, the rock, or mountain goat. Thus alſo, *bouc des rochers*, *bouquetin*, *bouc ſauvage*, &c.

BOUCCANEGRE, in *Ichthyology*, one of the ſynonymous names of *ſparus pagel*. See Pagel.

BOUCARDE, or Bucarde, in *Conchology*. See Cardium, the cockle.

BOUCHAIN, in *Geography*, a town of France, in the department of the North, and chief place of a canton in the diſtrict of Douay, ſeated on the Scheldt, and carrying on a conſiderable trade in corn and cattle. The place contains 1,128, and the canton 13,509, inhabitants; the territory comprehends 152½ kiliometres and 20 communes. Bouchain is a ſtrong town; it was taken by the duke of Marlborough in 1711, after a ſiege of 30 days, retaken in the following year by mareſchal Villars, and inveſted by the Auſtrians in 1793, but ſoon relieved; 3 leagues S.W. of Valenciennes, and 2½ N.N.E of Cambray.

BOUCHARDON, Edme, in *Biography*, an eminent French ſculptor, was born in 1698 at Chaumont in Baſſigny, where his father was a ſculptor and architect: and educated at Paris, in the ſchool of Couſtou the younger. At Rome, whither he removed as the king's penſioner, to which his merit advanced him, he cultivated, with aſſiduity and ſucceſs, his talent for deſign, by copying the precious remains of antiquity, as well as the works of modern painters. He afterwards ſettled at Paris, and, notwithſtanding his ſingular ſimplicity of character, became eminently diſtinguiſhed, ſo that he was employed in ſeveral works of importance; the principal of which are the fountain in the rue de Grenelle, fauxbourg St. Germain; a ſtatue of Love making a bow of the club of Hercules, with the arms of Mars; and the equeſtrian ſtatue of Lewis XV. at Paris. In 1736, he was appointed deſigner to the Academy of Belles Lettres; and, in 1744, he was admitted into the Academy of Painting, of which he was made profeſſor in 1746. Having acquired a decent fortune, by his induſtry and regularity, and attained high eminence in his art, he died in 1762. His compoſitions are formed in the ſtyle of ſimple antiquity, and more admired for correctneſs and good taſte, than for force of expreſſion or vigour of imagination. His drawings are highly eſteemed; they have furniſhed various engravings; and a Treatiſe on Anatomy, for the uſe of artiſts, publiſhed by Huquieres in 1741, is illuſtrated with figures by his hand. The chief amuſement of this artiſt was muſic, which he performed in a maſterly ſtyle. D'Argenville's Vies de Sculpteurs. Gen. Biog.

BOUCHARI, or Pouchari, alſo *Boutcher*, *Boucherie*, &c. in *Ornithology*. Theſe are the common names of the grey-backed ſhrike, *lanius excubitor*, in Burgundy. The words are derived from the Engliſh butcher-birds, an epithet applied with us, in a general manner, to all the ſpecies of the ſhrike, or lanius genus.

BOUCHE, Martin, in *Biography*, an engraver, who flouriſhed in 1680. He was chiefly employed by bookſellers: and portraits were his principal performances. He worked altogether with the graver, in a neat but ſtiff ſtyle; but his portraits, ſeveral of which were thoſe of Jeſuits who ſuffered in England about his time, are not deſtitute of merit. Strutt.

Bouche *of court*, the privilege of having meat and drink at court ſcot-free.

The word is alſo written *bowge, bouge,* and *budge;* it is mere French, where it ſignifies *mouth*. The French ſtill uſe the phraſe, *Avoir bouche à la cour;* that is, *to have table or diet at court*.

This privilege is ſometimes only extended to bread, beer, and wine: it was a cuſtom anciently in uſe, as well in the houſes of noblemen as in the king's court.

Thomas earl of Lancaſter retained ſir John de Ewre, to ſerve him with ten men at arms in time of war, allowing them *bouge of court*, with livery of hay and oats, horſeſhoes, and nails. Sir Hugh Merrill had the ſame privilege for life, on condition of ſerving king Edward II. Kennet. Gloſſ. ad Paroch. Ant. p. 378.

Bouche *d'Argent*, in *Conchology*, the trivial French name of a ſhell of the turbo genus, the mouth, or opening of which is ſilvery within. Linnæus calls it *turbo argyroſtomus;* the Engliſh ſilver-mouth turbo, or ſilver mouth.

Bouche *d'Or*, as in the former, a trivial ſort of expreſſion among the French collectors for the Linnæan *turbo chryſoſtomus*, the mouth of which is of a fine golden hue. This is the gold-mouth turbo of the Engliſh.

There are a number of other ſhells, diſtinguiſhed in like manner, by the colour of the mouth, to each of which a characteriſtic epithet is given; but ſuch names are always capricious, and liable to be miſapplied, becauſe they are the names in common uſe among the dealers in ſhells, and others, who have only a ſlight acquaintance with the ſubject of teſtaceology. It is always better, therefore, to retain the names aſcribed to them by Linnæus, and other Latin authors.

BOUCHEMAINE, in *Geography*, a town of France, in the department of the Maine and Loire, and chief place of a canton in the diſtrict of Angers; 4 miles S. of Angers.

BOUCHENE', a town of Perſia, in the province of Korafan; 20 miles N. of Herat.

BOUCHER, Francis, in *Biography*, a modern French painter of celebrity, was born at Paris in 1706, firſt educated under Le Moine, and finiſhed his ſtudies at Rome. Upon his return to Paris, where he ſettled, he obtained, by the ſtyle of his painting, the appellation of the "painter of the graces," and the "French Albani." He was advanced to the poſt of firſt painter to the king, and that of director of the Academy of Painting, after Vanloo; but he was carried off by a premature old age in 1770. His character was ſocial and frank, without envy or avarice; he was always ready to beſtow his works on thoſe who admired them, and liberal in his encouragement of young artiſts. Of his ſingular modeſty we have an inſtance, in his refuſal to retouch a picture of one of the firſt Italian maſters, alleging, "Such works are holy veſſels to me." His works were held in high eſtimation. He poſſeſſed great fertility of invention; but, ſays Mr. Strutt, he was defective in correctneſs and grandeur of deſign. He executed ſome ſlight etchings from his own compoſitions, and thoſe of other maſters. Strutt. Nouv. Dict. Hiſt.

Boucher, John, a furious fanatic, was born in Paris, where he became profeſſor of philoſophy and theology, and afterwards rector, in 1580. He was alſo prior and doctor of the Sorbonne, and was made rector of St. Benedict. As a preacher and a writer, he was a leading and active promoter of the league againſt king Henry III.: the rebels firſt aſſembled in his apartments in 1585; and he ordered the alarm-bell to be rung in his church, which contributed to excite the popular inſurrection of 1587, the conſequences of which were ſo diſgraceful and detrimental to the king. Soon after he publiſhed a diſcourſe, entitled, "De juſta Henrici III. abdicatione e Francorum regno," Par. 1589; which contained ſeveral very infamous charges againſt the king. Boucher has been charged with inſtigating James Clement, a Dominican monk, to the aſſaſſination of Henry; however this be, he applauded the act after it had been committed. He was a violent oppoſer to the ſucceſſion of Henry IV. againſt whom he declaimed from the pulpit and from the preſs. Nor did his oppoſition ceaſe with the king's abjuration; for pretending that he was a feigned convert, and that the pope's abſolution was invalid, he publiſhed "Nine Sermons" on the ſubject, which he had preached at Paris in 1593. When the Pariſians received Henry into the capital, theſe ſermons were publicly burnt, and Boucher, perſiſting in the party of the leaguers, fled with the Spaniſh garriſon, in 1594, into the Low Countries. At Tournay he obtained a canonry; and, after a reſidence of 50 years, he died dean of that chapter, in 1644. Under a feigned name he is ſuppoſed to have written an apology for John Chatel, who made an attempt on the life of Henry IV. and alſo for the Jeſuits; who, in conſequence of it, were baniſhed from France. So atrocious was his virulence as a partiſan, that he juſtified the conduct of thoſe wretches who had hanged the firſt preſident Briſſon, and dignified them with the title of martyrs of Jeſus Chriſt, after they had been executed by the duke de Mayenne for that murder. It is ſaid, however, that, towards the cloſe of his life, he regretted living among the enemies of his country, and manifeſted ſome ſigns of repentance for the atrocities of which he had been guilty. Gen. Dict.

Boucher, John-Joseph, born at Liſle, the 25th of March 1715, was made, in ſucceſſion, phyſician to his native city, correſponding member of the Academy of Sciences, and foreign aſſociate of the Royal College of Surgery at Paris. He publiſhed in 1751, "Methode abregé pour traiter la dyſenterie regnante à Liſle en 1750," 4to. He alſo furniſhed the Journal de Medicine with "Meteorological Obſervations" made at Liſle, and with other philoſophical papers. Eloy. Dict. Hiſt.

Boucher, in *Geography*, a town of Perſia, in the province of Farſiſtan, on the north coaſt of the Perſian gulf; 160 miles S.W. of Schiras.

BOUCHOUX, a town of France in the department of Jura, and chief place of a canton in the diſtrict of St. Claude. The place contains 1,890, and the canton 6,094, inhabitants; the extent of the territory comprehends 127½ kilometres and 13 communes.

BOUCLANS, a town of France, in the department of the Doubs, and chief place of a canton, in the diſtrict of Beſançon; 8 miles E. of Beſançon.

BOUCLIER, in *Ichthyology*, ſynonymous with cycloptère, the French name of the Cyclopterus genus of fiſhes.

Bouclier *d'écaille de tortue*, in *Conchology*, the name given by the French collectors to thoſe ſhells of the limpet genus whoſe colours, and general form, bear ſome reſemblance to the ſcale of a tortoiſe. The moſt remarkable ſpecies of this kind is *patella teſtudinaria* of Linnæus.

Bouclier, in *Entomology*, a genus of coleopterous inſects in Olivier's arrangement, included in his firſt ſection.

The boucliers are diſtinguiſhed by having two tranſparent wings under the elytra; body a little depreſſed; thorax large, dilated, ſcarcely leſs than the elytra, and concealing the head of the inſect. The antennæ clubbed, perfoliated, ſomewhat compreſſed, nearly the length of the thorax, with eleven joints, the firſt of which is large, elongated, and clubbed, and the laſt almoſt oval. The mouth is furniſhed with horny, ſimple mandibles; acutely pointed jaws; and four unequal filiform feelers; and laſtly, the tarſi are filiform, and compoſed of five joints.

Inſects of this tribe were formerly confounded with thoſe of *caſſida*, *elophorus*, *ſphæridium*, *nicrophorus*, *opatrum*, and *nitidula*, from all of which they are to be diſcriminated by the foregoing character of bouclier.

There is another very analogous genus to this, namely, *peltis* of Fabricius. Peltis was a name given many years ago by Geoffroy to the inſects afterwards called *ſilpha* by Linnæus. It was again taken up by Illiger, who beſtowed it on a new genus of *coleoptera* eſtabliſhed by him, in which the Linnæan ſpecies of *ſilphæ*, *groſſa*, *ferruginea*, *oblonga*, and *limbata*, were compriſed. The genus *peltis* is adopted from Illiger by Fabricius, in his laſt work on coleoptera, *Syſtema Eleutheratorum*. It will be therefore proper to point out exactly in what particulars thoſe two genera differ. The peltis has the lower lip truncated and ciliated, while in the boucliers that part is dilated and bifid; there is ſome diſſimilitude in the external character of the two genera, and their habits of life are diſtinct. See Peltis.

The boucliers exhale a moſt fœtid odour. Commonly they are found feeding upon cadaverous carcaſes, the dung of animals, or other ſuch filth. There can be no doubt that the ſtench of theſe inſects affects even the animal matter which they crawl upon, and on which they ſubſiſt. When taken in the hand, theſe beetles ſpurt from the mouth, as well as from the anus, a drop of liquor of a dark or black colour; the conſiſtency of which is thick, and the ſtench diſguſting. This liquor is not produced by violence or compreſſion; it is voluntarily diſcharged by the creature, and is, beyond diſpute, a ſecretion prepared by nature to promote the putrefaction of the fleſh it may chance to meet with, as it is only in that ſtate that the boucliers feed upon it.

Olivier deſcribes only a few ſpecies of this family; namely, *le thoracique*, which is black, oval, and depreſſed; thorax fawn colour; and wing-caſes with elevated lines. *Le littoral* is black, long, with three elevated lines on the wing-caſes, and a tranſverſe protuberance. *Le raboteux* is black; the wing-caſes rugged, with three elevated lines; the thorax rugged likewiſe, and ſinuous behind. *L'atre* is very black, with an entire thorax; the wing-caſes dotted, with three ſmooth, elevated lines. *L'obſcur* is black, ſlightly convex, with the wing-caſes dotted, and three elevated lines obſcurely marked. *Le quadriponctué* is oval, depreſſed, and black; the wing-caſes of a pale yellow, with two black dots on each. Theſe are all the boucliers mentioned.

BOUCNASCH, in *Geography*, a town of Germany, in the duchy of Holſtein; 5 miles E. N. E. of Rendſburg.

BOUCOIRAN, a town of France, in the department of the Gard, and chief place of a canton, in the diſtrict of Uzes; 3 leagues W. of Uzes.

BOUCONVILLE, a town of France, in the department of the Meuſe, and chief place of a canton, in the diſtrict of St. Mihiel; 2 leagues E. of St. Mihiel.

BOUDHA, in *Indian Mythology*. See Boodh.

BOUDIN DE MER, in *Zoology*, the name given by Dicquemare in the Journal de Phyſique, October, 1778, to a ſort of marine worm with a ſheath, which, it is believed, muſt appertain to the *nereis* genus; but of which the deſcription is ſo very incomplete as to render this a matter of uncertainty. The animal inhabits a membranaceous ſheath about four inches long.

BOUDOIR, Le, in *Geography*, a ſmall iſland in the Southern Pacific ocean, diſcovered by Quiros, in 1606, by whom it was called "La Dezana;" in 1767, by Wallis, who named it "Oſnaburg;" and in the following year by Bougainville, who gave it the name of "Le Boudoir," or "Pic de la Boudeuſe." The natives call it "Maitea," according to the report of captain Cook, who viſited it in 1769. See Maitea.

BOUDRI, or Boudry, a town and chatelain of Swiſſerland, in the county of Neuchatel, 6 miles S. S. W. of Neuchatel, near the river Reuſe, which runs into the lake of Neuchatel. N. lat. 46° 59′. E. long. 6°. 38′.

BOUDROU, or Boudroun, the modern name of the ancient "Halicarnaſſus," (which ſee), ſituate at the entrance of the Ceramic gulf, now called the gulf of Stancho, on the coaſt of Caria. The fortreſs, which is at the entrance of the preſent harbour of Boudroun, is the work of the knights of St. John of Jeruſalem, who made themſelves maſters of this place, when, after the firſt cruſades, they had eſtabliſhed themſelves at Rhodes. They conſtructed this citadel on the foundations of the magnificent palace of the conſort of Artemiſa, and named it "Caſtel San Pietro," or, in Spaniſh, "San Pedro." Of this the Turks made "Bedro," then "Boudroun," changing the P into B, according to their manner of pronunciation. Coats of arms, ſculptured in ſome compartments of the walls, ſtill ſhew, as at Rhodes, in whoſe hands Boudroun was, before it paſſed into thoſe of the Turks. Its preſent poſſeſſors have, with their cuſtomary negligence, ſuffered the harbour to be choaked up, ſo that there is no longer water enough for large ſhips; the harbour, however, is ſafe and commodious, leaving to the wind and ſea only a very narrow entrance. N. lat. 36° 59′. E. long 27° 15′.

BOUDS, in *Entomology*, the epithet under which the *weevil* is diſtinguiſhed in ſome countries.

BOVEE, in *Geography*, a town of France, in the department of the Meuſe, and chief place of a canton, in the diſtrict of Commercy; 5 leagues S.E. of Bar-le-Duc.

BOVELLES, a town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Amiens; 2 leagues W. S. W. of Amiens.

BOVENA, the moſt eaſterly of the Hieres iſlands to the eaſt of Toulon, in the Mediterranean, on the coaſt of France. See Hieres.

BOVENDEN, a town of Germany, in the circle of the Upper Rhine, and principality of Heſſe-Rhinfels; 4 miles N. of Gottingen.

BOVES, a town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Amiens; 1½ league S. E. of Amiens.

BOUEXIERE, La, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Vitré; 10 miles N.E. of Rennes.

BOUFFE, in *Zoology*, a race of dogs with fine, long, frizzled hair; a croſs breed between the barbet and great ſpaniel.

BOUFFLERS, Louis-Francis, in *Biography*, duke, peer, and marſhal of France, and a celebrated general, was the ſon of Francis count of Boufflers, and born in 1644. In 1669, he became colonel of dragoons, and ſerved in the conqueſt of Lorraine under marſhal Crequi; and in the war againſt Holland he diſtinguiſhed himſelf, under Turenne, in ſeveral battles and ſieges. He afterwards ſerved in Germany, on the frontiers of Spain, and in Flanders; and at length was made general of the army on the Moſelle, in 1690. After ſeveral ſervices of importance at Mons, Liege, Luxemburg, and Namur, &c. he was advanced in 1693 to the rank of marſhal of France; and, in the following year, he was made governor of French Flanders and the town of Liſle. In 1695, having held out 63 days againſt the united forces of the allies under king William at Namur; when the place capitulated, he was arreſted priſoner of war; and upon his remonſtrance that the whole garriſon, which had not been ſurrendered by the French, according to the articles of war, ſhould have been retained rather than himſelf, he was anſwered, by the compliment, "Sir, you are eſtimated at 10,000 men." He afterwards conducted the conference which terminated in the peace of Ryſwick. In 1708, he acquired great glory by an obſtinate defence of Liſle for four months, when it was threatened with a ſiege by Marlborough and Eugene. On this occaſion he diſplayed his magnanimity, by his noble declaration to a perſon who repreſented to him the facility of killing prince Eugene; "Take him priſoner," ſays he, "and your fortune is made; but expect the moſt ſevere puniſhment, if you undertake any thing againſt his life." At the battle of Malplaquet, he conducted the retreat, ſo as to loſe neither cannon nor priſoners. Having eſtabliſhed the character of a true patriot, as well as that of a great commander, he died at Fontainbleau, in 1711, at the age of 68. "His heart," ſaid madame de Maintenon, "was the laſt part that died." Nouv. Dict. Hiſt. Gen. Biog.

Boufflers, in *Geography*, a town of France, formerly called "Cagni," in the department of the Oiſe; 7 miles W. of Beauvais.

BOUFRAMONT, a town of France, in the department of the Voſges, and chief place of a canton, in the diſtrict of Neufchâteau; 2 leagues S. of Neufchâteau.

BOUGAINVILLE, John Peter de, in *Biography*, was born at Paris in 1722, and educated at the college of Beauvais. The firſt exhibition of his literary character was in a proſe tranſlation of "Anti-Lucretius," with a preliminary diſcourſe. Amongſt the friends and patrons, procured for him by his diſtinguiſhed literary talents and amiable qualities, was M. Freret, ſecretary of the Academy of Inſcriptions and Belles Letters, by whom he was introduced into that ſociety, and whom he ſucceeded in his office. Of the various papers, which he wrote for the Memoirs of the Academy, two of the moſt conſiderable are thoſe on the voyages of Pytheas of Marſeilles, and of Hanno the Carthaginian. In 1754, he was admitted into the French academy; and appointed cenſor-royal, and keeper of the antiquities in the Louvre. He alſo publiſhed "a parallel between Alexander and Thamas Kuli Khan;" and edited Freret's Chronology. He died of an aſthma, to which he had been ſubject from his youth, at the caſtle of Loches, in 1763. Nouv. Dict. Hiſt.

Bougainville, M. D. F. a native of France, and the firſt perſon of that country who circumnavigated the globe. His nautical diſcoveries were very numerous, and he occupies a high rank among thoſe who have extended our acquaintance with diſtant ſeas and iſlands. He was killed by the mob in a tumult at Paris, May 10, 1792.

Bougainville *bay*, in *Geography*, lies in the ſtraits of Magellan, on the north ſide.

Bougainville *iſland*, an iſland of the South Pacific ocean, adjoining a group of other iſlands, with which it forms a bay not leſs than 15,000 toiſes in extent, ſeen by M. Bougainville in 1768, and ſeparated by the ſtraits, called after his name, from the iſland of Bouka, which ſee. The high mountains of this iſland are covered with trees, and appeared to the voyagers in ſearch of La Périouſe to be at leaſt 1200 toiſes in perpendicular height, and to be diſtant from the ſhore above 20,000 toiſes. It terminates in very low lands, having fine plantations of cocoa-nut trees, and ſeemed to be very populous. The moſt ſoutherly point of this iſland is in S. lat. 7° 4′ 5[illegible]″. E. long. 155° 38′ 34″. The northern point, called point Laverdy, is in S. lat. 5° 34′. E. long. 154° 51′. See Arsacides and Solomon *iſlands*.

Bougainville's *ſtraits*, lie in the South Pacific ocean, at the N. W. end of the iſlands of Solomon; which ſee.

BOUGEANT, William-Hyacinth, in *Biography*, a French Jeſuit, was born at Quimper, in 1690, and having been educated among the Jeſuits, he taught the languages and rhetoric in their ſeminaries at Caen and Nevers. He afterwards reſided in the college of Lewis le Grand at Paris, and devoted himſelf wholly to literature. Beſides the part which he took in the Journal de Trevoux, he was the author of ſeveral works; the principal of which are "Hiſtory of the Wars and Negotiations which preceded the Treaty of Weſtphalia, in the reign of Lewis XII.;" 2 vols. 12mo. a work of high eſtimation for its curious facts and elegant ſtyle; "Expoſitions of the Chriſtian doctrine by queſtions and anſwers, divided into three catechiſms," 4 vols. 12mo.; "Voyage Merveilleux du prince Fan-Feredin dans la Romancie," 12mo. a performance of fancy for which ſome orthodox zealots occaſioned his temporary exile to La Fleche; "Three Comedies," in proſe. He alſo wrote ſome controverſial pieces on the euchariſt, and ſome critical papers in the Memoirs de Trevoux. After his death, was printed his "Hiſtory of the Treaty of Weſtphalia," 2 vols. 4to. a work that is ranked among the beſt hiſtorical productions of France. Bougeant was of an amiable, ſocial diſpoſition; and is thought to have felt much uneaſineſs from the attacks that were made upon him, which ſhortened his days. He died at Paris in 1743. Nouv. Dict. Hiſt.

BOUGH, in *Antiquity*. Green boughs made part of the decorations of altars and temples, eſpecially on feſtival occaſions. Oaken boughs were offered to Jupiter; thoſe of laurel to Apollo; of olive to Minerva; myrtle to Venus; ivy to Bacchus; pine to Pan; and cypreſs to Pluto.

BOUGIE, in *Surgery*, is a French term, originally denoting a wax taper, but now generally applied to ſeveral inſtruments which are uſed by ſurgeons in diſeaſes of the urinary paſſage, &c. See the articles Caruncle, Stricture, Urethra, and Œsophagus, where an account is given of the diſorders in which bougies are principally employed, the ſubject of the preſent article being chiefly on the compoſition of theſe chirurgical inſtruments.

Contrivances for dilating the urethra, in caſes of obſtruction to the flow of urine, were employed even ſo early as the time of Albucaſis, and the Arabiſtical ſurgeons; but theſe were not brought to any tolerable degree of perfection until about the middle of the ſixteenth century, when the frequent occurrence of ſtrictures in the urethra introduced them into more general uſe. The firſt efforts of ſurgeons, in this particular department of their art, may be peruſed in the writings of Andreas Lacuna, Amatus Luſitanus, Alphonſus Ferrus, Ambroſe Paré, Franc. Arcæus, Theodore Mayerne, John de Vigo, and Fabricius ab Aquapendente.

It is not eaſy to determine who invented wax candles, or rather who applied them, for theſe purpoſes; but, as the name *bougie* is of French origin, it may be the invention of a French ſurgeon, and perhaps of Guido de Cauliaco, (who flouriſhed before the exiſtence of Syphilis in Europe); for this ſurgeon, in his chapter "De ulceribus ancharum," &c. Chir. Mag. Tract. IV. Doctr. II. cap. 7. recommends the "Turunda ex cera," to be paſſed up the urethra.

The materials commonly had recourſe to, in the fabrication of bougies, catheters, and ſounds, during the ſixteenth century, were gold, ſilver, and lead; but as theſe metallic rods were not ſufficiently pliable and ſoft for introduction into a diſeaſed urethra, ſurgeons afterwards uſed bougies formed of ſlips of linen or cloth, dipped in melted wax, &c. and rolled into the ſize of a gooſe-quill, of ſufficient length to paſs as far as the neck of the urinary bladder. This kind of bougie was greatly improved by Mr. Daran, of Paris, who, nevertheleſs, made uſe of ſome very ridiculous and uſeleſs ingredients in the compoſition of them; ſuch as ſheep's dung, pulverized ſhoe-leather, port wine, and live pigeons; not to mention various other ingredients, equally needleſs, though not quite ſo abſurd and prepoſterous.

As it is now generally admitted by ſurgeons that bougies act mechanically only, and not medicinally, in curing diſeaſes of the urinary canal, we ſhall proceed to deſcribe the properties and compoſition of waxen or plaſter bougies; after which we ſhall notice the elaſtic bougies, and ſhall offer a few hints on an invention by Mr. Smyth, of London, who has lately contributed to the revival of metallic inſtruments, which had almoſt been wholly laid aſide, on account of their wanting due flexibility, &c.

The properties required in a bougie for dilating a contracted urinary canal are, 1. Sufficient firmneſs to overcome the reſiſtance of the ſtricture; 2. A degree of flexibility, which ſhall yield and accommodate itſelf to the windings or tortuoſities of the morbid canal; 3. So much ſtrength, coheſion, or tenacity, as not to be in danger of breaking; 4. Perfect ſmoothneſs of ſurface, that it ſhall occaſion no uneaſineſs or difficulty in paſſing; 5. A mildneſs in its compoſition, which may enſure its remaining for a ſufficient time in the urethra, without exciting pain or inflammation.

That it is poſſible to communicate a medicinal quality to bougies cannot be denied; and it having been an old opinion that ſtrictures were uſually attended with ulcers or abraſions in the urethra, which required healing, ſurgeons have frequently employed medicines in the compoſition of bougies, ſuppoſed to poſſeſs a power of cicatrizing theſe ulcers: but of late, both the remedy and the diſeaſe have been exploded; we do not any longer ſuſpect venereal ulcers as a concomitant ſymptom of ſtricture, and therefore have diſcontinued what were called cicatrizing applications. Still, however, the idea of employing mercury in this way is not wholly given up; and there are medical practitioners who prefer bougies containing a large proportion of the ſpecific, believing that it tends to eradicate any venereal taint in the ſyſtem: but the major part of the profeſſion conſider mercury as entirely uſeleſs in theſe caſes; becauſe, if there happens to be any venereal taint in the conſtitution, this mode of adminiſtering mercury would not be the moſt eligible for the cure; and becauſe the addition of ſuch an incongruous article to the other ingredients has the effect of diminiſhing the tenacity of the bougies. A preſcription formerly in vogue, and which therefore had been received into the laſt edition of Chambers's Cyclopædia, conſiſted of Burgundy pitch, two ounces; quickſilver, one ounce; and crude antimony in powder, half an ounce.

The objection againſt antimony, and ſuch like brittle materials, will undoubtedly be urged with at leaſt as much force as that we have already made againſt mercury; and on this account we recommend that no mineral ſubſtance ſhall be employed in ſuch quantity as to leſſen the tenacity or coheſive nature of the plaſter compoſition.

The beſt formed plaſter bougies may, without any injury, be varied in the proportion of their ingredients, or in the colouring matter they contain, according to the temperature of the weather, or the intention of the ſurgeon. They may be coloured red, with a little cinnabar; white, with ceruſſe; black, with æthiops, &c.; and in warm weather, or a tropical climate, they ſhould be made of a firmer conſiſtence than in a cold country. The baſis of all plaſter bougies ſhould be wax and oil: the wax may be either yellow or white; the oil, either vegetable or animal; to which may be added, a ſmall proportion of reſinous matter, &c. to afford the degree of conſiſtence and tenacity we require. The ingredients ſhould be well boiled and incorporated together, eſpecially when there is the addition (uſually made) of litharge or minium in conſiderable quantity.

The following are among the moſt ſimple and approved compoſitions for plaſter bougies:

N° I. ℞. Gum lac, one pound;
Litharge plaſter, three pounds:

Diſſolve the gum lac in the plaſter by ſlow boiling, and add of yellow wax two pounds. After about three hours more boiling, the whole may be ſet aſide for uſe.

N° II. ℞. Olive oil, three pounds;
Yellow wax, one pound;
Minium, one pound and a half.

Theſe articles are to be boiled ſlowly for ſix hours, or even longer in the winter. If the maſs be not of a ſufficiently firm conſiſtence, add three or four ounces more of the wax.

N° IV. ℞. Litharge plaſter three parts, and
White wax two parts; to which add as much olive oil or hog's lard as will give the conſiſtence required. Boil them as before.

N° V. ℞. Yellow wax, one pound;
Spermaceti, half an ounce;
Acetated ceruſſe, from two to eight drams, according to the degree of ſolidity deſired. Small bougies are to be made of a thicker maſs than larger, eſpecially for a hot climate.

N° VI. ℞. Yellow wax, four parts;
Oil of olives, three parts;
Spermaceti, one part.

Boil them gently together for two hours, or until they are properly incorporated.

As preſcriptions of this ſort may be varied at pleaſure, it is unneceſſary to increaſe the number of our formulæ: the above compoſitions are to be uſed in a melted ſtate, but not very hot. Slips of ſoft linen or calico, of a fine texture, and not leſs than eleven inches in length, are to be dipped into the warm maſs, or ſpread over with ſome of it by means of a broad ſpatula; and care ſhould be taken to make the ſurface of this cerecloth as ſmooth and uniform as poſſible. Some perſons adviſe that the ſlips of fine rag ſhall be of different lengths, from eight to eleven inches, and about three in breadth; theſe ſlips are then to be rolled up looſely, and taking hold of one extremity with the left hand, let it fall upon the ſurface of the plaſter, and then draw it out gently. As it is drawn out it will unroll, and take up a quantity of plaſter on the ſurface, equal to the thickneſs of a wafer or a ſixpence; though, to facilitate the unrolling of the rag, it will be proper to aſſiſt its motion with the end of the ſpatula,

tula, or ſome other inſtrument. The plaſter, however, muſt be warm enough to ſoak through, and diſcolour the rag, otherwiſe it will not make ſo good a bougie.

If the cloth be exactly three inches broad, it will make ſix bougies of a moderate ſize ; but their ſize may be ſuited to the occaſion. It is generally adviſeable that the bougie ſhould be ſmaller at the end which is introduced through the ſtrictures, than at that which is left out at the penis. For this purpoſe many cut off a part of the oblong ſquare before mentioned, in ſuch a manner as to reduce it almoſt into the ſhape of a long right-angled triangle ; but as this way of cutting it weakens the bougie exceedingly, and as it is not at all neceſſary that the bougie ſhould be taper from one extremity to the other, it is much better to cut off a little ſlope of about an inch and a half long from the end that is to be paſſed into the urethra, which will leſſen it where it is neceſſary to be ſmall, and leave it ſtrong in the other part, where the diminution is not neceſſary.

The plaſter taken up by the cloth, when dipped, will have little bubbles upon its ſurface, and not be ſo ſmooth as if it had been ſpread : therefore an iron ſpatula, a little warmed, may be paſſed over the plaſter before it be cut into bougies, which will render it more compact and even. It is a much more exact and ſpeedy method to cut the bougies off with a knife and ruler than with ſciſſars. When they are rolled up, it muſt be with that ſide outward which is covered with plaſter ; and they muſt firſt be rolled by hand as cloſe as poſſible, before they are rolled upon a board or marble; for upon this circumſtance the neatneſs of the bougie depends.

It ſeldom happens that a bougie is required to be more than a quarter of an inch in diameter, or three quarters in circumference ; but the generality of practitioners are apt to err in uſing them of too ſmall a ſize to produce any permanent advantage in overcoming the ſtricture. There is undoubtedly a great difference in the calibre of the urethra of different perſons, and we have known the plaſter compoſition to have been forced off the linen by a patient having uſed the bougie too large, ſo as to collect the plaſter in a maſs within the urinary canal ; but we ſtill lay down as a general rule to employ the inſtrument as large as can be conveniently introduced, and again withdrawn from the urethra, although by no means ſo large as to hazard the accident here alluded to.

Some ſurgeons have very highly extolled the utility of bougies made of catgut, becauſe of the property they poſſeſs of becoming dilated by the moiſture of the urethra, and thus enlarging the contracted part of the canal. We have, however, been much diſappointed in our expectations from catgut bougies ; as they did not dilate with ſufficient force upon the exact ſpot in which the diſeaſe exiſted, and therefore ſwelled generally without advantage ; nay, it even happens that the catgut, if it be large, will not come away without difficulty and pain, ſince it dilates equally beyond the ſtricture itſelf, as well as on the contracted part ; and if it be not ſufficiently large, its ſoftneſs renders it of no utility whatever. As there is no poſſible mode in which the cat gut can do any good, but by mechanically extending the ſtricture, and as this can only happen for a few moments while the inſtrument remains firm, it muſt be obvious to every reflecting perſon that this kind of bougie is likely to be even leſs uſeful than thoſe made of plaſter or cerecloth ; and this is preciſely what we have obſerved as the reſult of our own experience.

Practitioners, being in ſome reſpects diſſatisfied with the bougies commonly uſed, have introduced pieces of ſmooth whalebone, or long ſlips of leather, for the ſame purpoſe ; but we think, upon the whole, they are liable, at leaſt, to as ſtrong objections as any we have already mentioned ; and the trials made with them, by ſeveral ſurgeons, have not at all produced a conviction of their ſuperiority. At preſent, indeed, they ſeem to be entirely laid aſide.

Another ſpecies of bougie, which deſerves much more attention, is compoſed of catgut internally, and covered by a thin layer of diſſolved elaſtic gum, or caoutchouc. The manufacture of this elaſtic vegetable ſubſtance is confined to a very few hands. We believe it was firſt applied in a ſtate of ſolution to the purpoſes of ſurgery, either by Mr. Theden, a Pruſſian ſurgeon, or by M. Bernard, of Paris ; but bougies of this kind are alſo made in other countries, eſpecially in Sweden and Germany, and lately by Mr. Walſh, of London. The mode of diſſolving and drying the caoutchouc is kept as a ſecret. It is ſaid, however, to be ſoluble in æther and in linſeed oil : it may likewiſe be rendered fluid by cutting the ſubſtance into ſlips, and burning them ; but the great difficulty is in reſtoring it to a ſtate of ſolidity and dryneſs, ſo as to render the bougies uſeful after they are fabricated and covered with caoutchouc. Theſe bougies, when properly made, are not only very flexible and ſmooth, but may remain a conſiderable time in the urethra without being greatly injured. When they crack or become rough on their ſurface by repeated uſe, they are unfit for our purpoſe, and ſhould be exchanged for new ones. See the articles CATHETER and CAOUTCHOUC.

It has formerly been the practice of ſome ſurgeons, in uſing any of the ſeveral kinds of bougies already deſcribed, to daub their ſurface over with different ſtimulating unguents, &c. And it has been imagined that the puriform diſcharge thus produced from the urethra, had a tendency to diſſolve the calloſity of the ſtricture or caruncle, which they ſuppoſed to be the occaſion of the obſtructed urine. Now this is an entire fallacy, founded on a falſe theory ; for neither is there any proof of the exiſtence of ſuch caruncles and calloſities in the urethra, nor (if they really did exiſt) could the ſuppuration produced by ſuch means afford material advantage. Any ſtimulating ſubſtance introduced into the urethra, for example a common plaſter bougie, may produce a diſcharge of matter, eſpecially in very irritable patients ; but this diſcharge ariſes from the whole internal ſurface of the canal to which the bougie has been applied, and not excluſively, or perhaps, not at all, from the obſtructed part where the ſtricture exiſts: and this ſuppuration is no more than the common reſult of the application of a mechanical ſtimulus, or foreign body, to a delicate ſecreting membrane. If that portion of the bougie which came into contact with the diſeaſed part be more covered with mucus or pus than any other, this circumſtance is probably owing to a greater irritation or increaſe of action in the ſecreting arteries of that part, in conſequence of its preternatural irritability ; but, by introducing a bougie compoſed of active ingredients, or ſmearing its ſurface over with acrid materials, we excite an unhealthy action not only in the morbid part of the urinary paſſage, but alſo along the whole extent of the ſound ſurface. The reaſoning here employed againſt ſo abſurd a practice, will apply likewiſe againſt the uſe of what have been called "Medicated bougies," which have been ignorantly ſuppoſed to poſſeſs ſome healing or medicinal quality.

The only remaining bougies we intend to notice in the preſent article, are thoſe which Mr. Smyth, an apothecary of London, has recently fabricated, of a flexible metallic compoſition. Although he has not publiſhed his invention, (if indeed it be a *new compound* of the metals,) we think the inſtruments of Mr. Smyth deſerving our conſideration. Experience, in a great number of caſes, warrants the uſe of them, and particularly thoſe of a large ſize; on account of the extreme ſmoothneſs of their ſurface, the yielding or flexible property they have, without breaking, and the length of time which patients may wear the bougies (where it is neceſſary to retain them in the bladder) with eaſe to themſelves, and without eroding the metal.

We cannot, however, diveſt ourſelves of an objection, which has too much foundation in truth, againſt the ſmall-ſized metallic bougies, viz. that there is great danger of tearing or penetrating the urethra in paſſing them; ſo that they can hardly be truſted with ſafety in the hands of inexperienced perſons, or even of young ſurgeons who may not be adepts in this line of practice. Mr. Smyth has certainly obtained very reſpectable teſtimonies in favour of his inſtruments; but, we think, on peruſing his late publication, that the comparative advantages and diſadvantages of theſe bougies are not always detailed with ſufficient preciſion. Some of the objections, which were formerly made by one of the ſurgeons of the Lock Hoſpital, in the fourth volume of the London Medical Review, do not apply to the larger ſized metallic bougies; and we are aſſured that, ſince the period alluded to, the inventor has improved the form of his inſtruments ſo much as to have obviated the little difficulties then ſuggeſted by Mr. Blair. It was our duty to ſay this, in juſtice to the inventor; and we doubt not, that by further trials and obſervation, it will be found that Mr. Smyth's bougies and catheters are entitled to the patronage of ſurgeons in general. We do not mean to affirm, that they will exclude the uſe of all other kinds of bougies and catheters; but only that they are highly ſerviceable, (and even to be preferred to any others) in ſome particular circumſtances of diſeaſed urethra, or retention of urine, &c.

We reſerve the obſervations we have to make on *cauſtic bougies* for a future article on the ſubject of Stricture, where the hiſtory and treatment of this morbid affection will properly come under conſideration. In the interim, we refer our readers to the ſeveral publications of Mr. Home and Mr. Whateley: and to a paper, in the 18th number of the London Medical Review, p. 209, vol. iv. entitled "Reflections on the uſe of cauſtic ſubſtances and metallic bougies in ſtrictures of the urethra, by Mr. Blair, ſurgeon of the Lock Hoſpital, &c."

Bougie, *inlet*, in *Geography*, lies on the coaſt of North Carolina, between Core Sound and Little Inlet.

BOUGINESE, or Bonians, a denomination diſtinguiſhing one of the various nations who inhabit the iſland of Celebes. Theſe and the Macaſſers are the moſt known. The Bougineſe are at preſent the moſt powerful people in this iſland, though, about a century ago, they were not comparable with the Macaſſers. They are of a middle ſtature, ſtrong, and muſcular, and of a light brown complexion. Some of them, eſpecially the women, are nearly as fair as Europeans; and they have pleaſing countenances, except that their noſes are ſomewhat flattiſh. The females are ardently addicted to ſenſual pleaſures, and ingenious in every refinement of amorous gratification; and on this account, the Bougineſe girls are preferred, throughout the eaſt, for concubines, both by Europeans and by Indians. The Bougineſe are generally called by the Engliſh Buggeſſes. See Boni.

BOUGLON, a town of France, in the department of the Lot and Garonne, and chief place of a canton, in the diſtrict of Marmande; 4 miles N. of Caſtel Jaloux. The place contains 681, and the canton 5,547 inhabitants. The territorial extent comprehends 162½ kiliometres, and 12 communes.

BOUGUER, Peter, in *Biography*, a celebrated mathematician, was born at Croiſic in Lower Brittany, Feb. 10, 1698. He was the ſon of John Bouguer, royal profeſſor of hydrography, and author of a complete treatiſe on Navigation, firſt printed in 1698, 4to. and re-printed in 1706. In this comprehenſive and excellent work, the author correctly delineated the ſtate of navigation at that period. Bouguer, the ſon, was initiated by his father in the mathematics, at a very early age; and ſuch was his proficiency, that at the age of 11 years, he inſtructed his regent in the Jeſuits' college at Vannes; and at the age of 13, he detected the error of a profeſſor of mathematics, who, mortified at being thus expoſed, quitted the country. Although he loſt his father at the age of 15, and before he had finiſhed his ſtudies, he was thought competent to be his ſucceſſor in the office of hydrographer; and he diſcharged the duties of it with great reputation, even at this early age. In 1727 he obtained the prize, propoſed by the royal academy of ſciences, for the beſt method of maſting ſhips; in 1729, that, for the beſt method of obſerving the height of the ſtars at ſea; and in 1731, that, for the moſt advantageous means of obſerving the variation of the compaſs. In his piece concerning the beſt method of obſerving the height of the ſtars at ſea, he aſſumes the honour of having been the firſt perſon who undertook to give a legitimate ſolution of the "Solar;" for ſo he calls the curve, traced by a ray of the ſun, in its deſcent through the atmoſphere. But though he did not ſeem to have known it, Mr. Taylor, in his "Methodus incrementorum directa et inverſa," had obtained, by an elegant analyſis, a fluxional equation, which gave all the points of the curve. However, Bouguer's method was the firſt that was applied to uſe for aſtronomical purpoſes. Bouguer, in his "Optical eſſay on the gradation of light," publiſhed in 1729, examined the intenſity of light, and determined its various degrees of diminution, in paſſing through different pellucid ſubſtances, and particularly that of the ſun in traverſing through the atmoſphere. An extract of this firſt eſſay was given by M. Mairan in the Journal des ſavans, for 1730. Dr. Prieſtley, in his "Hiſtory of light and colours," p. 541, &c. has given a particular account of Bouguer's obſervations on this ſubject. At Havre, whither he removed in 1730, he became intimately connected with ſeveral members of the academy of ſciences; in the following year, he was choſen to ſucceed Maupertuis as aſſociate-geometer; and in 1735 he was promoted to the office of penſioner-aſtronomer. On the 16th of May in this year, Bouguer left France, on a commiſſion, in which he was joined with Godin and La Condamine, for meaſuring a degree of the meridian in South America; and he returned to his own country from this expedition in June 1744. Of his various operations, he gave an account to the French academy in November following; and this account was printed in the "Memoirs" for 1744, and afterwards in his treatiſe "De la figure de la terre." The principal ſcene of this laborious undertaking, was the Cordilleras mountains; and in the execution of it, Bouguer and his aſſociates made many other important and uſeful obſervations, beſides thoſe that related to the immediate object of their commiſſion. To Bouguer in particular, we are indebted for many curious remarks on the expanſion and contraction of metals, and other ſubſtances, by the ſudden change of heat and cold, among thoſe lofty mountains; on the refraction of the atmoſphere from their ſummits, and on the ſingular phenomenon of a ſudden increaſe of refraction, when the ſtar can be obſerved below the line of the level; on the laws of the different denſities of the air at different heights; on the effect of the attraction of the mountains upon a plummet; on the method of eſtimating the errors of navigators in computing their courſe and diſtance; on the new conſtruction of a log for meaſureing the ſhip's way; and on a variety of other particulars; which, with thoſe already recited, will be duly noticed in the courſe of this work. Of his heliometer for determining the diameters of the large planets in a teleſcope with two object glaſſes, his experiments on the reciprocation of the pendulum, and his method of meaſuring the force of light, &c. &c., we ſhall introduce an account in their proper places.

The principal works of M. Bouguer, that have been ſeparately publiſhed, are "The figure of the earth, determined by the obſervations in South America," 1749, 4to.; "Treatiſe on navigation and pilotage," Paris, 1752, 4to., abridged by La Caille in one volume, 8vo. 17 8. "Treatiſe on ſhips, their conſtruction and motions," 1756. 4to.; and "Optical treatiſe on the gradation of light," firſt publiſhed in 1729, and afterwards in 1760, 4to. The following detail of his chief communications to the royal academy, and of the volumes of the "Memoires," in which they may be found, will probably gratify the curioſity, and direct the reſearches of our mathematical and philoſophical readers. Accordingly, we have in the "Memoires" for 1726, a compariſon of the force of the ſolar and lunar light, with that of candles; for 1731, obſervations on the curvilinear motion of bodies in mediums; for 1732, upon the new curves called the "lines of purſuit;" for 1733, to determine the ſpecies of conoid, to be conſtructed upon a given baſe, which is expoſed to the ſhock of a fluid, ſo that the impulſe may be the leaſt poſſible; and a determination of the orbit of comets; for 1734, compariſon of the two laws which the earth and other planets muſt obſerve in the figure, which gravity cauſes them to take; on the curve lines proper to form the arches in domes; for 1735, obſervations on the equinox; on the length of the pendulum; for 1736, on the length of the pendulum in the torrid zone; on the manner of determining the figure of the earth, by the meaſures of the degrees of latitude and longitude; for 1739, on the aſtronomical refractions in the torrid zone; obſervations on the lunar eclipſe of September 8th 1737, made at Quito; for 1744, ſhort account of the voyage to Peru by the members of the royal academy of ſciences, to meaſure the degrees of the meridian near the equator, and from thence, to determine the figure of the earth, a communication, no leſs elegantly, than accurately written; for 1745, experiments made at Quito, and divers other places in the torrid zone, on the expanſion and contraction of metals by heat and cold; on the problem of the maſting of ſhips; for 1746, treatiſe on ſhips, their ſtructure and motions, (ſee METACENTRE and SHIP); on the impulſe of fluids upon the fore parts of pyramidoids, having their baſe a trapezium; continuation of the ſhort account, given in 1744, of the voyage to Peru for meaſuring the earth; for 1747, on a new conſtruction of the log and other inſtruments for meaſuring the run of a ſhip; for 1748, of the diameters of the larger planets; the new inſtrument called a heliometer, proper for determining them, with obſervations of the ſun; obſervation of the eclipſe of the moon, Aug. 8th, 1748; for 1749, ſecond memoir on aſtronomical refractions, obſerved in the torrid zone, with remarks on the manner of conſtructing the tables of them; figure of the earth, determined by Meſſrs. Bouguer and Condamine, with an abridgment of the expedition to Peru; for 1750, obſervations of the lunar eclipſe, Dec. 13th, 1750; for 1751, on the form of bodies, moſt proper to turn about themſelves, when they are puſhed by one of their extremities, or any other point; on the moon's parallax, with the eſtimation of the changes, cauſed in the parallaxes by the figure of the earth; obſervation of the lunar eclipſe, Dec. 2d, 1751; for 1752, on the operations made by ſeamen, called "Corrections;" for 1753, obſervations on the paſſage of Mercury over the ſun, May 6th, 1753; on the dilatations of the air in the atmoſphere; new treatiſe of navigation, containing the theory and practice of pilotage, or working of ſhips; for 1754, operations, &c. for diſtinguiſhing, among the different determinations of the degree of the meridian near Paris, that which ought to be preferred; on the direction which the ſtring of a plummet takes; ſolution of the chief problems in the working of ſhips; for 1755, on the apparent magnitude of objects; ſecond memoir on the chief problems in the working of ſhips; for 1757, account of the treatiſe on the working of ſhips; on the means of meaſuring the light. In the volumes of the prizes, given by the academy, are the following pieces by Bouguer; in vol. i. on the maſting of ſhips; in vol. ii. on the method of exactly obſerving at ſea, the height of the ſtars, and the variation of the compaſs; alſo on the cauſe of the inclination of the planets' orbits. M. Bouguer was alſo for 3 years a writer in the Journal des Sçavans, to which he communicated ſeveral uſeful papers.

In his earlier years, Mr. Bouguer had lived in a ſtate of ſecluſion from general intercourſe with the world, and he had thus acquired a caſt of temper, which marked his character in more advanced life. Although he was univerſally acknowledged to poſſeſs ſuperior talents, and to be diſtinguiſhed by an aſſiduity and zeal, no leſs ſucceſsful than indefatigable, in various departments of uſeful ſcience; he indulged a degree of ſuſpicion and jealouſy, with regard to his reputation, which diſguſted ſome of thoſe with whom he was under a neceſſity of aſſociating, and which diſquieted his own mind. Fully ſenſible of the importance and utility of his own performances, he was apt to conſider others, who were engaged in ſimilar purſuits, as competitors with himſelf, and to grudge them the reputation which they juſtly acquired, from an apprehenſion that his own credit would be thus diminiſhed. Hence aroſe his diſputes with La Condamine, one of the companions of his voyage, and aſſociate in his labours in America; and the mortification he experienced from the public ſuffrage that ſeemed to have been beſtowed on that academician. It is much to be lamented, that mean jealouſies of this kind ſhould ſubſiſt among perſons diſtinguiſhed by their literature and ſcience; becauſe they are not only diſreputable to themſelves, but injurious to the advancement of uſeful knowledge. M. Bouguer, after a courſe of inceſſant application, which undermined his health, cloſed his life on the 15th of Auguſt, 1758, at the age of 60 years. Mem. of the French Academy, 1758. Nouv. Dict. Hiſt. Montucla, "Hiſt. des Mathematiques," by De La Lande, tom. iv. Gen. Biog.

BOUHIER, JOHN, a perſon of eminent literary character, was born at Dijon in 1673, and firſt educated at a Jeſuit ſeminary, where his extraordinary talents for languages were carefully cultivated. The peculiar ſtudies of his profeſſion were proſecuted at Paris and Orleans, whence he returned to Dijon, and began the exerciſe of it in 1673. Here he diſtinguiſhed himſelf by his profeſſional practice, and was admitted into the parliament, ſucceeding his father in the office of preſident *à mortier.* As he devoted his leiſure hours to literary inquiries, he was well known to the learned, and in 1727, was unanimouſly elected a member of the French academy. But afflicted with the gout, he was under the neceſſity of reſigning his office of preſident *à mortier*; and, in 1746, this diſorder, ſeizing his ſtomach, terminated his life. He was much reſpected on account both of his private and public character; and his literary performances, publiſhed ſeparately and in the memoirs of different ſocieties, are very numerous Some of the principal are, "A tranſlation, in verſe, of Petronius on the civil war, and of ſome paſſages in Virgil and Ovid," with very learned notes; "A tranſlation of Cicero's Tuſculan Queſtions," in connection with the abbé d'Olivet; the 2d and 5th are by Bouhier; and he alſo annexed learned notes and diſſertations to the tranſlations of others of Cicero's works; "Letters on the ſect of Therapeutæ;" and "Diſſertations on Herodotus." In his own profeſſion his principal work is "The cuſtom of Burgundy," 2 vols. fol. 1746; and a "Treatiſe on diſſolution of marriage on occaſion of impotence," eſteemed by the curious. Nouv. Dict. Hiſt. Gen. Biog.

BOUHOURS, Dominic, a learned Jeſuit and critic in the French language, was born at Paris in 1628; and having taught for ſome time in the colleges of the Jeſuits, became preceptor to the young prince of Longueville, and to the marquis de Seignelai, ſon of the famous Colbert. He died in the place of his nativity, in 1702. His firſt work, which was an agreeable miſcellany on ſubjects of taſte, entitled "Les entretiens d' Ariſte et d'Eugene," appeared in 1671, and was at firſt much read. His other principal works are, "Remarques et doutes ſur la langue François," 3 vols. 12mo; "Manieres de bien penſer ſur les ouvrages d'Eſprit," 12mo. much commended by Voltaire; "Penſées ingenieuſes des anciens et des modernes;" 12mo.; alſo, "Lives of the grand-maſter d'Aubuſſon, of St. Ignatius, of St. Francis Xavier, of mad. de Bellefond," and tranſlations of ſome books of devotion. in ſome of which he manifeſts his attachment to the Jeſuits, though with leſs credulity than that of others. His manners were polite; but his criticiſms, though he was a general apologiſt, involved him in ſome literary diſputes. Nouv. Dict. Hiſt.

BOVI-Cervus of French authors, in *Zoology*, their *Bubale* and *antilope bubalis* of Linnæus.

BOVIANUM, in *Ancient Geography*, Boiano, a town of Italy in Samnium, ſituate among the mountains. It was taken ſeveral times by the Romans; became a Roman colony, and poſſeſſed the advantages granted by the Julian law. See Boiano.

BOUJEIAH, in *Geography*. See Bugia.

BOUILLAC, a town of France, in the department of the Upper Garonne; 3 leagues N. W. of Grenade.

BOVILLÆ, in *Ancient Geography*, *Marino*, a town of Italy in Latium, ſituate at the 10th mile in the Appian way, and built after the deſtruction of Alba, by the Albani. It became a conſiderable place, as is indicated by its ruins, among which is a temple dedicated to Auguſtus. Near this city Claudius was ſlain by order of Milo; and here they celebrated games in honour of the Julian family.

BOUILLE, La, in *Geography*, a town of France, in the department of the Lower Seine; 3 leagues S. S. W. of Rouen.

Bouille, *Menard*, a town of France, in the department of the Mayne and Loire, and chief place of a canton, in the diſtrict of Segré; 2 leagues N. W. of Segré.

BOUILLEROT, or *Boullereau*, in *Ichthyology*, common names of ſeveral fiſhes in France, but more eſpecially of *Gobius niger*; the *Cyprinus gobio* and *Blennius pholis* bear the ſame names.

BOUILLET, John, in *Biography*, born at Servian, in the dioceſe of Beziers, the 14th of May 1690, and created doctor in medicine, at Montpellier, in 1717, enjoyed, during the courſe of a long life, ſpent in the ſtudy and practice of medicine, at Beziers, a conſiderable portion of reputation. He was, in ſucceſſion, made profeſſor in mathematics, and ſecretary to the academy at Beziers; member of the royal ſociety at Montpellier, and correſponding member of the academy of ſciences at Paris. He was alſo author of ſeveral ingenious diſſertations. "On the properties of Rhubarb," publiſhed at Beziers 1717, 4to. probably his "Inaugural Theſis." "Sur la cauſe de la peſanteur," 172[illegible], 12mo. which obtained for him a prize from the academy at Bourdeaux; "Avis et remedes, contre la peſte," Beziers, 1721, 8vo. "On aſthma and on the gout," in which complaints he recommends the Venice ſoap as a powerful auxiliary; "Sur la maniere de traiter la petite verole," Beziers, 1736, 4to. and ſome years after, "On the beſt method of preſerving the diſtrict of Beziers from that diſeaſe;" "Recueil des lettres, et autres pieces pour ſervir a l'hiſtoire da l'academie de Beziers," 1736, 4to. with ſeveral other publications; for the titles, ſee Eloy Dict. Hiſt. He died in 1770.

Bouillet, Henry Nicholas, his ſon, was born December 6th, 1729. Treading in the ſteps of his father, he was made doctor in medicine at Montpellier, and member of the academy of Beziers. He publiſhed, in 1759, in 4to. "Obſervations ſur l'anaſarque, le hydropeſies de poitrine, des pericarde," &c. Haller. Bib. Botan.

BOUILLEUR de Canari, in *Ornithology*, the provincial name by which the Ani bird is known among the creoles and negroes in Guiana.

BOUILLON, among *Farriers*, a lump of excreſcence of fleſh, growing either on or juſt by a horſe's fruſh, and making him halt.

Bouillon, in *Geography*, a town of France, in the department of the Ardennes, and chief place of a canton, in the diſtrict of Sedan; the place contains 1,973, and the canton 4,340 inhabitants. The territory comprehends 167½ kiliometres, and 17 communes.

BOUILLY, a town of France, in the department of the Aube, and chief place of a canton, in the diſtrict of Troyes; 7 miles S. of Troyes. The place contains 790, and the canton 9,310 inhabitants. Within the territory are 212½ kiliometres, and 28 communes.

BOVIN, or Boving *iſland*, an iſland of France on the coaſt of Lower Poitou, ſouth of the river Loire. It is wholly covered with ſalt pans.

BOVINA Affectio. See Affectio.

Bovina, in *Zoology*, a ſpecies of Tænia, found in the viſcera and liver of cattle. This kind is ſimple, with the veſicle large: body ſhort, with imbricated ſcales. Barthol. Hiſt. Anat. Cent. Goeze, &c.

BOVINO, in *Geography*, a city of Naples, in the province of Capitanata, and ſee of a biſhop, ſuffragan of Benevento. It ſtands very high, on the ſouth ſide of the river Cervaro. It is a duchy belonging to the Guevaras, one of the Spaniſh families that followed the fortunes of Alphonſus the magnanimous.

BOVIS, in *Entomology*, a ſpecies of Pediculus, with which cattle are infeſted. Linnæus diſtinguiſhes it by the eight tranſverſe ferruginous lines on the abdomen. Linn. Fn. Suec.

Bovis, a ſpcies of Oestrus, with brown, unſpotted wings; abdomen black, white at the baſe, and at the tip fulvous. Fabr. &c. See Botts, Gad-*fly*, and Oestrus.

BOUISSE, in *Geography*, a town of France, in the department of the Aude, and chief place of a canton, in the diſtrict of la Graſſe; 3 leagues S. W. of la Graſſe.

BOVISTA, in *Botany.* See Lycoperdon.

BOVIUM, in *Ancient Geography*, a place in the ſecond route of Antonine's itinerary, placed by ſome antiquaries at Bangor-Monachorum; by others at Boverton, and by Mr. Horſley ſomewhere near Stretton, at the diſtance of about 10 miles from Cheſter. But its true ſituation is unknown.

BOVIUS, Thomas, in *Biography*, an empiric of a noble family in Italy, lived in the middle and at the end of the 16th century. He called himſelf Zephirielem, the name he gave to a tutelar ſpirit, who, he pretended, watched over and aſſiſted him. He was well ſtored with general learning, but applied particularly to the ſtudy of the law, of medicine, and of chemiſtry. He wrote againſt the regular phyſicians, and boaſts of the ſucceſs of his practice. He contrived an elaborate and concentrated preparation of mercury and gold, firſt diſſolved in a kind of aqua regia, which he called his Hercules. With this he profeſſed to cure malignant and peſtilential fevers, the plague, and the lues venerea. He condemned the method uſed in making the decoction of the woods, by which their volatile parts, in which he contends their virtue reſide, were diſſipated. He cured epilepſies with a preparation of antimony, and ſuppreſſed menſes with hellebore. He expelled a tape worm from one of his patients, meaſuring, he ſays, fifty yards in length. He condemns bleeding, except in certain aſpects of the heavens. He prepared "aurum potabile," with which he pretended to have performed great cures. He laughs at Capivaccius, who had diſmiſſed a patient as incurable, whom he afterwards reſtored to health. He was addicted to alchemy, and acknowledges he was indebted for much of his knowledge to Arnold de Villanova. He pretends to have cured upwards of 7000 patients. But notwithſtanding his boaſting, Claudius Gellus, who undertook to refute him, in a ſmall tract, ſince joined to Bovius's works, ſhews he was no phyſician, and that he was very little conſulted. The titles of his works are, "Flagello contro de medici communi detti rationali," 4to. Venet. 1583; "Fulmine contro de medici putatitii rationali," 4to. Verona, 1592; "Melampygo, overo confuſione de medici ſofiſti e del Claudio Gelli," Verona, 1595, 4to. He diſcovered that a diſeaſe, affecting the inmates of a monaſtery, was occaſioned by their cooking their food in copper veſſels, not well tinned. His works, which ſeparately paſſed through ſeveral editions, were collected and printed at Venice, in 1626, 12mo. Haller. Bib. Med. Practica.

BOUKA, in *Geography*, an iſland of the Pacific ocean, ſo called by Bougainville, from the frequent uſe of this term among the natives, ſeparated by a narrow channel from Bougainville iſland. It is ſometimes called lord Anſon's iſland. The vaſt plantations of cocoa-nut trees which adorn its ſhores indicate a numerous population. The natives are dextrous in the uſe of their canoes: they ſeem to be acquainted with the method of barter; and from the value which they affix to nails and other articles of hard-ware, they indicate a knowledge of the uſe of iron. They are addicted to gaiety, and paſſionately fond of muſic, eſpecially of the moſt briſk and noiſy tunes. The colour of their ſkin is blackiſh; they are of a middling ſtature; and their muſcles, diſtinctly ſeen as they are naked, indicate great ſtrength. Their figure, though not very agreeable, is very expreſſive. Their heads are very large, their foreheads broad, like the other parts of their faces, which are very flat; their chins large and prominent, their cheeks full, their noſes flat, their mouths very wide, and their lips thin; their ears are loaded with large rings made of ſhells, by which they are very much extended. Some have red and white ſtreaks traced upon their bodies; and ſome have bracelets formed of the fibres of the cocoa-nut huſk. Their hair is curled, thick, and bulky; and they pluck the hair from every other part of the body. They handle the bow with much addreſs; and their induſtry ſeems to be particularly directed to the fabrication of their arms. Their canoes are formed of ſeveral planks, ingeniouſly conſtructed, and adapted for a quick motion. The north point of Bouka is in S. lat. 5° 5′ 36″, and 154° 29′ E. long. Labillardiere's Voyage in ſearch of La Pérouſe, vol. i. p. 375, &c.

BOULAC, Boulak, or Bulak, a large, irregular, and pleaſant town, about 2 miles long, but not very wide, built on the eaſt ſide of the harbour of Grand Cairo, and about half a league diſtant from it. The road leading to it appears to be one of its ſtreets; and the crowd and buſtle of the place indicate the entrance of a populous and commercial city. Boulac is the port of Lower Egypt, as well as of Cairo, as Miſr-el-Attike is of Upper Egypt; and here all the merchandize is landed which comes from Damietta and Alexandria. It contains magnificent public baths, and large "Okals," which are ſquare buildings round a great court with a portico, that ſupports a winding gallery. The ground floor is compoſed of ſpacious warehouſes; and the next floor contains apartments without furniture and without ornament. Theſe okals are inhabited by ſtrangers, who there depoſit their merchandize. One ſingle gate, like that of the citadel, ſecures them from inſult at the time of the revolts. Theſe khans are the only inns to be met with in Egypt. The traveller is obliged to furniſh them, and dreſs his victuals there; for in this country a dinner is not to be had for money. The okal built by Ali Bey the great, and called the Alexandrian okal, is equally extenſive and convenient, and chiefly uſed for goods brought from that city. From all the houſes at Boulac thouſands of boats may be ſeen at anchor, of every ſhape and of every ſize. Some of them are ſtrong and ſolid, and have two maſts, and are employed in tranſporting merchandize. Theſe have uſually a large chamber for the paſſengers. Others, lighter and without deck, only ſerve to convey the people from one ſhore to the other. Thoſe which are uſed in voyages of pleaſure are adorned with painting and ſculpture, and have handſome apartments covered with carpeting, and ſheltered from the ſun. In theſe the rich amuſe themſelves by breathing that cool air, which is inceſſantly ſupplied by the Nile. With a favourable wind, and when the ſail is ſpread, theſe light veſſels ſeem to fly upon the water; but when the wind is contrary, a number of robuſt men row them with great rapidity. Cleopatra, who knew the charms of theſe water-parties, and the variety of landſcapes which diverſify the verdant banks of the Nile, engaged Cæſar in one of them, and carried him even into Upper Egypt. Gardens, occupying the fertile grounds between the houſes of Boulac, and between this port and Cairo, afford an ample ſupply of fruits and vegetables. In the middle of the river, nearly over-againſt Boulac, is an iſland, where Murad Bey has a kind of proſpect houſe, or place of retirement, and here are alſo ſeveral gardens. Oppoſite Boulac, upon the weſt bank of the Nile, is the ſmall village of "Embabe," or "Embabil," compoſed of wretched round huts of earth under the ſycamore trees, by which they are propped. Some few houſes of brick hardened in the ſun, and a ſmall moſque, loſe themſelves at a diſtance, among the foliage of date and tamarind trees. This village is famous for the excellent quality of its butter, with which it ſupplies the inhabitants of Cairo; and, indeed, it is the only place in Egypt where butter can be eaten freſh; every where elſe, in that country, it is good for nothing. The fertile plains adjacent to Embabe, on the weſtern ſide, are enriched with ſeveral kinds of culture; and in particular they produce a ſort of lupins, of the ſeeds of which there is a great conſumption in Egypt. Theſe are boiled with ſalt and water, and eaten, after being ſtripped of the thick and hard ſkin with which they are covered. They are ſold ready dreſſed in the ſtreets and markets. By the Chriſtians in the eaſt, lupins, called “Embabens,” from the place of their growth, are eaten as a ſtimulus for drinking brandy. Flour is alſo made of them, which is adapted to clean the hands and ſoften the ſkin. The ſtalk, reduced to aſhes, is preferred to other charcoal in the compoſition of gun-powder.

Half a league to the north-eaſt of Boulac is the old caſtle of “Hellé,” ſo called, probably, from “Heliopolis,” not far diſtant; it is now falling into ruins. Here the Beys, attended with brilliant retinues, receive the new pacha, to conduct him in pomp to the priſon, whence they have juſt expelled his predeceſſor. In the environs of Hellé are ſpacious incloſures, where orange, lemon, and pomegranate trees grow luxuriantly, and form, with ſycamores and palms, bowers and groves of delicious fragrance and refreſhing coolneſs. Savary. Sonnini. Brown.

BOULAI, Cæsar-Egasse Du, in *Biography*, regiſter, hiſtoriographer, and rector of the univerſity of Paris, was a native of St. Ellier, in Maine, and became, for many years, profeſſor of rhetoric in the college of Navarre. His treatiſe of rhetoric, entitled “Speculum eloquentiæ,” was much eſteemed; and he alſo publiſhed, in French, a “Theſaurus of Roman Antiquities,” fol. Paris, 1650; but he acquired his higheſt reputation from a “Hiſtory of the univerſity of Paris,” in 6 vols. fol. containing, indeed, many fabulous relations with regard to the early periods of the univerſity, but much curious information concerning the lives and writings of the literati of France, and of other countries. Boulai wrote Latin verſes with tolerable eaſe and purity. He died in 1678. Gen. Dict.

BOULAINVILLIERS, Henry de, count de St. Saire, &c. was born at St. Saire in 1658, and educated in a ſeminary of the fathers of the oratory. His firſt profeſſion was that of arms, which he quitted on the death of his father, and on account of the deranged ſtate of his domeſtic affairs. From this time he ardently purſued his favourite ſtudies of hiſtory and genealogy, both for his own amuſement, and the inſtruction of his children. Voltaire, qualifying his commendation by aſcribing to him that attachment to ſyſtem, which perverted his narrations, ſays of him, that he was the moſt learned *gentleman* in the kingdom, with reſpect to hiſtory, and the beſt qualified to write that of France. But Monteſquieu, as well as the preſident Henault, have entirely rejected his aſſertions concerning the commencement of the French monarchy; and the former characterizes him as “poſſeſſing more wit than underſtanding, and more underſtanding than knowledge.” Such was his reſpect for nobility, that he entitles the feudal ſyſtem, “the maſter-piece of human art.” Inclined as he was, in ſome reſpects, to free-thinking, he had his ſyſtematic prejudices, and avowed his faith in judicial aſtrology. In all his writings, however, his intentions ſeem to have been thoſe of a good citizen. His works are, “A Hiſtory of France, to the reign of Charles VIII.” 3 vols. 12mo.; “Hiſtorical Memoirs on the ancient government of France, to the time of Hugh Capet;” “Hiſtory of the Peerage of France;” “Diſſertations on the Nobleſſe of France;” “State of France,” 6 vols. 12mo.; “Memoir on the Adminiſtration of the Finances,” 2 vols. 12mo.; “Hiſtory of the Arabians and of Mahomet,” left unfiniſhed, but publiſhed after his death, both at London and Amſterdam; in which work, it ſeems to have been his aim to repreſent Mahomet as a hero, and an accompliſhed ſtateſman; but in doing this, he has deviated much from true hiſtory. This work ſubjected him to the ſuſpicion of indifference with regard to Chriſtianity; but the Catholics have endeavoured to adduce atteſtations to his piety, at the time of his death, which happened in 1722. All his works on French hiſtory have been collected in 3 vols. folio. Nouv. Dict. Hiſt.

BOULAN, in *Geography*. See Bulam.

BOULANCHAIR, a town of Aſiatic Turkey, in the province of Aladulia; 20 miles S. W. of Malatia.

BOULANGER, Nicholas-Anthony, in *Biography*, was born at Paris in 1722, and devoting himſelf to the ſtudy of mathematics and architecture, he accompanied the baron de Thiers to the army, as engineer. On his return, he was employed in the conſtruction of bridges and cauſeways, and executed various public works in Champagne, Burgundy, and Lorraine. From contemplating, in the exerciſe of his profeſſion, the changes which have taken place in the ſurface of the earth, he was led to extend his views and reſearches to the changes of manners, government, and religion; and, in order to acquaint himſelf more accurately and extenſively with theſe ſubjects, he applied to the revival, or improvement of his knowledge of Greek and Latin, and to the ſtudy of the oriental languages, both ancient and modern; and if his life had been prolonged, he would have become one of the moſt learned men in Europe. His ſpeculations, however, inclined him to free-thinking; and of this he gave evidence in various publications. Such were, “A Treatiſe on Oriental Deſpotiſm;” “Antiquity Unveiled,” publiſhed after his death; “Chriſtianity Unveiled,” not aſcertained to have been written by him; “A Diſſertation on Elias and Enoch.” He alſo contributed to the Encyclopædia the articles “Deluge,” “Corvée,” and “Society.” He died in 1759. Nouv. Dict. Hiſt.

Boulanger, John, an engraver, who flouriſhed about the year 1657, was a native of France. His firſt manner of engraving was partly copied from that of Francis de Poilly; but he afterwards adopted a manner of his own, which, though not original, he greatly improved; and, accordingly, he finiſhed the faces, hands, and all the naked parts of his figures very neatly with dots, inſtead of ſtrokes, or ſtrokes and dots. This ſtyle of engraving has been of late carried to a high degree of perfection, particularly in England. Notwithſtanding ſeveral defects in the naked parts of his figures, and in his draperies, his beſt prints are deſervedly much eſteemed. Such are “A Holy Family,” from Fran. Corlebet; “Virgin and Child,” from Simon Vouet; “The Pompous Cavalcade,” upon Louis the XIV. coming of age, from Chauveau; “The Virgin with the infant Chriſt,” holding ſome pinks, and therefore called “The Virgin of the Pinks,” from Raphael; “The Virgin de Paſſau,” from Salario; “Chriſt carrying his Croſs,” from Nicolas Mignard; “A dead Chriſt, ſupported by Joſeph of Arimathea.” He alſo engraved many portraits, and, among others, that of Charles II. of England. He likewiſe engraved from Leonardo de Vinci, Guido, Champagne, Stella, Coypel, and other great maſters, as well as from his own deſigns. Strutt.

BOULAR, in *Ornithology*. Cotgrave has the long-tailed titmouſe, parus caudatus, under this name.

BOULAY, in *Geography*, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Metz; 4¼ leagues N.E. from Metz. The place contains 2,669, and the canton 12,813 inhabitants: its territorial extent comprehends 227½ kiliometres, and 37 communes.

BOULCOLACA, among the *Modern Greeks*, denotes the ſpectre of ſome wicked perſon who died excommunicated by the patriarch, re-animated by the devil, and cauſing great diſturbance among the people; of which many ſtrange ſtories are told. The word is Greek, and is ſometimes written *βρȣκολακος*, *broukolakos;* and ſuppoſed to be derived from *βρȣκος*, or *βρȣκα*, *mud*, and *λακκος*, a *ditch*, on account of the filthineſs of the ſight.

BOULDER *walls*, in *Building*, a kind of walls, built of round flints or pebbles, laid in a ſtrong mortar; uſed where the ſea has a beach caſt up, or where there is plenty of flints.

BOULDUC, Simon, in *Biography*, an eminent apothecary and chemiſt of Paris, and for many years demonſtrator in Chemiſtry, and aſſociate in the Royal Academy of Sciences, furniſhed the memoirs of that ſociety with numerous diſſertations, containing analyſes of the moſt popular and valuable vegetable productions uſed in medicine, which are ſtill valued for their neatneſs and accuracy. The principal are, the analyſis of ipecacuanha and of colocynthis, publiſhed in the memoirs of the academy for the year 1701; of jalap, hellebore, and ſocotrine aloes, in 1708; of catechu, (terra japonica) 1709; ſhewing this ſubſtance to be a vegetable production, and not an earth, as it had been eſteemed; of rhubarb and opium, publiſhed in 1712; of the cucumis agreſtis, in 1719. He made an extract from the wild cucumber, which was a powerful hydragogue, and which might be given in doſes of 24 grains, with perfect ſafety; alſo an elaterium, the doſe of which was ſix grains. He died, far advanced in years, in 1729. His ſon,

Boulduc, Giles Francis, born at Paris, February 20th, 1675, ſucceeded to his honours and appointments, and continued the ſame line of reſearch. His eſſays, containing analyſes of ſeveral purging ſalts, and of ſome mineral waters, were alſo publiſhed in the memoirs of the Royal Academy of Sciences. He died at Verſailles the 17th of January, 1742, much regretted by the king and queen, to whom he had been many years apothecary. Haller Bib. Bot. Eloy Dict. Hiſt.

BOULEAU Lake, in *Geography*, a lake of North America, in the vicinity of Bear Lake, with which it communicates by rivers and ſmall lakes. This lake might, with greater propriety, be called a canal, as it is not more than a mile in breadth. Its courſe is rather to the eaſt of north for 12 miles, to Portage de L'Iſle. The Bouleau Portage is in N. lat. 54° 50'.

BOULENE, a town of France, in the department of the Gard, five miles E. of Pont St. Eſprit.

BOULETERANES, a town of France, in the department of the Eaſtern Pyrenées; 12 miles W. of Perpignan.

BOULEY Bay, called alſo Trinity Bay, lies on the N.E. point of the iſland of Jerſey, and E. from Bonnuthaven.

BOULIMY, in *Medicine*. See Bulimy.

BOULINIS, or Boulignis, in *Commerce*, a copper coin ſtruck at Bologna, in Italy, equivalent to the baiocco.

BOULKI, in *Geography*, a town of Poland, in the palatinate of Lemberg; 16 miles S.E. of Lemberg.

BOULLOIRE, a town of France, in the department of the Sarthe, and chief place of a canton, in the diſtrict of St. Calais; the place contains 1490 and the canton 9,011 inhabitants; its territory includes 160 kiliometres, and nine communes; five leagues E. of Le Mans.

BOULLONGNE, Louis de, the *elder*, in *Biography*, a painter, was born at Paris in 1609; and though he was principally diſtinguiſhed for his ability in copying the works of the moſt famous ancient painters, and in preſerving a very ſtriking reſemblance, he painted hiſtorical ſubjects of his own invention and deſign; of theſe there are three in the church of Notre Dame, in Paris, viz. "St. Paul at Epheſus," "The Martyrdom of St. Paul," and "The Preſentation of Chriſt in the Temple." He was painter to the king, and profeſſor in the academy. He died at Paris in 1674.

Boullongne, Bon de, ſon of the former, was born at Paris in 1649, and acquired the principles of painting from his father, whom he reſembled in his talent of imitating the works of the greateſt maſters, and this he did to ſuch a degree as to deceive the beſt judges. On his return from Italy, where he continued five years, he was admitted into the academy, of which he became a profeſſor, and employed by Louis XIV. at Verſailles and Trianon. He excelled in hiſtory and portrait; his deſigns were accurate, and his colouring good. Induſtrious in his profeſſion, though lively in his temper; he promoted induſtry among his pupils, in whoſe improvement and ſucceſs he warmly intereſted himſelf. Beſides his paintings in freſco, in two of the chapels of the Invalids, he painted ſeveral pieces for the churches and public buildings of Paris, ſeveral of which have been engraved. We have alſo three etchings done by him, from his own compoſitions, viz. a ſpecies of "Almanack;" "St. John in the Deſert;" and "St. Bruno in a Landſcape;" its companion. He died at Paris in 1717.

Boullongne, Louis de, the *younger*, brother of the former, was born at Paris in 1654, and educated under his father, by whoſe inſtruction he made ſuch improvement, that he obtained the prize of the academy at 18. His ſtudies were completed at Rome, where he particularly ſtudied the works of Raphael, and from his copies which were ſent home, the Gobelin tapeſtries were executed. After his return he was received into the academy in 1680; and his works in the churches of Notre Dame and the Invalids, and particularly his freſcos in the chapel of St. Auguſtin, were ſo much eſteemed, that Louis XIV. honoured him with his ſpecial patronage; allowing him a conſiderable penſion; conferring upon him the order of St. Michael; chooſing him deſigner of medals to the Academy of Inſcriptions, after the death of Anthony Coypel; appointing him his principal painter, and ennobling him and all his deſcendants. The Academy of Painting alſo choſe him firſt for its rector, and afterwards director, which place he occupied till his death. He chiefly excelled in hiſtorical and allegorical ſubjects. From his performances it appeared, that he had carefully ſtudied the moſt eminent maſters; his colouring was ſtrong, his compoſition was in a good ſtyle, the airs of his heads had expreſſion and character, and his figures were correctly deſigned. Two of his hiſtorical paintings in the church of Notre Dame are particularly diſtinguiſhed, viz. "Chriſt and the Centurion," and the "Good Samaritan." His etchings, of which there are a few, are ſpirited and free, but incorrectly drawn. Among theſe are the "Scourging of St. Andrew," from Paolo Veroneſe; the "Martyrdom of St. Peter," and the "Martyrdom of St. Paul," its companion, from his own compoſition. His regular attendance at the academy, and his advice to the ſtudents, commanded reſpect: and the general mildneſs and affability of his diſpoſition engaged eſteem among thoſe who knew him. He raiſed a conſiderable fortune by his profeſſion, and died in 1734. Two ſiſters of this family, "Genevieve" and "Magdalen," painted well, and were members of the Royal Academy in 1669. D'Argenville. Pilkington. Strutt.

BOULLONOIS, in *Geography*, a country of France, ſo called before the revolution, in the northern part of Picardy, of which the capital was Boulogne.

BOULOGNE, or Boulogne-sur-Mer, a city and ſea-port of France, lying in a bay of the ſame name, in the Engliſh channel, and chief place of a diſtrict, in the department of the Straits of Calais. The city is computed to contain 10,558, and the canton 16,199 inhabitants; the territory comprehends 70 kiliometres, and 8 communes. Boulogne is divided into the upper and lower town; the upper, and ſmaller, is ſeated on the declivity of the Chalk mountain, and ſurrounded with walls; the lower town lies nearer to the ſea, has no walls, is larger, and contains a greater number of inhabitants than the other. By its connection with the harbour, formed by the river Liane, it monopolizes almoſt the whole of the trade. Before the revolution it was the ſee of a biſhop, ſuffragan of Rheims, the ſeat of a governor, a commandant, a king's lieutenant, &c. The entrance into the harbour is difficult, and defended by a ſmall fort; but ſhips of war can proceed no farther than the road of St. John, and trading ſhips can only enter it with the tide. In the road there is good anchorage, ſheltered from eaſterly winds, in five to fifteen fathoms, and a clean hard ſand; but to the northward of the village it is foul and ſtony ground; and there are alſo ſome ſmall rocks along the coaſt, ſo that ſhips muſt not approach too near the ſouthward of the road. The Engliſh channel, from about Romney in Kent to the bottom of the bay of Boulogne, is about 30 miles wide; and this ſhort diſtance was formerly favourable to the ſmugglers of Engliſh wool. Boulogne is the "Geſoriacum" of the ancients, and it was denominated "Bononia" under Conſtantine. The famous pharos, or light-houſe, at this place, was erected of an octagonal form, about 200 feet in circumference, and 66 feet in diameter, by Caligula, and it was repaired by Charlemagne in 810. In 1545, when the Engliſh took this city, they ſurrounded the ancient ſtructure with towers; and it was thus preſerved till the 29th of July 1644, when the whole of it fell, and nothing now remains but rubbiſh. Mr. Lyon, in his "Obſervations on the ancient *Portus Iccius*," where Julius Cæſar embarked for Great Britain, contends (ſee Archæologia, vol. x.), that this could not have been Calais, nor any place to the eaſtward of it, but that it was to the weſtward, and at Boulogne. From a piece or two, which he procured, of the materials of the ancient ſtructure above-mentioned, he infers that the pharos was conſtructed at Boulogne of a petrifaction called by foſſiliſts tophus; and that it is of the ſame kind with that uſed in the conſtruction of the other light-houſe, built by the Romans on the hill at Dover, which ſtill exiſts, though gradually ſinking into decay. N. lat. 50° 43′ 33″. E. long. 1° 36′ 33″. High-water 10^{h} 30′.

Boulogne, a town of France, in the department of the Upper Garonne, and chief place of a canton, in the diſtrict of St. Gaudens; 4 leagues N. of St. Gaudens. The place contains 1,476, and the canton 10,692 inhabitants; the territory comprehends 247½ kiliometres, and 25 communes.

BOULON, Le, a town of France, in the department of the Eaſtern Pyrenees, taken by the Spaniards in 1793, and re-taken in 1794; 4 leagues ſouth of Perpignan.

BOULTER, Hugh, in *Biography*, a prelate eminently diſtinguiſhed by his charity and public ſpirit, was born in or near London, in 1671, and from Merchant-Taylors' ſchool removed to Chriſt-church college in Oxford, whence he was elected, together with Addiſon, a demy of Magdalen college, of which he afterwards became fellow. By the influence of lord Sunderland, he obtained his firſt eccleſiaſtical promotion to the parſonage of St. Olave in Southwark, and the archdeaconry of Surry. In this ſituation he remained, aſſiduouſly diſcharging his paſtoral duties, for ſeveral years; but in conſequence of having ingratiated himſelf with king George I., when he accompanied him to Hanover, in 1719, as his chaplain, he obtained, by royal favour, in that year, the biſhopric of Briſtol, and deanery of Chriſt church, vacated by the death of Dr. Smallridge. In 1724, he was urged by the king's abſolute commands to accept the archbiſhopric of Armagh, and primacy of Ireland; in which trying ſtation he manifeſted that wiſdom and firmneſs, which were peculiarly ſuited to the diſtracted condition of the country. Intent upon promoting the true intereſts of that country, he purſued every meaſure which prudence or benevolence could ſuggeſt for this purpoſe. In 1728, and again in 1740, he diverted the horrors of famine, and liberally ſupplied the neceſſities of the poor from his own fortune. He alſo exerted himſelf in teaching and converting the poor natives, and, with this view, in promoting the eſtabliſhment of the proteſtant charter ſchools. His popularity, indeed, for ſome time declined, in conſequence of a plan, which ultimately proved beneficial, for remedying the ſcarcity of ſilver, by diminiſhing the value of gold coin; but it was not long before he regained the public favour, inſomuch that he left behind him a character highly reſpected and beloved. Nevertheleſs, he always inclined to the Engliſh intereſt, in oppoſition to the Iriſh, and recommended to the Engliſh government a ſteady adherence to it in all their favours and promotions. As Dr. Swift was attached to the contrary intereſt, he thought unfavourably of him, and repreſented him to the miniſters in England as a dangerous and miſchievous perſon. However, though the opinions of theſe great men were diſcordant, they both probably aimed at the ſame object, or the good of Ireland. The primate was on no occaſion actuated by a party-ſpirit but wiſhed by the aid of any connections to do all the good in his power. His whole life was devoted to buſineſs; and when he was, for the 13th time, one of the lord's juſtices of Ireland, he had occaſion to viſit England, and died here in 1742. He was interred in Weſtminſter abbey, and a ſplendid monument has been erected to his memory. A collection of his letters to miniſters of ſtate, and others, was publiſhed at Oxford in 1769, in 2 vols. 8vo. containing much information with regard to Iriſh politics during his primacy. Biog. Brit.

BOULTINE, or Boltel, in *Architecture*, the workman's term for a convex moulding, whoſe periphery is juſt ¼ of a circle placed next below the plinth, in the Tuſcan and Doric capitals.

BOULTON, Richard, in *Biography*, a practitioner in medicine and ſurgery of the city of Cheſter, publiſhed "A Treatiſe on the Cauſes of muſcular Motion," 1697, 12mo. He attributes the action of the muſcles to a ſort of fermentation, ariſing from the commixture of the blood and the nervous fluid, in certain glands, which he ſuppoſed to exiſt in the fleſhy part of the muſcles; a doctrine nearly ſimilar to that held by Borelli. "A Syſtem of rational and practical ſurgery," 1713, 8vo. This is taken principally from the works of Wiſeman, of which it is little more than an abridgement. "A Phyſico-mechanical Account of the Gout, King's Evil, &c." 1715, 8vo. London; and an "Eſſay on external remedies," publiſhed about the ſame time. Haller Bib. Anat. Med. et Chir.

BOULUKE, in the *Military Orders of the Turks*, a body of the janizaries, with an officer in the place of a colonel at their head, ſent upon ſome particular enterprize; they are ſelected out of the body for this, and, as ſoon as the buſineſs is over, are received again into their former companies.

BOUNCE, in *Ichthyology*, a name given by the people of the weſtern parts of England to a ſpecies of the ſhark tribe ; the *ſqualus canicula* of Linnæus ; *catullus major vulgaris* of Ray and Willughby ; *greater dog-fiſh* of Engliſh writers. See Canicula.

BOUND, in *Dancing*, a ſpring from one foot to the other, by which it differs from a hop, where the ſpring is from one foot to the ſame. It alſo differs from a half *coupée*, as, in the latter, the body always bears on the floor, either on one foot or the other; whereas, in the bound it is thrown quite from the floor.

Bound-*maſonry*. See Masonry.

Bound, *hide*. See Hide-*bound*.

Bound, *hoof*. See Hoof-*bound*.

Bound-*bailiffs*. See Bailiff.

Bounds *of an Eclipſe*. See Eclipse.

Bounds *of lands*. See Abuttals.

BOUNDARY Column. See Column.

BOUNTY, in *Commerce*, denotes a premium paid by the government to the exporters of certain commodities, on their taking oath, or, in ſome caſes, giving bond, not to re-land the ſame in England.

Bounties, as they reſpect the fiſheries, are either *perpetual* or *temporary*. The former are payable on the export of pilchards, or ſhads, cod-fiſh, ling, or hake, whether wet or dried, ſalmon, white herrings, red herrings, and dried red ſprats, being of Britiſh fiſhery and curing. Stats. 5 Geo. I. c. 18. § 6. 26 Geo. III. c. 81. § 16. The latter are payable on the tonnage of ſhips carrying on the Britiſh and Greenland fiſheries ; on the quantity of fiſh taken in the Britiſh and Newfoundland fiſheries ; on the quantity of oil, head-matter, blubber, and whale-fins, taken in the ſouthern whale-fiſhery, and on the export of pilchards. See Fishery, and Navigation *Act*. The bounty on cordage manufactured in Great Britain, not leſs than three tons, is 2s. 4¾d. per cwt. 6 Geo. III. c. 45. 26 Geo. III. c. 85. 31 Geo. III. c. 63.

Bounties have been granted by ſeveral ſtatutes on the exportation of corn, when it does not exceed ſtipulated prices at the port of exportation.

Bounties upon exportation, conſidered in a more general view of them, are, in Great Britain, frequently petitioned for, and ſometimes granted to the produce of particular branches of induſtry. By means of theſe our merchants and manufacturers are ſuppoſed to be able to ſell their goods as cheap or cheaper than their rivals in the foreign market; and a greater quantity, it is ſaid, will thus be exported, and the balance of trade conſequently turned more in favour of our own country. They ſerve, as thoſe who favour them maintain, the purpoſe of a kind of premium, inducing foreigners to buy our goods, and in this manner to enrich the whole country, and put money into all our pockets by means of the balance of trade. Bounties, it is allowed, ſays Dr. Smith (Inquiry into the Nature and Cauſes of the Wealth of Nations, vol. ii. p. 261, &c. ed. 6.), ought to be given to thoſe branches of trade only, which cannot be carried on without them. But every branch of trade, in which the merchant can ſell his goods for a price which replaces to him, with the ordinary profits of ſtock, the whole capital employed in preparing and ſending them to market, can be carried on without a bounty. Thoſe trades only require bounties, in which the merchant is obliged to ſell his goods for leſs than it really coſts him to ſend them to market; and the bounty is given in order to compenſate this loſs, and to encourage him to continue, or perhaps to commence, a trade, of which the expence is ſuppoſed to be greater than the returns, ſo that every operation conſumes a part of the capital employed in it.

An ingenious author, in his "Tracts upon the Corn-Trade," has clearly ſhewn, that ſince the bounty upon the exportation of corn was firſt eſtabliſhed, the price of the corn exported, valued moderately enough, has exceeded that of the corn imported, valued very high, by a much greater ſum than the amount of the whole bounties which have been paid during that period. Hence, he infers, that, upon the true principles of the mercantile ſyſtem, this forced corn-trade is beneficial to the nation ; the value of the exportation exceeding that of the importation by a much greater ſum than the whole extraordinary expence which has been incurred by the public in its exportation. But Dr. Smith argues, that this extraordinary expence, or the bounty, is the ſmalleſt part of the expence which the exportation of corn really coſts the ſociety. The capital employed by the farmer ſhould alſo be taken into the account ; and unleſs the price of the corn, when ſold in the foreign markets, replaces, not only the bounty, but this capital, together with the ordinary profits of ſtock, the ſociety is a loſer by the difference, or the national ſtock is ſo much diminiſhed. But the very reaſon for which it has been thought neceſſary to grant a bounty, is the ſuppoſed inſufficiency of the price to do this. It has been ſaid, that the average price of corn has fallen conſiderably ſince the eſtabliſhment of the bounty. But, allowing this to be the caſe, it muſt have happened, ſays Dr. Smith, in ſpite of the bounty, and cannot poſſibly have happened in conſequence of it ; and he traces this gradual fall in the average price of corn to that gradual and inſenſible riſe in the real value of ſilver, which he ſuppoſes to have taken place in the general market of Europe, during the courſe of the laſt century. In his opinion it ſeems to be altogether impoſſible, that the bounty could ever contribute to lower the price of grain. In years of plenty, the bounty, by occaſioning an extraordinary exportation, neceſſarily keeps up the price of corn in the home market above what it would naturally fall to ; and this was the avowed purpoſe of the inſtitution. In years of ſcarcity, though the bounty is frequently ſuſpended, yet the great exportation which it occaſions in years of plenty muſt frequently hinder, more or leſs, the plenty of one year from relieving the ſcarcity of another. In both, therefore, the bounty neceſſarily tends to raiſe the money price of corn ſomewhat higher than it otherwiſe would be in the home market. It has been thought, however, by many perſons, that the bounty tends to encourage tillage; partly, by opening a more extenſive foreign market to the corn of the farmer who produces it, and partly, by ſecuring to him a better price than he could otherwiſe expect in the actual ſtate of tillage. This double encouragement, it is conceived, muſt, in a long period of years, occaſion ſuch an increaſe in the production of corn, as may lower its price in the home market, much more than the bounty can raiſe it, in the actual ſtate of the tillage, whatever it may be, at the end of that period. To this reaſoning Dr. Smith replies, that whatever extenſion of the foreign market can be occaſioned by the bounty, muſt, in every particular year, be altogether at the expence of the home market; as every buſhel of corn, which is exported by means of the bounty, and which would not have been exported without it, would have remained in the home market to increaſe the conſumption, and to lower the price of that commodity. The corn bounty, as well as every other bounty upon exportation, impoſes upon the people two different taxes ; viz. the tax, which they are obliged to contribute towards paying the bounty, and that which ariſes from the advanced price of the commodity in the home market, and which, as the whole body of the people are purchaſers of corn, muſt, with regard to this particular commodity, be paid by the whole body of the people.

This ſecond tax is by much the heavieſt of the two; amounting, for every five ſhillings per quarter of wheat contributed towards the payment of the firſt tax, to 6l. 4s. towards the payment of the ſecond. This heavy tax, reſting upon the firſt neceſſary of life, muſt either reduce the ſubſiſtence of the labouring poor, or it muſt occaſion ſome augmentation in their pecuniary wages, proportionable to that in the pecuniary price of their ſubſiſtence. In the one way, it muſt tend to reſtrain the population of the country, as it reduces the ability of the labouring poor to bring up their children; and in the other, it muſt tend to reſtrain the induſtry of the country, as it reduces the ability of the employers of the poor to employ ſo great a number as they otherwiſe might do, in proportion to the degree of its operation in both reſpects. "The extraordinary exportation of corn, therefore, occaſioned by the bounty, not only in every particular year, diminiſhes the home, juſt as much as it extends the foreign market and conſumption, but by reſtraining the population and induſtry of the country, its final tendency is to ſtunt and reſtrain the gradual extenſion of the home market; and thereby, in the long run, rather to diminiſh, than to augment, the whole market and conſumption of corn."

It has been thought, however, that the enhancement of the money price of corn muſt neceſſarily encourage its production, by rendering that commodity more profitable to the farmer. To this plea Dr. Smith replies, "that this might be the caſe if the effect of the bounty was to raiſe the real price of corn, or to enable the farmer, with an equal quantity of it, to maintain a greater number of labourers in the ſame manner, whether liberal, moderate, or ſcanty, than other labourers are commonly maintained in his neighbourhood. But neither the bounty, nor any other human inſtitution, can have any ſuch effect. It is not the real, but the nominal price of corn, which can in any conſiderable degree be affected by the bounty. And though the tax, which that inſtitution impoſes upon the whole body of the people, may be very burdenſome to thoſe who pay it, it is of very little advantage to thoſe who receive it. The real effect of the bounty is not ſo much to raiſe the real value of corn, as to degrade the real value of ſilver, or to make an equal quantity of it exchange for a ſmaller quantity, not only of corn, but of all other home-made commodities; for the money price of corn regulates that of all other home-made commodities." The money price of corn regulates the money price of labour, and of all the other parts of the rude produce of land, which, in every period of improvement, muſt bear a certain proportion to that of corn, though the proportion in different periods may be different. In this latter way, it alſo regulates the money price of the materials of almoſt all manufactures, and that of manufacturing art and induſtry. Though in conſequence of the bounty, the farmer ſhould be enabled to ſell his corn at an advanced price, and to pay his landlord a proportionable advanced rent; yet if, in conſequence of this riſe of the price of corn, the money thus obtained will purchaſe no more home-made goods of any other kind, than the lower price would have done before, neither the circumſtances of the farmer, nor thoſe of the landlord, will be much mended by this change. The farmer will not be able to cultivate much better: the landlord will not be able to live much better. In the purchaſe of foreign commodities, this enhancement in the price of corn might give them ſome little advantage; but in that of home-made commodities, which conſtitute the whole expence of the farmer, and the far greater part even of that of the landlord, it can give them none at all.

The bounty, as it raiſes in the home market, not ſo much the real, as the nominal price of our corn; as it augments, not the quantity of labour which a certain quantity of corn can maintain and employ, but only the quantity of ſilver which it will exchange for; diſcourages our manufactures, without rendering any conſiderable ſervice to our farmers or country-gentlemen. Although it puts a little more money into the pockets of both, yet if their money ſinks in its value, as to the quantity of labour, proviſions, and home-made commodities of all different kinds, which it is capable of purchaſing, as much as it riſes in its quantity, the benefit accruing from it will be little more than nominal and imaginary. There is, indeed, one claſs of men, to whom the bounty may be eſſentially ſerviceable; and this conſiſts of the corn-merchants, the exporters and importers of corn, who are moſt anxious for the continuance or renewal of the bounty.

Bounties upon the exportation of any home-made commodity are liable to the general objection, that may be made to all the different expedients of the mercantile ſyſtem, which is that of forcing ſome part of the induſtry of the country into a channel leſs advantageous than that into which it would run of its own accord, and alſo to the particular objection of forcing it into one that is actually diſadvantageous; the trade which cannot be carried on otherwiſe than by means of a bounty, being neceſſarily a loſing trade. The bounty upon the exportation of corn is liable to this farther objection, that it can in no reſpect promote the raiſing of that particular commodity, of which it was meant to encourage the production. With a view of encouraging the production of any commodity, a bounty upon production would operate more directly than one upon exportation; and it would have the advantage of impoſing only one tax upon the people, or that which they muſt contribute in order to pay the bounty. Bounties upon production, however, have been very rarely granted. The prejudices eſtabliſhed by the commercial ſyſtem have taught us to believe, that national wealth ariſes more immediately from exportation than from production; and accordingly, it has been more favoured, as the more immediate means of bringing money into the country. It has been alſo ſaid, that bounties upon production have been found more liable to frauds than thoſe upon exportation. The latter, however, have not been altogether exempt from this charge. A bounty upon exportation has ſometimes enabled the merchant and manufacturer to ſend abroad the ſurplus goods of an overſtocked market, and to keep up the price of what remains in the home-market: and, therefore inſtances have occurred, in which the undertakers of particular works have privately agreed to give a bounty out of their own pockets upon the exportation of a certain portion of the goods, in which they have dealt; and this expedient has anſwered the purpoſe, by doubling the price of their goods in the home market, notwithſtanding a very conſiderable increaſe in the produce.

Something like a bounty upon production, however, has been granted upon ſome particular occaſions. Of this nature are the tonnage bounties given to the white-herring and whale-fiſheries. Theſe, it may be ſuppoſed, have a direct tendency to render the goods cheaper in the home-market than they otherwiſe would be. In other reſpects, their effects are the ſame as thoſe of bounties upon exportation. By means of them a part of the capital of the country is employed in bringing goods to market, of which the price does not repay the coſt, together with the ordinary profits of ſtock. But though the tonnage bounties on the fiſheries do not contribute to the opulence of the nation, yet they may be thought to contribute to its defence, by augmenting the number of its ſailors and ſhipping. Dr. Smith ſuggeſts, however, that this may ſometimes be done by means of ſuch bounties, at a much ſmaller expence than by keeping up a great ſtanding navy (if ſuch an expreſſion may be uſed), in the ſame way as a ſtanding army; and the ingenious author inclines to believe, that in granting at leaſt one of theſe bounties, the legiſlature has been groſsly impoſed upon On this ſubject he makes the following obſervations. Firſt, the herring buſs bounty is too large. Secondly, the bounty to the white herring fiſhery is a tonnage bounty, and proportioned to the burden of the ſhip, not to her diligence or ſucceſs in the fiſhery; whence it has been too common for veſſels to fit out for the ſole purpoſe of catching, not the fiſh, but the bounty. Thirdly, the mode of fiſhing, for which this tonnage bounty in the white-herring fiſhery has been given (by buſſes or decked veſſels from 20 to 80 tons burden), ſeems not ſo well adapted to the ſituation of Scotland as that of Holland, from which country it ſeems to have been borrowed. The bounty granted to the buſs fiſhery is neceſſarily a diſcouragement to the boat-fiſhery, which ſeems beſt adapted to the peculiar ſituation of Scotland, interſected by arms of the ſea running up a long way into the land, and called ſea-lochs, and which, by the operation of the buſs bounty, is gone almoſt entirely to decay. Fourthly, in many parts of Scotland, during certain ſeaſons of the year, herrings ſupply a great part of the food of the common people; and, therefore, a bounty, which tended to lower their price in the home market, might contribute to very general relief. But the herring-buſs bounty contributes to no ſuch good purpoſe. It has ruined the boat-fiſhery which is beſt adapted for the ſupply of the home market, and the greater part of its produce is ſent abroad. Another ingenious writer, Dr. Anderſon (ubi infra), has pointed out ſimilar defects attending the fiſheries of Scotland; and he propoſes, for remedying them, that a reaſonable bounty ſhould be allowed on every barrel of herrings properly cured; and that the bounty upon buſſes per ton ſhould be lowered, and theſe veſſels be prohibited from fiſhing within a limited diſtance of the coaſt. This would allow the natives to fiſh in their creeks with freedom; and it would likewiſe allure merchants to come and purchaſe the fiſh when freſh caught, and cure them for themſelves. But as the moſt important improvement, he propoſes that the herring and Greenland whale-fiſheries ſhould be made to go hand in hand, and mutually aſſiſt one another. The whale-fiſhery, he obſerves, has beeen greatly retarded by the large ſize of the veſſels which have been uſually employed in it, and the miſmanagement that always attends public companies in matters of trade. To prevent this, in ſome degree, for the future, Dr. Anderſon propoſes, that the bounty ſhould be granted to veſſels of a ſmaller ſize; and that all reſtrictions, with regard to the number of hands, proviſions, tackle, &c. ſhould be entirely aboliſhed; in lieu of which the veſſels ſhould be only obliged to purſue the fiſhing for a certain limited time (if not ſooner loaded), without following any other employment. As theſe ſmall veſſels would be equally proper for the herring fiſhery as for that in the Greenland ſeas; and as in both fiſheries the neceſſary number of hands is nearly the ſame, it would be eaſy for theſe adventurers, on their return from the Greenland ſeas, to put aſhore their loading, with the fiſhing apparatus, and take on board the tackle, &c. neceſſary for the herring-fiſhery, and to proceed immediately to the proper ſtations in ſearch of that kind of fiſh. It is further propoſed, that inſtead of fixing the rendezvous for the herring-fiſhery preciſely to the 22d of June and 1ſt of October, as at preſent, ſhips might be entitled to receive the bounty, if they began fiſhing on any day between the two periods abovementioned; the ſhips being obliged to continue three months from the time of their entry, or to the end of the fiſhing ſeaſon following, if they have not ſooner completed their lading. By ſuch regulations, the loſs of time would be prevented; and adventurers would be induced to fit out ſmall veſſels at a time when trade was dead; and they would conduct the buſineſs at a leſs expence, and with greater profit, than large trading companies. See Fishery.

In particular manufactures that are deemed neceſſary for the defence of ſociety, and for the ſupply of which it would not always be prudent to depend upon our neighbours, and that could not otherwiſe be ſupported at home, it would not be unreaſonable to tax all other branches of induſtry for their ſupport. Upon this principle the bounties upon the exportation of Britiſh made ſail-cloth, and Britiſh made gunpowder, may both be vindicated. But it can ſeldom be reaſonable to tax the induſtry of the great body of the people, in order to ſupport that of ſome particular claſs of manufacturers. However, in a ſeaſon of great proſperity, when the public enjoys a greater revenue than it knows well what to do with, it may, perhaps, be as natural to give ſuch bounties to favourite manufacturers, as to incur any other idle expence. "In public, as well as in private expences, great wealth may, perhaps, frequently be admitted as an apology for great folly. But there muſt ſurely be ſomething more than ordinary abſurdity in continuing ſuch profuſion in times of general difficulty and diſtreſs."

When a bounty may be conſidered as a drawback, it is not liable to the ſame objections with that which is properly a bounty. Thus, the bounty upon refined ſugar exported is a kind of drawback of the duties upon the brown and muſcovado ſugars from which it is made. That ſpecies of refined ſugar upon which the bounty is granted is denominated, in the ſtatute-book, "ſugar in the loaf and whole, being nett." Upon the export of this ſort of ſugar the bounty was raiſed by 5 Geo. III. c. 45. to 14s. 6d.; and a further bounty of 11s. 6d. was granted by 21 Geo. III. c. 16., in conſequence of an additional duty of 6s. per cwt. laid in 1781 on raw ſugar imported. The whole bounty amounts to 26s. per cwt. When parliament, in 1791, by 31 Geo. III. c. 15. laid a further duty of 2s. 8d. per cwt. on raw ſugar imported from the Britiſh plantations, making the import duty 15s. per cwt. in the whole, no addition was made to the bounty on the export of refined loaf. But an addition was made of 3s. 4d. to the drawback, on what the ſtatute calls "baſtards, and ground or powdered ſugar," and alſo on "refined loaf broken into pieces," and all ſugar called "candy." It was propoſed in 1791, when the additional duty of 2s. 8d. was moved, to augment the bounty in the uſual proportion; but the ſugar refiners remonſtrated againſt the meaſure, as being, according to their ſtatement, beneficial only to the planters. By a ſubſequent law it is enacted, that, after the year 1792, whenever the average of the prices of brown or muſcovado ſugar (taken weekly upon oath before the lord mayor of London, and publiſhed in the Gazette) ſhall exceed, in the ſix weeks reſpectively preceding the middle of February, June, and October, the amount of 50s. per cwt. (excluſive of the duty), the drawback on *raw* ſugar exported is immediately to ceaſe for four months, and the bounty on *refined* is to ceaſe during a like term, but commencing after an interval of one month. From a ſtatement made by Mr. Bryan Edwards (Hiſt. of the Weſt Indies, vol. ii. p. 462.) it appears, that the apparent loſs to the revenue, ariſing from the bounty, is no more than one ſhilling the cwt. But as every hogſhead of ſugar loſes conſiderably in weight, after the duty is paid, and before it is either exported or worked up, and the duty is often paid for more than the caſks really contain, by the ſtrict regulations reſpecting tare, every hogſhead, by a moderate calculation (averaging the good and bad ſugars), loſes 56 lbs. which, at 15s. per cwt. the import duty, makes 7s. 6d. per hogſhead loſs to the planter, and a clear and certain gain to the revenue, however the ſugar may be diſpoſed of. Thus government is reimburſed for a conſiderable part of what it appears to loſe by the bounty, and the intereſt which it gains by a depoſit of the whole duties on importation makes up the remainder. "The average annual import of raw ſugar is about 160,000 hogſheads of 12 cwt. nett; now ſuppoſing every ounce of this was to be exported, and receive the drawback of 15s. per cwt. yet, from the difference of weight alone in the ſame ſugar, occaſioned by an unavoidable waſte, government would have received in duties, from this ſingle article, between 50 and 60,000l. per annum more than it refunds in drawbacks and bounties on the ſame commodity." See Drawback, and Sugar.

The bounty upon wrought ſilk exported is alſo a drawback of the duties upon raw and thrown ſilk imported. See Silk.

The bounty upon gun-powder exported is a drawback of the duties upon brimſtone and ſalt-petre imported. In the language of the cuſtoms, thoſe allowances are called drawbacks, which are given upon goods exported in the ſame form in which they are imported. When that form has been ſo altered by manufacture of any kind, as to come under a new denomination, they are called bounties. Bounties are ſometimes called premiums, as drawbacks are ſometimes called bounties.

Having given a compendious abſtract of Dr. Smith's reaſoning againſt the ſyſtem of bounties, particularly as it is applicable to the exportation of corn, we ſhall now advert to the arguments alleged by the advocates of this ſyſtem in its favour. Among theſe advocates we may reckon Dr. James Anderſon, in his letters, entitled "Obſervations on the means of exciting a ſpirit of national Induſtry, &c." 4to. 1777, and his "Calm Inveſtigation of the circumſtances that have led to the preſent ſcarcity of grain in Britain," 8vo. 1801; Mr. Dirom, in "An Inquiry into the corn laws and corn trade of Great Britain, &c." 4to. 1796; Mr. Mackie, in a "Supplement" to the laſt-mentioned work; and Mr. Malthus, in his "Eſſay on the principle of population, &c." 4to. 1803. Some of the earlieſt topics, from which arguments were deduced in favour of the bounty, were its great encouragement of Britiſh ſhipping, and the gold it brought home for paying the balance of exported corn. But excluſively of theſe arguments, the advocates for the bounty urge that, by forcing a production of corn, greater than the annual conſumption of the home market, the bounty provides a reſerve againſt years of deficient crop;—that it ſecures an adequate profit to the farmer;—that it reduces the prices of corn, which are uſually very fluctuating, to a greater uniformity and ſteadineſs;—and that it makes this uniform price rather lower than it otherwiſe would be. From ſuch conſiderations, Dr. Anderſon, and others on the ſame ſide of the diſputed queſtion with himſelf, have inferred, that ſetting aſide the innumerably beneficial effects of a well regulated and efficient bounty on the exportation, aided by a duty on the importation of corn, with regard to the population, induſtry, manufactures, commerce, national wealth, public tranquillity, and augmentation of revenue, it is a meaſure fraught with multiplied advantages; and "that it could not be abandoned," ſuch is the ſtrong language of Dr. Anderſon, "without endangering the welfare of the people, and the very exiſtence of this kingdom, as an independent nation." Upon the four preceding propoſitions it has been obſerved by an anonymous writer, ſeemingly well acquainted with the ſubject (Edinburgh Review, N° IX.), that the promiſed ſteadineſs in the price of corn muſt be derived from that ſurplus of produce which is to be reſerved in years of a bad crop; this ſurplus of the average produce above the annual conſumption, muſt be the reſult of an enlarged encouragement of tillage; and this encouragement, operating by an augmentation of the profits of the farmer, muſt ultimately conſiſt in an increaſe of the price of his commodity. The argument, therefore, ſo far as it depends upon the firſt three of the above alleged advantages, reſolves itſelf into this ſingle propoſition, viz. that the bounty gives the farmer a real advance upon the price of his corn. When it is ſtated, as a fourth conſideration, that it has likewiſe the effect of lowering the price of corn to the conſumers, it is the money price only that can here be conſiſtently underſtood; a diminution of which is without doubt compatible with an advance of the real price. Conſequently, in an inveſtigation of the effects produced by a bounty upon the commerce and growth of corn, the preciſe ſubject of inquiry is the effect of that bounty upon the real price, and upon the money price of corn. Dr. Smith, accordingly, who has decidedly pronounced a very different opinion from that above ſtated, maintains it, by propoſitions directly the reverſe, already detailed, of which the following is a ſummary:—that it can have no effect in equalizing prices, becauſe there is no ſurplus to be reſerved in years of ſcarcity;—that there can be no ſuch ſurplus, becauſe the bounty gives no additional encouragement to agriculture;—that it can give no ſuch encouragement becauſe it occaſions no advance of the real price of corn;—and laſtly, that its effect is to raiſe, not to lower, the average money price of that commodity. The anonymous writer above cited, after having illuſtrated, in a very clear and ſatisfactory manner, the effect of a bounty, firſt on the *production* and then upon the *exportation* of bread-corn, in conformity to the principles and reaſoning of Dr. Smith, ſupplies ſome defects, and corrects ſome errors that eſcaped the notice of this very ingenious and accurate author, in his general argument upon the bounty. By ſeparating the extenſion of the foreign market, from the enhancement of price to the farmer, and treating them as quite diſtinct, Dr. Smith ſeems to have overlooked the neceſſary connection that ſubſiſts between them. In both caſes, he appears to have too haſtily aſſumed, that a bounty on exportation would *immediately* occaſion a riſe of the money-price in the home market; and this aſſumption betrays itſelf explicitly, when he ſpeaks of it as "a very moderate ſuppoſition, that a bounty of 5s. per quarter upon exportation, may raiſe the price 4s. in the home market." From this aſſumption, he deduces a ſeparate anſwer to the alleged enhancement of price; but his remarks on this head, which, as far as they extend, are unexceptionable, are not ſufficient to warrant his inference, that the bounty can have no effect in raiſing the real price of corn; becauſe he has overlooked that *interval* which elapſes between the enhancement of the money-price of corn, and its communication to the money-price of labour and other commodities. In his ſeparate anſwer to the alleged extenſion of foreign demand, he does not expreſsly deny the fact, but affirms, that, in every particular year, this is at the expence of the home market; and endeavours to ſhew, that the bounty alſo reſtrains the gradual extenſion of the home market, by its enhancement of the price. But in affirming, that the quantity exported in every particular year, were it not for the bounty, would remain in the home market, he evidently takes it for granted, that this quantity, though there had been no bounty, would ſtill have been grown; now, this is the very queſtion, upon which he undertakes to prove his particular opinion. In endeavouring to ſhew, that the enhancement of price, occaſioned in the home market by the bounty, muſt reſtrain the population or the induſtry of the country, he proceeds upon the above-mentioned aſſumption, that the bounty occaſions an immediate riſe of the money-price of corn; and muſt, therefore, either reduce the ſubſiſtence of the labourers, or, if wages riſe, the ability of their employers to give them work. If that riſe of money-price, however, is conſequent, as the anonymous writer argues, to an extenſion of demand in the foreign market, it will at firſt increaſe the ability of thoſe employers; and though it will likewiſe reduce at firſt the ſubſiſtence of the labourers, their wages muſt ſoon riſe to their true rate; and this riſe in the money-price of labour, will only reduce the ability of the employers to its former level.

The anonymous writer, after theſe criticiſms on the reaſoning of Dr. Smith, proceeds to ſpecify ſome of the errors into which the advocates for the bounty have fallen, which are of a more palpable kind, and which proceed from an imperfect acquaintance with the principles of political economy. In the *firſt* place, they have miſunderſtood Dr. Smith's important doctrine, that the variations of the money-price of corn are communicated ultimately to that of labour, and other commodities. Whilſt they inſiſt, that the price of commodities and labour is liable to be affected by many other circumſtances, beſides the price of corn, they advance a truth, in itſelf unqueſtionable, and not incompatible with Dr. Smith's propoſition, which merely aſſerts, that every change which the bounty may occaſion in the money-price of corn, will communicate itſelf, firſt to the money-wages of labour, and, through them, to the money-price of all other articles; and thus the real price of corn will be maintained the ſame, notwithſtanding a nominal variation. In the *ſecond* place, they ſeem very imperfectly aware of the manner in which the principle of competition operates upon profits, and upon exchangeable value: and, on this account, many of their remarks are inconſiſtent as well as unfounded. They have ſuppoſed, with Dr. Smith, that the ſum of the bounty is immediately added to the former money-price even in the home-market, and, at the ſame time, contend, that the average-price in that market will be lowered. It is alſo their opinion, that the real price of corn will, upon the whole, be rendered cheaper to the conſumers, and that the ſame real price of corn will be maintained permanently higher to the farmer; though theſe two poſitions are, in direct terms, contradictory to each other. Mr. Malthus obſerves, that the bounty greatly lowers the price of corn, by producing a growth conſiderably above the wants of the actual population; whilſt he forgets, that a greater growth can only be occaſioned by a greater demand, to which it will be always adjuſted; and, keeping the ſupply and the demand always in the ſame ratio, will in other words keep the price always at the ſame rate. But the advocates for the bounty have betrayed a much leſs pardonable inattention to the neceſſary action of the principle of competition, when they conceive, as ſome of very high authority have done (ſee Reports of the committee of the houſe of commons reſpecting the corn trade, ordered to be printed May 14th and June 14th 1804), that the average price of grain in the home market may be ſo low as not to yield a fair and reaſonable profit to the grower. Beſides, Dr. Smith and his opponents have pronounced, that, in years of extraordinary abundance, the bounty will prevent the money-price of corn in the home market from falling quite ſo low, as it would fall if there were no bounty. Dr. Smith, indeed, is conſiſtent with himſelf, becauſe he uniformly maintains that the bounty can have no effect in rendering the annual produce larger than it otherwiſe would be. But thoſe who aſſert this poſition, and aſſume that the bounty increaſes the produce, and occaſions a ſurplus growth above the annual conſumption, evidently incur the charge of inconſiſtency. For this ſurplus will, in a year of extraordinary abundance, partake of the extraordinary increaſe; ſo that over and above the uſual home ſupply, there will, in ſuch a year, be reaped not only the extraordinary increaſe upon that ſupply, together with the uſual ſurplus for exportation, but likewiſe the extraordinary increaſe upon that ſurplus. Of theſe four portions of the crop, therefore, not only the ſecond, but the fourth alſo, will be thrown as an exceſs upon the home-market; and the price in that market will conſequently be lowered much more by the whole of this exceſs, than it would have been by the former part of it alone.

The ingenious writer, to whom we are indebted for theſe remarks, ſuggeſts, that a bounty upon export may, in a particular manner, afford ſome temporary encouragement to tillage; and thus, to a certain degree, force the production of a ſurplus, which may be reſerved for the home-market in deficient years. By preventing, in ſuch years, the temporary price from riſing ſo high as it otherwiſe would, it may be conſidered as reſtraining a little on one ſide the occaſional fluctuations of the price of corn; but, by overſtocking the home-market in plentiful years ſtill more than it would otherwiſe be overſtocked, it muſt be conſidered as giving a ſtill greater range to the fluctuation of the temporary price on the other ſide. Whilſt the bounty has this influence upon the temporary changes of real price, its effects upon the nominal price of corn will be to raiſe and keep it higher than it otherwiſe would be. If the encouragement to tillage, derived from a bounty, ſhould be deemed a ſufficient benefit to induce a great nation to eſtabliſh it; it ſhould be remembered, that though it may indirectly ſecure a more certain ſupply of corn, it neceſſarily retards, upon the whole, the growth of national opulence and induſtry. It forces a part of the national capital into a branch of trade, which is unavoidably a loſing one, and which does not return the whole of the capital that is employed in it; for the whole ſum granted in bounties, together with the expences of collecting the tax for defraying them, is a part of the national capital thrown into that trade without any return.

After eſtimating to its full amount the poſſible benefit to be derived from ſuch an artificial contrivance as the bounty, we ſhould not only weigh againſt that, both the immediate ſacrifice and all the ſubſequent diſadvantages, but we ought alſo to conſider whether the very benefit propoſed, at leaſt, in one point of view, might not be better obtained in another way; as by the removal of any exiſting impediments to cultivation, to the free commerce of land, the free employment of capital, or the free transference of labour. Beſides the ſacrifice of capital that is incurred by bounties, there is a diſadvantage ariſing from that conſtant diminution of the real wages of labour, which is occaſioned by the progreſſive riſe of the price of corn in the home-market; other diſadvantages are incurred from the conſtant enhancement of the money-price of labour and all other commodities, both in the depreciation of fixed pecuniary returns, and in the injury to domeſtic manufactures, with regard to their competition againſt foreign induſtry. Moreover, another diſadvantage, perhaps ſtill greater, conſiſts in the uncertainty and derangement to which interferences of law ſubject the capital that is veſted in the trade of grain, and the obſtacle oppoſed by them to the free enlargement and conſolidation of this moſt important ſyſtem of commerce. On the other hand, it ſhould be conſidered, that the encouragement which any aſſigned bounty will give to huſbandry, muſt expire after a ſhort interval, or as ſoon as the money price of corn, in the home market, has riſen, which it will inevitably do, ſo high as to cover the whole advantage, which the bounty had originally given to the exporter in his ſales abroad :—and the whole encouragement which, in the mean time, the bounty can give to agriculture, will be found to be very ſlight, when it is conſidered in what way it is formed, and that it conſiſts, not in the addition of the whole bounty to the farmer's price, but in that ſmall addition to his price which is occaſioned from time to time by the gradual extenſion of foreign demands. In reference to the preſent circumſtances of this country, it ought alſo to be recollected, that, when the average price of corn at home is greater than that of the foreign market, the interval of encouragement to tillage, under the ſame bounty, will be ſhorter than in the other two caſes, and the whole diſadvantage of high money prices will be ſooner brought to its greateſt height. Adverting to the preſent ſtate of the agricultural produce of our own country, and what has cauſed an alarm to ſome of our legiſlators as well as political writers, we are happy in adopting the opinion of thoſe who think it unneceſſary. If, beſides being dependent in years of ſcarcity on very large importations from abroad, we are even in ordinary years dependent upon importation for a certain portion of our neceſſary ſupply, it ſeems, admitting the fact, to be only a temporary and ſlight inconvenience. It is doubted, whether, in this caſe, a bounty upon exportation, and the prohibition of importation, furniſh the moſt ſuitable and effectual remedy : and it is not unreaſonably ſuggeſted, that an entire freedom of importation, continued with a bounty upon production, augmented from time to time, might have appeared at leaſt a more plauſible propoſal. Nothing can be more unfounded than the fear, which ſome advocates for the bounty have expreſſed, that England may ceaſe to be an agricultural nation ; except the lamentations, which others have indulged over the actual decline of its huſbandry, ſince that which has been called the fatal ſtatute of the year 1773. It ſhould be recollected that, from year to year of this period, the huſbandmen of Britain have extended their capital, their ſkill, and their produce, though the commerce and manufactures of the iſland have in ſome meaſure concealed its agricultural grandeur. The bounty ſeems to have recommended itſelf to ſome of its admirers, as a ſimple expedient for ſecuring, by paying a few ſhillings at the cuſtom houſe, ſuch a ſurplus of annual produce as will equalize the variation of value, and eſtabliſh even a remedy againſt the natural inconſtancy of the ſeaſons. In this view of it, the bounty is to accumulate, by a kind of mechanical operation, a ſurplus of produce, for ſupplying an occaſional deficiency ; and it is to act as a regulator of the price, againſt the circumſtances that tend to enhance or to depreſs it. If it is capable of doing ſo much, it may alſo do more ; and ſerve to repreſs, as Mr. Malthus has inferred, the principle of population a little in years of plenty, and to encourage it comparatively in years of ſcarcity ; regulating, in this manner, the population more equally, according to that quantity of ſubſiſtence which can permanently be ſupplied. It is well obſerved, that a meaſure can rarely be wiſdom for one great ſtate, which may not be permanently followed by all. All cannot, by adopting the bounty, ſecure to each an export of grain ; and the ſingle nation that ſtoops from the plain high maxims of policy to ſuch an artifice, will ultimately be convinced that the advantage gained by it, if any, muſt be very inconſiderable. The balance of this trade cannot long be very great to any nation ; and it will be naturally poſſeſſed by that one, whoſe capital and ſkill are in a condition to furniſh the additional ſupplies moſt advantageouſly to all. In this condition, if the exportation is free, it will hold the balance, without requiring the aid of a bounty ; nor can a bounty give it the balance, if it be not in that condition.

Having ſtated, as briefly as poſſible, the principal arguments on both ſides, for and againſt a bounty, we ſhall cloſe this article with a ſhort abſtract of the hiſtory of this commercial inſtitution. The prices of corn had been ſo variable during the 17th century, and in general ſo high, the average price of wheat for fifty years before 1650 having been 6l. 8s. 10d. and from 1650 to 1700 3l. 0s. 11d. per quarter, that the attention of the legiſlature had frequently been directed to this object ; and various attempts had been made to revive agriculture, with a view of redreſſing this evil, by encouraging the exportation, and checking the importation of corn ; but none of them had proved effectual. Towards the end of the century, however, the prices had been ſo uniformly high, and on ſome occaſions ſo oppreſſive, as to induce the truly patriotic and judicious adminiſtration under William and Mary, immediately after the revolution in 1688, to inveſtigate ſome method of remedying this evil, and of preventing its future recurrence. With this view, a reſolution was adopted of granting a certain bounty upon the exportation of corn, when the crops were ſo abundant as to reduce the price below the rate which they conceived to be neceſſary for indemnifying the farmer for his expence and trouble, ſo as juſt to enable him to find for it a foreign market ; and with a view alſo of preventing a competition of foreigners in our home market, when the crop happened to be uncommonly abundant, and of guarding againſt the machinations of corn-dealers, who might, for their own lucrative purpoſes, occaſionally introduce much foreign corn into the home market, ſo as to lower the price of a moderate crop in Britain below its intrinſic value, they impoſed certain duties on corn imported, which roſe or fell in proportion to the ſelling price at the time in our own market, as protecting duties. The aim of the legiſlature, in theſe regulations, was to preſerve, as much as poſſible, an equality and moderation of price at all times in the home market. Such were the principles of the corn law, firſt enacted in the year 1688 by 1 W. and M. and finally completed in 1700 by 11 and 12 W. and M. c. 20. By the law of 1688, a bounty of 5s. was granted for every quarter of wheat exported, when the price was at or under 48s. per quarter ; and by the ſame law, there was payable on importation a duty of 1l. 4s. per quarter, when the price did not exceed 3l. 19s. 3d. ; when the price was above that, and not exceeding 6l. ; the duty payable was 12s. per quarter ; and when the price was above 6l., the duty was only 8s. This commercial regulation was much celebrated by the beſt writers and ſtateſmen of England, throughout the firſt part of the laſt century ; they always mentioned it with admiration, as an inſtitution that had been wiſely planned, and that had completely ſucceeded ; and it was ranked with the act of navigation, the laws for the woollen ſtaple, or queen Elizabeth's proviſion for the poor, as an inſeparable part of that peculiar ſyſtem, to which England was indebted for her ſuperiority over all other nations. The diminution of the average price, and the progreſſive increaſe of exports, within the period at the beginning of which the bounty had been inſtituted, preſented a flattering coincidence ; and at a time when the analyſis of national wealth was unknown, it was natural enough to believe, that the cauſe of theſe curious facts could be no other but that remarkable law which juſt preceded their appearance. As a proſpective regulation, Dr. Anderſon conſiders it as one of the higheſt exertions of human wiſdom ; for the beneficial tendencies that have reſulted from it in practice, and to which we can now refer as facts to inform our judgment, could be only contemplated by the deviſers of that law as plauſible probabilities. By the operation of this law, the prices in the home market were reduced, in the courſe of 50 years, to the conſumers in the home market, from 3l. to 1l. 12s. 6d. per quarter; and we were enabled by it to export corn till our exceſs of exports roſe by degrees to the amount of more than one million and a half quarters in one year, which brought into the country a ſum not much under three millions ſterling ; being paid for the price of our own beſt manufactures, and for encouraging the moſt uſeful kind of induſtry that can ever be promoted in any nation. Similar ſentiments with regard to king William's corn law were adopted by our admirers upon the continent. The bounty became a theme of panegyric in all their political treatiſes. Though a moſt artificial expedient, it was applauded even by the economiſts of France, in whoſe profound writings all devices were reprobated, that might check the ſpontaneous order of nature. Dr. Smith, however, maintained that the ſyſtem of laws, which is connected with the eſtabliſhment of the bounty, ſeems to deſerve no part of the praiſe which has been beſtowed upon it. The improvement and proſperity of Great Britain, which have been ſo often aſcribed to thoſe laws, may very eaſily be accounted for by other cauſes. That ſecurity which the laws in Great Britain give to every man, that he ſhall enjoy the fruits of his own labour, is alone ſufficient to make any country flouriſh, notwithſtanding theſe and twenty other abſurd regulations of commerce ; and this ſecurity was perfected by the revolution much about the ſame time that the bounty was eſtabliſhed. The natural effort of every individual to better his own condition, when ſuffered to exert itſelf with freedom and ſecurity, is ſo powerful a principle, that it is alone, and without any aſſiſtance, not only capable of carrying on the ſociety to wealth and proſperity, but of ſurmounting a hundred impertinent obſtructions with which the folly of human laws too often incumbers its operations; though the effect of theſe obſtructions is always more or leſs either to encroach upon its freedom, or to diminiſh its ſecurity. In Great Britain induſtry is perfectly ſecure ; and though it is far from being perfectly free, it is as free, or more free, than in any other part of Europe. Upon the whole, though the period of the greateſt proſperity and improvement of Great Britain has been poſterior to that ſyſtem of laws which is connected with the bounty, we muſt not on this account impute it to thoſe laws. It has been poſterior likewiſe to the national debt ; but the national debt has moſt aſſuredly not been the cauſe of it. The ſentiments of Dr. Smith were adopted by many philoſophical inquirers ; and at length they approved themſelves to our legiſlators, and became a ſubject of parliamentary deliberation. Accordingly the act of 1773, (13 Geo. III. c. 43 ; ſee alſo ſtats. 31 Geo. III. c. 30. 32 Geo. III. c. 50. 33 Geo. III. c. 3, 65.) which was conducted through the houſe of commons by Mr. Burke, effected a virtual repeal of the bounty, though it retained the language, and ſeemed even to confirm the purpoſes of the former law, in compliance with thoſe prejudices which it was more eaſy to betray than to conquer. By this ſtatute, the high duties upon importation for home conſumption are taken off, as ſoon as the price of middling wheat riſes to 48s. per quarter ; that of middling rye, peaſe or beans, to 32s. ; that of barley to 24s. ; and that of oats to 16s. ; and inſtead of them a ſmall duty is impoſed of only 6d. upon the quarter of wheat, and upon that of other grain in proportion. With regard to all theſe different ſorts of grain, but particularly with regard to wheat, the home market is thus opened to foreign ſupplies at prices conſiderably lower than before. By the ſame ſtatute, the old bounty of 5s. upon the exportation of wheat ceaſes ſo ſoon as the price riſes to 44s. per quarter, inſtead of 48s., the price at which it ceaſed before ; that of 2s. 6d. upon the exportation of barley ceaſes as ſoon as the price riſes to 22s. inſtead of 24s.; the price at which it ceaſed before ; that of 2s. 6d. upon the exportation of oatmeal ceaſes as ſoon as the price riſes to 14s. inſtead of 15s., the price at which it ceaſed before. The bounty upon rye is reduced from 3s. 6d. to 3s.; and it ceaſes ſo ſoon as the price riſes to 28s. inſtead of 32s., the price at which it ceaſed before. So far, ſays Dr. Smith, this law ſeems to be an improvement upon the ancient ſyſtem ; but by this law, a bounty of 2s. per quarter is given for the exportation of oats, whenever the price does not exceed 14s. No bounty had ever before been given for the exportation of this grain, any more than for that of peaſe or beans. By the ſame law, the exportation of wheat is prohibited as ſoon as the price riſes to 44s. per quarter ; that of rye at 28s. ; that of barley at 22s. ; and that of oats at 14s. Theſe ſeveral prices are, in Dr. Smith's opinion, much too low ; and there ſeems to be an impropriety in prohibiting exportation altogether at thoſe preciſe prices, at which that bounty, which was given in order to force it, is withdrawn. The bounty ought to have been withdrawn at a much lower price, or exportation ought to have been allowed at a much higher. In theſe reſpects the new law ſeems to be inferior to the ancient ſyſtem. However, with all its imperfections, Dr. Smith applies to it what was ſaid of the laws of Solon, that though not the beſt in itſelf, it was the beſt which the intereſts, prejudices, and tempers of the times would admit of ; and he adds, that in due time it might prepare the way for a better. Since the paſſing of this act, and the repeal of the bounty, circumſtances have occurred, in conſequence of which the prices of corn have riſen, and the balance of trade has been turned againſt us. The prices, according to the ſtatement of Dr. Anderſon, in 1801, have riſen from 2l. 2s. 1d. to 5l. 10s. per quarter ; and our imports have been advanced to three millions of quarters nearly, in value more than ſix millions ſterling ; and this, compared with the ſum already ſtated ariſing from the exports under the former act, granting a bounty, makes a total balance of trade againſt us, in this ſingle article, of not leſs than nine millions ſterling per annum. Theſe facts ſeem to have made a great impreſſion on ſeveral ingenious and well informed minds; the bounty has once more found advocates among ſome political writers of great merit, and among ſeveral ſtateſmen ; and a ſtatute has been lately paſſed, which, it is expected, will produce all the beneficial effects that have been aſcribed by its advocates to the old bounty. The committee of the houſe of commons, in their ſecond report, ordered to be printed June 14th, 1804, deliver their opinion in theſe words : "It appears to the committee, that the price of corn from 1791 to the harveſt of 1803 has been very irregular ; but, upon an average, increaſed in a great degree by the years of ſcarcity, has in general yielded a fair profit to the grower. The uſual high prices, however, have had the effect of ſtimulating induſtry, and bringing into cultivation large tracts of waſte land ; which, combined with the two laſt productive ſeaſons, and other cauſes, have occaſioned ſuch a depreſſion in the value of grain, as it is feared will greatly tend to the diſcouragement of agriculture, unleſs maintained by the ſupport of parliament." Accordingly an act was paſſed July 30th, 1804, (44 Geo. III. c. 109.) to regulate the importation and exportation of corn, and the bounties and duties payable thereon. Without the aid of this new ſtatute, it has been ſaid, that the farmer cannot be ſure of obtaining, even in the home market, a fair and reaſonable profit. By thoſe who have diſapproved this meaſure, and who, adopting the general principles of Dr. Smith, are adverſe to a bounty, it has been alleged, that, like other ſorts of trade, that of the farmer is liable occaſionally to the ſpirit of overtrading, if profits for a time have happened to be greater than ordinary. The late years of dearth and moſt extraordinary price, they ſay, rendered the profits of farming, for the time, much greater than ordinary: and the conſequence appears to have been a pretty free indulgence of the diſpoſition to trade too much, and to enter into projects diſproportioned to the capital that would immediately be inveſted. In many inſtances, where farmers came to make a new agreement about rent, they reckoned too confidently upon the continuance of prices, which they ought to have conſidered as unuſual; and made the eſtimate of their future returns too much upon the recent rate of profit, and not upon an average ſufficiently and reaſonably large. Like other improvident ſpeculators, they were, of courſe, to ſuffer for their want of foreſight, as ſoon as prices and profit returned to their ordinary rate. Hence it has happened, that thoſe farmers who had overtraded, and who found it difficult to make good their imprudent engagements, found it almoſt as eaſy to perſuade other perſons as themſelves, that prices are much too low. Their landlords, in particular, are not the perſons moſt likely to diſcover that prices are not too low, but rents a little too high; and they may honeſtly find it ſomewhat difficult to be convinced, that the embarraſſment of their tenants is owing to that local cauſe, and not to ſomething that affects the general condition of the country. To this purpoſe, it is ſaid, in a pamphlet by a member of parliament, entitled, "Curſory Obſervations on the act for aſcertaining the bounties, &c." 1804, that, "times, unfortunate in other reſpects, impreſſed on tillage a renovated vigour; a vigour which the principles of this act, and thoſe alone, are able to ſuſtain." By this ſtatute it was enacted, that, from and after November the 15th, 1804, ſo much of the ſtatute 31 Geo. III. c. 30. as regulates the prices at which Britiſh corn, grain, malt, meal, flour, and biſcuit, may be exported, except to Ireland, and at which foreign corn, grain, meal, and flour, may be imported, except from Ireland, and as fixes the duties and bounties payable thereon, ſhall be repealed. By this ſtatute it is farther enacted, that the importation and exportation of corn, into and from England and Wales, ſhall be regulated by the average price of the twelve maritime diſtricts; and into or from Scotland, by the average price of the four diſtricts in Scotland; and that the bounties and duties ſhall be regulated by ſchedules, annexed to this act; that whenever the average ſhall be under the prices at which corn may be importable into Great Britain and Ireland, on the low duties from foreign parts, exportation ſhall be allowed from Great Britain to Ireland, &c.; and that the importation and exportation of corn, into and from Ireland, ſhall be regulated by ſchedules, annexed to this act. The firſt ſchedule ſhews the prices to which the ſcale of bounty is to attach on the export of corn, &c. and the prices at which the exportation is prohibited. By this ſchedule, wheat may be exported, when at or under 48s. per quarter, with a bounty of 5s.; rye, at or under 32s. with a bounty of 3s.; peaſe and beans are exportable without a bounty, till at or under 35s.; barley, beer, or bigg, or malt made of barley, beer, or bigg, may be exported at or under 28s. with a bounty of 2s. 6d.; oats, at or under 16s. with a bounty of 2s.; wheat flour, biſcuit, &c. with a bounty of 1s. 6d. per cwt.; wheat meal, with a bounty of 1s. 3d. per cwt.; barley, beer, or bigg meal, with a bounty of 10d. per cwt.; and oatmeal, with a bounty of 1s. per cwt. But when the price of wheat exceeds 54s. that of rye 35s. that of peaſe and beans 35s. that of barley, beer, or bigg, or malt made of them, 31s. and that of oats 19s. no export is allowable. The ſecond ſchedule ſhews the prices, according to which high or low duties are to take place on importation. When imported from the province of Quebec, or the other colonies or plantations in North America, wheat under 53s. per quarter is ſubject to the high duty of 24s. 3d. per quarter; at or above 53s. but under 56s. to the firſt low duty of 2s. 6d.; and at or above 56s. to the ſecond low duty of 6d.; rye, peaſe, and beans, under 35s. per quarter, are ſubject to the high duty of 22s.; at or above 35s. but under 37s. to the firſt low duty of 1s. 6d.; and at or above 37s. to the ſecond low duty of 3d.; barley, beer, or bigg, under 26s. are ſubject to the high duty of 22s.; at or above 26s. but under 28s. to the firſt low duty of 1s. 3d; and at or above 28s. to the ſecond low duty of 3d.; oats under 17s. pay the high duty of 6s. 7d.; at or above 17s. but under 18s. the firſt low duty of 1s.; and at or above 18s. the ſecond low duty of 2d.; oatmeal, if under 16s. 6d. per boll of 140 lbs. avoirdupoiſe, or 128 lbs. Scotch troy, is ſubject for every boll, to the high duty of 8s.; at or above 16s. 6d. per boll, but under 17s. 4d. to the firſt low duty of 1s.; and at or above 17s. 4d. per boll, to the ſecond low duty of 2d. When imported from any other foreign country, wheat under 63s. per quarter, pays the high duty of 24s. 3d.; at or above 63s. but under 66s. the firſt low duty of 2s. 6d.: and at or above 66s. the ſecond low duty of 6d.; rye, peaſe, and beans, under 42s. pay the high duty of 22s.; at or above 42s. but under 44s. the firſt low duty of 1s. 6d.; and at or above 44s. the ſecond low duty of 3d.; barley, beer, or bigg, under 31s. 6d. pays the high duty of 22s.; at or above 31s. 6d. but under 33s. the firſt low duty of 1s. 3d.; and at or above 33s. the ſecond low duty of 3d.; oats under 21s. pay the high duty of 6s. 7d.; at or above 21s. but under 22s. the firſt low duty of 1s.; and at or above 22s. the ſecond low duty of 2d.; oatmeal under 20s. per boll pays the high duty of 8s.; at or above 20s. but under 21s. the firſt low duty of 1s.; and at or above 21s. the ſecond low duty of 6d. The third ſchedule ſhews the prices to which the ſcale of bounty attaches on the export of corn, ground corn, flour or meal, malt, &c. from Ireland, and the prices at which the exportation is prohibited. When exported to any foreign country, wheat, at or under 29s. 5d. per barrel, Britiſh, is allowed a bounty of 3s.; rye, and alſo peaſe and beans, at or under 20s. 4d. a bounty of 1s. 10d.; barley, beer, or bigg, or malt made of theſe, at or under 16s. a bounty of 1s. 5d.; oats, at or under 10s. 2d. a bounty of 1s. 3d.; wheat, flour, biſcuit, &c. a bounty of 1s. 6d. per cwt.; wheat meal, 1s. 3d. per ditto; rye meal or flour, 9d. per ditto; barley, beer, or bigg flour, 10d. per ditto; and oatmeal, 1s. per ditto. When the price of wheat exceeds 33s. 1d. per barrel, Britiſh; of rye, peaſe, and beans, 22s. 3d.; of barley, beer, bigg, or malt made of them, 17s. 8d.; and of oats, 12s. 3d.; no exportation is allowed. The fourth ſchedule ſhews the prices, according to which the high or low duties are to take place on importation into Ireland; for which, and other particulars, we refer to the act itſelf.

Bounty, *Queen Anne's*, for augmenting poor livings under 50l. per annum, conſiſts of the produce of the firſt fruits and tenths, after the charges and penſions payable out of the ſame are defrayed. A corporation for management of the ſame was ſettled, &c. in 1704. See Augmentation and First Fruits.

By ſtat. 44 Geo. III. c. 2. the ſum of 8000l. was granted out of the conſolidated fund to the governors of queen

Anne's bounty, for the relief of curates deprived of their cures on account of the reſidence of incumbents, in conſequence of the act 43 Geo. III. c. 84. But no curate is entitled to receive any allowance under the act, who ſhall not produce to the ſaid governors a proper recommendation from the biſhop of the dioceſe in which the cure is ſituated, and no allowance ſhall exceed three-fourths of the income loſt.

BOUPER, Le, in *Geography*, a town of France, in the department of the Lower Pyrenées; 10 miles S. W. of Mauleon.

BOUQUENON, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Bitche on the Sarre; 5 leagues S. W. of Bitche.

BOUQUETIN, in *Zoology*, the wild goat. See CAPRA IBEX.

BOUR, in *Geography*, a town of Aſiatic Turkey, in the province of Caramania; 4 miles S. E. of Akſerai.

BOURAC, a town in the Arabian Irak; 70 miles S. S. E. of Bagdad.

BOURBACH, or *Grand-Bourbach*, a town and caſtle of Germany, in the circle of Weſtphalia, and principality of Naſſau-Dillenburg, near which is a lead mine; 9 miles W. of Dillenburg.

BOURBON, NICHOLAS, in *Biography*, a famous Latin poet in the 16th century, was a native of Vandeure, near Langres; and appointed by Margaret de Valois preceptor to her daughter, Jane d'Albert of Navarre, the mother of king Henry IV. He died at Condé whither he had retired, and where he had a benefice, about the year 1550. He wrote eight books of "Epigrams," commended by Eraſmus, and a poem on the forge entitled "Ferraria." He was diſtinguiſhed for his knowledge of antiquity and of the Greek language.

BOURBON, NICHOLAS, a celebrated Latin and Greek poet, was nephew of the former, and ſon of a phyſician at Bar-ſur-Aube, where he was born about the year 1574. He taught rhetoric in the colleges of Paris, and was nominated by cardinal Du-Perron, in 1611, profeſſor-royal in Greek eloquence. He was canon of Orleans and of Langres, and a prieſt of the oratory, though he declined the title. In 1637, he was admitted by cardinal Richelieu, a member of the French academy, without ſoliciting the honour. He died at the houſe of the fathers of the oratory in 1644. As a Latin poet, he ſuſtained the higheſt rank in France, and has been thought, if not ſuperior, equal to any who lived in the two laſt centuries. In his verſes he has combined a conſiderable portion of poetic fire with elevation of ſtyle and ſentiment; and he has been charged with making Lucan and Claudian, rather than Virgil, his models; their manner being probably better adapted to the warmth of his conceptions. His maſter-piece is ſaid to be an "Imprecation againſt the parricide of Henry IV." His poems were printed at Paris in 1651, 12mo. He alſo wrote Greek, as well as Latin verſes, and in the latter language ſome pieces of proſe. His taſte was refined and accurate; and as he was much addicted to the uſe of wine, he expreſſed his contempt of the French poetry, by ſaying, "When I read French verſe, I think I am drinking water." Although he was afraid of ſtarving, 15,000 livres were found in his ſtrong box at his death. Bourbon publiſhed an edition of St. Cyril's work againſt the emperor Julian, with a Latin tranſlation. Nouv. Dict. Hiſt.

BOURBON, *iſle of*, in *Geography*, lately called *Iſle de la Reunion*, an iſland of the Indian ocean, about 370 miles diſtant from the coaſt of Madagaſcar to the eaſt, and at the diſtance of about 90 miles to the weſt of the iſle of France, was firſt diſcovered by the Portugueſe, in 1545, who called it *Maſcarenhas*, after the name of the commander of their fleet; and this appellation was afterwards corrupted into *Maſcaraigne*. In 1642, Pronis, the commandant at Madagaſcar, took poſſeſſion of the iſland for the French government; and ſeven years after, ſays La Barthe, in his "Annales maritimes et coloniales," but, according to others, in 1654, the new commandant, M. de Flancourt, took poſſeſſion of it again in the name of his ſovereign, and gave it the name of *Bourbon*. He introduced into it domeſtic animals, which multiplied conſiderably; and, on account of its fertility, ſeveral Frenchmen formed in it ſettlements. In 1665, two ſhips of De la Haire's ſquadron arrived here, and left Renaud, an "officer d'adminiſtration," together with 20 labourers. The French, who, in 1671, eſcaped the maſſacre at Fort Dauphin, in Madagaſcar, fled to this iſland; and various ſea-faring perſons ſettled in it, and employed themſelves in agriculture. From the iſle of France to this iſland, the paſſage may be performed in a day, but the return often requires a month. It is about 40 miles in length, and 30 in breadth. The ſhores are exceedingly ſteep, and cannot be approached except by ſmall veſſels, without danger. On this account it has few ports; but round the iſland there are ſeveral good roads where ſhips may ride ſecurely. The ſoil is more ſandy than that of the iſle of France; and at ſome diſtance from the ſhore it is mixed with thoſe ſmooth ſtones, which cover the bottom of the ſea. In thoſe parts, however, which admit of cultivation, the ground is excellent, and well watered by various ſtreams that are ſupplied in ſummer by the melting ſnow, which in winter covers the tops of the mountains. The ſoil, thus manured, though not deep, is very fertile, and produces Turkey corn and rice, twice a year, and of the latter a great abundance. The mountains are very high; and the three inacceſſible peaks, called the "Salaſſes," are ſaid to be 1600 toiſes. In the ſouthern part of the iſland there is a tremendous volcano, the diſtrict round which, called "pays brulé," is entirely burnt up; and there are many gulleys, the declivities of which are ſo ſteep that they cannot be cultivated. The iſland is divided into four quarters. The firſt is that of St. Paul, which is the largeſt and moſt populous. Their houſes are built at the foot of a ſteep mountain, on both ſides of a freſh water lake. Their plantations are on the top of a mountain, which they aſcend by a very ſteep and toilſome paſſage. On the ſummit, however, is a ſpacious plain, divided for the moſt part into plantations of rice, tobacco, corn, ſugar canes, and fruit-trees. The ſea at the port of St. Paul is calmer, and the anchoring ground more ſecure than at St. Dennis; nevertheleſs, mariners prefer the latter. The quarter of St. Dennis lies 15 miles from that of St. Paul towards the eaſt; and here the governor reſides. This diſtrict is more pleaſant, though leſs populous, than the other. The chief port in the iſland is that of St. Dennis, where a draw-bridge, ſecured by iron chains, has been conſtructed for the purpoſe of enabling boats to land. This bridge extends more than 80 feet into the ſea, and at the end of it is a ladder of ropes by which people who wiſh to go on ſhore muſt aſcend; in all other parts of the iſland they muſt jump into the water. At two leagues from St. Dennis, proceeding along the ſea-coaſt, is the quarter of St. Mary's, which is thinly peopled. The laſt and moſt fruitful diſtrict of the iſland is that of St. Suſanne, four leagues from St. Dennis; the paſſage from one to the other having been with great labour cut through a wood; but the paſſage from St. Dennis to St. Paul is only by ſea.

The ſky in this iſland is ſerene, the atmoſphere pure, and the water ſalubrious. Although the climate is hot, the breezes from the mountains are refreſhing; and the hurricanes, which commonly occur once or twice every year, contribute to purify the air, and to preſerve its ſalubrity. The iſland, which the French found at their ſettlement almoſt a deſert, abounds in fruit, graſs, and cattle of various kinds; the wild goats and wild hogs have retired to the woods and ſummits of the mountains; the land tortoiſes were formerly abundant, but are now found only in the weſtern part, thoſe of the other parts having been exterminated by the crews of ſhips that have touched upon the iſland. The rabbits, quails, partridges, and pintadoes, brought to the iſland, have none of them increaſed, except the laſt. It is ſaid that no venomous animals are found in this iſland; nor any diſagreeable to the ſight, except ſpiders, of the ſize of a pigeon's egg, which weave very ſtrong nets, capable, as ſome ſay, of being rendered as valuable as ſilk, and a kind of large bats, denominated "l'oiſeau bleu," which are ſkinned and eaten as a great delicacy. The rivers are well ſtocked with various ſorts of fiſh. Among the vegetable productions we may reckon tobacco, ſugar-canes, ebony, benzoin, aloes, white pepper, the cotton ſhrub, abundance of timber fit for ſhip-building; and ſeveral kinds of fruits, ſuch as the guavas, bananas, citrons, tamarinds, lemons and oranges. On the ſhores are found ambergriſe, coral, and many beautiful ſhells.

In the year 1717, the number of inhabitants in this iſland was computed at 2000, viz. 900 free, and 1100 ſlaves; and with regard to their diſpoſition, they are, generally ſpeaking, gentle and quiet, very induſtrious, and ſubmiſſive to juſt and mild authority; but when it is otherwiſe exerciſed, apt to aſſociate and unite in rebellion. In 1763, the population amounted to 4627 white people, and 15,149 blacks; the cattle conſiſted of 8702 beeves, 4084 ſheep, 7405 goats, and 7619 hogs. Upon an extent of 125,909 acres of cultivated land, they gathered as much caſſava as would feed their ſlaves, 1,135,000 pounds weight of corn, 844,100 pounds of rice, 2,879,100 pounds of maize, and 2,535,100 pounds of coffee, which laſt the company bought up at about 3d. per pound. Labarthe ſays, this iſland produces annually 52,700 weight of corn, 54,300 of maize, and three millions of pounds of coffee. Ever ſince the French India company became eſtabliſhed poſſeſſors of this iſland, they have directed their attention to the improvement of its cultivation; and with this view, they imported into it coffee-trees from Arabia, which have ſucceeded ſo well, as to produce an eighth, and according to ſome, a ſixth part as much coffee as is raiſed in the Arabian kingdom of Yemen, and next to that in quality. The French have alſo erected forts and batteries, ſo as to render the iſland almoſt inacceſſible. When admiral Boſcawen appeared before this iſland with a Britiſh fleet in 1748, he found it ſo well fortified both by nature and art, that, after ſome ineffectual cannonading, he was obliged to purſue his voyage. S. lat. 20° 51′ 43″. E. long. 55° 30′; which is the longitude of the port of St. Dennis, according to the Connoiſſance des Temps, an. viii.

Bourbon, a ſmall iſland of Africa, near the coaſt of Senegal. N. lat. 11°. W. long. 15°.

Bourbon, a county of America, laid out and organized in 1785, by the ſtate of Georgia, in the S.W. corner of the ſtate, on the Miſſiſſippi, including the Natchez country. Having continued under the juriſdiction of the Spaniards ever ſince their conqueſt of this part of the country in 1780, it was given up to the United States by the treaty of 1795.

Bourbon is alſo a county of Kentucky, between Licking and Kentucky rivers, containing 12,356 inhabitants, of whom 1994 are ſlaves. The land produces wheat, about thirty or thirty-five buſhels per acre. The chief town in Paris.

Bourbon, a poſt town, and capital of the county laſt named, ſtands on a point of land formed by two of the ſouthern branches of Licking river; 22 miles N. E. of Lexington, 21 E. of Lebanon, and 749 W. S. W. of Philadelphia. It contains about 60 houſes, a baptiſt church, a court-houſe, and gaol. In its neighbourhood are ſeveral valuable mills.

Bourbon, *Fort*, lies in the iſland of Martinico, in the Weſt Indies.—Alſo, the name given by the French to a principal port in North America, ſituate on a ſmall iſland which divides it from Mud-lake; which ſee.

Bourbon *l'Archambaud*, a town of France, in the department of the Allier, which gave name to a country and to the houſe of Bourbon; celebrated for its hot medicinal waters and baths. It contains two hoſpitals and about 2000 inhabitants; 4 leagues W. of Moulins. N. lat. 46° 35′ 22″. E. long. 2° 57′ 39″.

Bourbon *Lancy*, a town of France, and principal place of a diſtrict, in the department of the Saone and Loire, celebrated for its mineral ſprings. It contains three pariſhes and two hoſpitals. Its large bath, encompaſſed with circular walls, and paved with marble, is a work of the Romans; 9½ leagues S. W. of Autun. N. lat. 46° 37′. E. long. 3° 40′ 42″.

BOURBONNE *les Bains*, a town of France, in the department of the Upper Marne, and chief place of a canton, in the diſtrict of Langres; the place contains 3136 inhabitants, and the canton 11,978; the territory comprehends 202½ kiliometres, and 16 communes. It takes its name from its hot baths; 6 leagues E.N.E. of Langres.

BOURBONNOIS, a province of France before the revolution, now the department of Allier, bounded on the eaſt by Burgundy, on the north and weſt by Nivernois and Berry, and on the ſouth by Auvergne; its climate is very temperate, and it produces in great abundance corn, hemp, fruit, wine, paſture, and wood; it has alſo ſome mines of coal, and medicinal ſprings. Its capital is Moulins. This province was erected into a duchy of France by Philip de Valois in 1329, in favour of Louis, ſon of Robert, the youngeſt ſon of St. Louis. This duke had two ſons, Peter and James; from the latter of whom deſcended the houſe of Bourbon, which was the reigning family in France.

BOURBOURG, a town of France, in the department of the North, and chief place of a canton, in the diſtrict of Bergues, ſeated on a navigable canal which communicates with Calais, St. Omer, Dunkirk, Gravelines, &c.; 3 leagues S. W. of Dunkirk, and 1 S. E. of Gravelines. The town contains 1966, and the canton 9456 inhabitants; the territory comprehends 160 kiliometres and 13 communes.

BOURBRIAC, a town of France, in the department of the North coaſt, and chief place of a canton, in the diſtrict of Guingamp; 5 miles S. of Guingamp. The town contains 2977, and the canton 7646 inhabitants: the territory includes 180 kiliometres and 7 communes.

BOURCHET, a town of the duchy of Luxemburg; 4 miles N. W. of Dicrich.

BOURCHIER, Bowschyre, or Bowcer, Thomas, in *Biography*, archbiſhop of Canterbury in the ſucceſſive reigns of Henry VI., Edward IV., Edward V., Richard III., and Henry VII., has no particular claim to notice, otherwiſe, than as he was the principal inſtrument in introducing the art of printing into England. By deſcent, he was related to the nobleſt families in England, being the ſon of William Bourchier earl of Eure in Normandy, and by his mother, the counteſs of Strafford, great grandſon to Edward III. He was born at Hawſted in Eſſex, one of the family ſeats of the Bouchiers or Bourgchiers, educated at Oxford, and held the office of chancellor of that univerſity, from 1433 to 1437. After ſeveral inferior preferments in the church, he was elected biſhop of Worceſter, in the former of theſe years; inveſted by the king, with the temporalities of this ſee in 1435, and conſecrated in 1436; his age not allowing of its being done ſooner. In 1454, he was elected archbiſhop of Canterbury, and preſided over the church during 32 years, in the moſt diſtracted period of the Engliſh government. He enjoyed the prelacy 51 years from the time of his firſt conſecration; an honour of longer duration than any which occurs in the Engliſh hiſtory, if we except the caſe of biſhop Hough, who was biſhop for almoſt 53 years. He was promoted to the office of lord high chancellor of England in 1455, and reſigned it, according to Rymer, in the following year, but according to Dugdale, in 1457. In 1464, he received the red hat from Rome, being created cardinal-prieſt of "St. Cyriacus in Thermis." Soon after his advancement to the ſee of Canterbury, he viſited his dioceſe, and inſtituted ſeveral regulations for its government; and he likewiſe publiſhed a variety of conſtitutions for the reformation of the clergy and laity, and for reſtraining the exceſſive abuſe of papal proviſions. Among his benefactions, it is recorded, that he gave to the prior and convent of Chriſt-church in Canterbury, the alien priory of Cranfield in Eſſex, the grant of which he had obtained from the crown, in the time of Edward IV.; to the church of Canterbury, he gave a fine image of the Trinity, of ſolid gold, adorned with precious ſtones, and a complete ſet of ſacerdotal veſtments; to his ſucceſſor, he left 2000l. in recompence for dilapidations; to the church of Worceſter, he gave an image of the Virgin Mary, of gilt ſilver, eſtimated at the value of 69l.; to the church of Ely, 200 marks for repairing the ſteeple; and to each of the univerſities, he bequeathed about 125l., which he ordered to be kept in cheſts, for the ſupport of poor ſcholars. The cheſt at Cambridge, which was united with Billingford's, ſubſiſted in 1601, when 100l. was borrowed out of it, for the uſe of the univerſity; but this fund was afterwards embezzled, through the iniquity of the times. The archbiſhop alſo left legacies to ſeveral monaſteries. Bourchier had the honour of performing the marriage ceremony between Henry VII. and the daughter of Edward IV. Thus, as Dr. Fuller obſerves, "his hand firſt held that ſweet poſie, wherein the white and red roſes were tied together." He died at his palace of Knowle in 1486, and was buried on the north ſide of the choir, by the high altar, in a tomb of marble, round the verge of which is an inſcription in old text characters. To the learning of this prelate, the teſtimonies are very equivocal; no record of it remaining, if we except ſome ſynodical decrees, an inquiry into hereſies, and a few letters, inſtructions, and addreſſes to his clergy, which appear to have been merely official. The act that does the greateſt honour to his memory, and indeed the only one that claims our particular notice, was his introduction of the art of printing into England. Having been informed, that the inventor, Toſſan, *alias* John Guthenberg, had ſet up a preſs at Haerlem, he perſuaded king Henry VI. to commiſſion Robert Tournour, a gentleman of his wardrobe, to go over privately to Haerlem. This perſon was furniſhed with 1000 marks, of which the archbiſhop contributed 300, and accompanied by Caxton, a merchant of London, embarked for Holland. Concealing both his name and buſineſs, he went firſt to Amſterdam, then to Leyden, and at laſt ſettled at Haerlem. After ſpending much time and money, he at length perſuaded Frederic Corſelli, one of the compoſitors, to carry off a ſet of letters, and to embark with him in the night for London. Upon their arrival, Corſelli was ſent down to Oxford, and ſecured from eſcaping, before the ſecret was thoroughly divulged, by ſetting a guard upon the preſs. Thus, it is ſaid, the myſtery of printing appeared ten years ſooner in the univerſity of Oxford, than at any other place in Europe, Haerlem and Mentz excepted. Not long after, preſſes were ſet up at Weſtminſter, St. Alban's, Worceſter, and other monaſteries of note. If this account be juſt, printing was introduced into England, by the care of archbiſhop Bourchier, in 1464, the third year of king Edward IV. See PRINTING. Biog. Brit.

BOURDALOUE, LEWIS, a celebrated preacher and reformer of pulpit eloquence in France, was born at Bourges in 1632, and entered at an early age into the ſociety of Jeſuits. Having diſtinguiſhed himſelf by his proficiency in the ſtudies immediately connected with his profeſſion, and more particularly by his talents for the pulpit, the ſociety determined to aſſign him the office of a preacher. The reputation which he acquired in the country induced his ſuperiors to ſend for him to Paris in 1669, where his fame increaſed, and recommended him to the court, ſo that he preached before Louis XIV., in the advent of 1670. He continued, for many years, the favourite preacher of the king, though he occaſionally animadverted on his perſonal faults. Upon the revocation of the edict of Nantes, he was appointed by the court to preach the catholic doctrine to the new converts in Languedoc. His talents were peculiarly adapted to this miſſion, as he was ſerious and impreſſive, and, at the ſame time, mild and inſinuating, and capable of accommodating his addreſſes to perſons of every rank and condition. With reſpect to the ſtyle of his eloquence, M. d'Alembert, in his "Eloge de Maſſillon," repreſents it as ſolid and ſerious, and, above all, ſtrictly logical. Compared with Maſſillon, he is ſaid to have been the beſt reaſoner, and the latter the moſt pathetic. It redounded much to the honour of Bourdaloue, that he had, in a great degree, the merit of an original; the pulpit, when he appeared, "rivalling the theatre in buffoonery, and the ſchools in dryneſs." Towards the cloſe of his life, he devoted himſelf to the ſervice of the hoſpitals, the priſons, and the poor, and to other offices of charity. His conduct, which was exempt from that laxity of morals that was charged on his fraternity, afforded the beſt refutation of the "Provincial Letters." He died in the midſt of his pious and benevolent labours, in 1704. His diſcourſes and other religious tracts have been publiſhed in two editions, one of 16 vols. 8vo. and the other of 18 vols. 12mo. The firſt is the moſt eſteemed. Nouv. Dict. Hiſt.

BOURDEAUX, or BORDEAUX, in *Geography*, a city and ſea-port of France, and capital of the department of the Gironde, including 6 cantons, which contain 112,844 inhabitants, and comprehending 92½ kiliometres, and one commune. Bourdeaux is ſeated on the weſt bank of the river Garonne, about 40 miles from its mouth; and, before the revolution, it was the capital of the province of Guyenne, and one of the moſt proſperous and flouriſhing cities of France, but, in conſequence of that event, its commerce has ſuffered much injury. The tide flows quite up to the city; its port is ample and commodious, and ſhips of conſiderable burden may load and unload at its quays. It was not unuſual to ſee 400 or 500 veſſels in the harbour at the ſame time. Its traffic with the Weſt Indies conſiſted of ſugar, cotton, indigo, and other merchandizes; its chief exports were wine and brandy, and particularly the vin de Bordeaux, which we denominate claret; together with vinegar, fruit, reſin, paper, honey, cork, &c.; and its imports were woollen ſtuffs, tin, copper, coals, herrings, leather, ſalted beef, tallow, drugs, deals, maſts for ſhips, hemp, pitch and tar. The whale and cod fiſhery, likewiſe, formed a conſiderable branch of the commerce of this city. It had 3 forts, the principal of which is that called "Trompette," fortified by M. de Vauban, and commanding the harbour. The figure of this city is a kind of half moon; and it conſiſts of 3 fauxbourgs, viz. that of "Chapeaux-rouge," that of "St. Surin," and that of "Chartrons," which laſt is remarkable for its extent, and the beauty of its buildings. Its univerſity was founded in 1441; its academy of ſciences and belles lettres was eſtabliſhed in 1712, to which belongs a large library; its cathedral is an immenſe Gothic ſtructure; and its hoſpital, built without the walls, accommodates a variety of manufactures. The "Placé royale," in the fauxbourg of "Chapeaux-rouge," is adorned with ſeveral magnificent buildings, and an equeſtrian ſtatue of Louis XV. in bronze, erected in 1743. Its theatre is the moſt magnificent in France, and the actors uſed to receive extravagant ſalaries; and as much as London exceeds Paris, ſo much did Bourdeaux, before the revolution, tranſcend Liverpool. This city has many veſtiges of Roman art and grandeur; ſuch as the tower-gate, ſaid to have been conſtructed in the time of Auguſtus; the amphitheatre, which formed an oval of 227 feet long and 140 feet wide; the palace of Gallienus, of which remain only ſome walls, and the 2 gates at the entrance; a temple conſecrated to the tutelary deities, whoſe columns ſurpaſſed in elevation the fineſt buildings of the city, and which ſubſiſted almoſt entire, till the year 1700, when Louis XIV. demoliſhed it, in order to extend the eſplanade of the Trompette caſtle; the fountain of Aubege, celebrated by Auſonius, and furniſhing the city with water, &c. The temperature of Bourdeaux, upon a mean of 5 years, from 1777 to 1781, was 56.8°; and the ſtandard temperature of this latitude is 57.6°. See Kirwan's eſtimate, &c. p. 87. N. lat. 44° 50′ 18″. W. long. 0° 34′ 49″.

BOURDEAUX, a town of France, in the department of the Drome, and chief place of a canton, in the diſtrict of Die; the town contains 1181, and the canton 3885 inhabitants. The territory comprehends 132½ kiliometres, and 9 communes.

BOURDEILLE, a town of France, in the department of the Dordogne, 3½ leagues N. W. of Perigueux.

BOURDEILLES, PETER DE, in *Biography*, more generally known by the name of *Brantome*, of which he was abbot, was born of an ancient family of Guyenne, in 1527. From his early youth, he devoted himſelf to the ſervile offices of a courtier, without deriving any ſubſtantial advantage from the character he aſſumed, and the adventures in which he was engaged. Although he obtained the honorary diſtinctions of knight of the order of Malta, gentleman of the chamber to the kings, Charles IX. and Henry III., chamberlain to the duke of Alençon, and baron of Richemont in Perigord, he complains of indigence at the approach of old age. He died in 1614, at the age of 87. His memoirs, which have furniſhed anecdotes and biographical narrations, relative to the time in which he lived, were printed in 10 vols. 12mo.; and the laſt edition at the Hague in 1741, to which is annexed a ſupplement, is extended to 15 volumes. Theſe memoirs abound with indecencies and contradictions; and though the anecdotes he has recorded throw conſiderable light on the biography and hiſtory of the times, his own opinions and obſervations are entitled to little deference. Brantome, however, is an amuſing writer, and his memoirs have had many readers. Nouv. Dict. Hiſt.

BOURDEILLES, CLAUDE DE, the nephew of the preceding, and comte de Montreſor, attached himſelf to Gaſton of Orleans, both whilſt he was in favour, and when he loſt it; but at length, being diſguſted with the tumult and artifices of the court, he withdrew in order to enjoy the ſweets of retirement. He died at Paris in 1663. His memoirs, under the name of Montreſor, in 2 vols. 12mo. contain ſeveral curious particulars, relating to the hiſtory of his time. He divulges, without ſcruple, the projects he formed againſt the life of cardinal Richelieu.

BOURDELIN, CLAUDE, born at Villa-francha, near Lyons, in 1621, applied early to the ſtudy of pharmacy and chemiſtry, in which he acquired conſiderable reputation. When the royal academy of ſciences was formed in 1666, under the auſpices of Monſ. Colbert, he was appointed to ſuperintend the chemical department, and, in conjunction with Duclos, made analyſes of the principal mineral waters in France. He alſo furniſhed the academy with the analyſes of numerous other natural bodies, and contrived, or executed the greater part of the chemical experiments, made in the laboratory of the academy, for the ſpace of 23 years. He died in 1699, and was ſucceeded in his appointment by Monſ. Lemery. Haller. Bib. Botan. Eloy. Dict. Hiſt.

BOURDELOIS, in *Geography*, was, before the revolution, the name of a country of France in the province of Guyenne, in the environs of Bourdeaux; bounded on the eaſt by Agenois and Perigord, on the ſouth by Gaſcony, on the weſt by the ſea, and on the north by Saintonge.

BOURDELOT, JOHN, in *Biography*, a learned French critic, lived towards the cloſe of the 16th, and commencement of the 17th century. Having applied from his youth, to the ſtudy of the belles lettres and learned languages, he acquired the reputation, according to Baillet, of being a connoiſſeur in the oriental tongues, and in the knowledge of MSS. He was alſo well ſkilled in the law, and became an advocate to the parliament of Paris in 1627, and was appointed, on account of his merit, maſter of requeſts by Mary of Medicis. He died ſuddenly at Paris in 1638. His notes and emendations upon Lucian were publiſhed at Paris in 1615, fol.; his Heliodorus, with notes, in 1619, 8vo.; and his Petronius, alſo with notes, at Amſterdam in 1663, 12mo. He wrote alſo, according to Moreri, an "Univerſal hiſtory;" "Commentaries on Juvenal," and many other works which were never publiſhed. The abbé Bourdelot, his ſiſter's ſon, who changed his name from Peter Michon, in compliment to his uncle, was a celebrated phyſician at Paris, who gained great reputation by a treatiſe upon the viper, and ſeveral other works. He died there in 1685, at the age of 76. Biog. Dict.

BOURDIN, in *Conchology*, the vulgar French name of a ſpecies of the HALIOTIS genus, found upon the rocks on the coaſt of France, and in the Mediterranean, the animal of which is eaten. The ſort of Haliotis, generally called Bourdin, is the H. *tuberculata*; but the ſpecies *ſtriata* alſo bears the ſame name. Bellonius gave the title of BOURDIN to the whole tribe of thoſe ſhells called the ſea ears, auris marina, &c. See HALIOTIS.

BOURDON, in *Entomology*, the trivial French name of the male inſect of the common honey bee, *Apis mellifica*. But, among the naturaliſts of France, it is applied, in a more eſpecial manner, as a generical title to that family of the bee tribe which Linnæus calls *Apes bombinatrices hirſutiſſimæ*. Theſe are called alſo *Bourdons velus*, or hairy bees, in common. See APIS, BEE, BEE, *wild*, and HUMBLE-*bee*.

BOURDON, SEBASTIAN, in *Biography*, an eminent painter and engraver, was born at Montpellier in 1616, and received the firſt rudiments of his art from his father, who was a painter on glaſs. He afterwards ſtudied at Paris, under an artiſt of no great note, and at the age of 18 years went to Italy, where he very ſucceſsfully imitated the ſtyle of different maſters, as Claude Lorraine, Andrea Sacchi, Correggio, and Bamboccio. After his return into his own country, he painted, at the age of 27, his moſt famous picture, "The crucifixion of St. Peter, in the church of Notre Dame at Paris." But being by religious profeſſion a Calviniſt, he was interrupted in the exerciſe of his profeſſion by the civil wars; and therefore, in 1652, he removed to Sweden, where queen Chriſtina made him her firſt painter. Here he had an opportunity of exhibiting a ſingular diſplay of his diſintereſtedneſs. Guſtavus Adolphus, the father of Chriſtina, had brought ſome pictures from the pillage of Prague, which had never been unpacked. Chriſtina employed Bourdon to examine theſe; and upon his making a favourable report of them, eſpecially thoſe of Correggio, the queen preſented him with the whole collection. Bourdon declined accepting them, and informed the queen, that they were ſome of the fineſt pieces in Europe, and that ſhe ought not to part with them; accordingly Chriſtina, after her abdication, took them with her to Rome, and made them the baſis of a collection, which afterwards came into the poſſeſſion of the regent duke of Orleans.

After Chriſtina's abdication, Bourdon returned to France, and purſued the exerciſe of his profeſſion with uncommon aſſiduity; confining himſelf frequently to his garret, which was his painting-room, for a month together. He painted in a great variety of ſtyles, and ſucceeded in all; hiſtory, portrait, landſcape, paſtoral, and groteſque. His chief faults, ſays Mr. Strutt, are want of force in the colouring, though others aſcribe to it great force and effect, and of correctneſs in the outline; but theſe were amply overbalanced by the beauties of his compoſition, the lively fertility of his imagination, the animation of his expreſſions, and the variety and gracefulneſs of his attitudes. His virgins in particular are much eſteemed; and the beſt of his pieces are thoſe that are the leaſt finiſhed. Bourdon was one of the twelve perſons who, in 1648, commenced the eſtabliſhment of the Royal Academy, of which he became director. A violent fever terminated his life in 1671, much to the regret of all who highly reſpected his character as well as genius. Some of his daughters painted in miniature, and ſome of his ſcholars became eminent. His principal works are in the churches at Paris, in the gallery of the hôtel de Bretonville, at Verſailles, Montpellier, and Toulouſe. His etchings, which are numerous, are executed in a bold, maſterly ſtyle; and convey a clear idea of his manner of painting. The lights are broad, the draperies are formed with great taſte, and the folds well marked, though ſometimes too dark and hard upon the lights; the heads are very expreſſive; the back-grounds are finely conceived, and executed in a grand ſtyle. This maſter's etchings are held in the higheſt eſtimation, of which ſome of the principal from his own compoſitions are the following; viz. the "Seven acts of mercy;" the "Flight into Egypt." and the "Return from thence;" ſeveral ſubjects of the "Virgin and child;" in one of which is ſeen a woman waſhing linen, hence diſtinguiſhed by the name of the waſher-woman; the "Return of the ark," ſaid to be very ſcarce; the "Baptiſm of the eunuch;" "Twelve large landſcapes," very ſpirited and fine prints. D'Argenville. Pilkington. Strutt.

Bourdon, Amelot, a phyſician of Cambray, publiſhed, towards the end of the 17th century, "Nouvelles tables anatomiques, ou ſont repreſentées toutes les parties du corps humain," large folio, Paris, 1678. Some of the tables are by the author; more from Veſalius. The plates repreſenting the nerves are from Willis. "Nouvelle deſcription anatomique de toutes les parties du corps humain, et de leur uſages," Paris, 1679 and 1683, 12mo. No memorials of the life of this writer are known. Hall. Bib. Med. Eloy. Dict. Hiſt.

BOURDONNAY, in *Geography*, a town of France, in the department of the Meurthe, and chief place of a canton, in the diſtrict of Chateau-Salins; 4 leagues N.E. of Luneville.

BOURDONNE', in *Heraldry*, is underſtood of a croſs, whoſe extremities are turned round like the ends of a pilgrim's ſtaff; more frequently called *pommete, globatus*.

BOURDONNEUR, or L'Oiseau Bourdonnant, in *Ornithology*, the ſame as *Oiſeaux mouches* and *colibris*, among French naturaliſts. The birds are ſo named, becauſe, when flying, they make a ſtrange kind of noiſe with the rapid motion of their wings, the ſound of which Marcgrave compares to that of a ſpinning-wheel.

BOURDOUR, in *Geography*, a town of Aſiatic Turkey, in the province of Caramania; 98 miles S.W. of Cogni.

BOUREAU, in *Ichthyology*. The Linnæan *Trigla lyra*, is ſo named by the inhabitants in the neighbourhood of Bayonne.

BOURETOUTE, in *Geography*, a town of France, in the department of the Lower Seine; 8 leagues N.N.W. of Rouen.

BOURG, a town of the iſland of Cayenne, in South America.

Bourg, or *Bourg en Breſſe*, a city of France, and capital of the department of Ain, ſeated on the Reſſouze, in a country ſomewhat marſhy, but fertile. The principal commerce conſiſts of corn, horſes, cattle, and white leather. The town contains 6984, and the canton 14,739 inhabitants; the territory includes 297½ kiliometres, and 13 communes. Bourg is diſtant 93 leagues S.E. from Paris. N. lat. 46° 12′ 3″, E. long. 5° 8′.

Bourg, or *Bourg-ſur-Gironde*, a town of France, in the department of the Gironde, and chief place of a canton, in the diſtrict of Blaye, ſeated on the Gironde; 4 leagues N. of Bourdeaux. It has a good harbour, about half a league from the confluence of the Dordogne with the Garonne, and carries on a conſiderable trade in wine. The town contains 2704, and the canton 13,286 inhabitants; the territory includes 132½ kiliometres, and 19 communes. N. lat. 45° 4′. W. long. 0° 45′.

Bourg, *Le*, a town of France, in the department of the Lower Loire; 7 leagues W. of Nantes.—Alſo, a town of France, in the department of the Charente, ſituate on the ſouth ſide of the Charente, oppoſite Jarnac, and 5 miles E. of Cognac.

Bourg, *Saint Andéol*, a town of France, in the department of the Ardeche, and chief place of a canton, in the diſtrict of Privas, and 7 leagues S.S.E. of it. The town contains 3964, and the canton 9492 inhabitants; the territory includes 282½ kiliometres, and 9 communes.

Bourg-*Argental*, a town of France, in the department of the Loire, and chief place of a canton, in the diſtrict of St. Etienne, and 4 leagues S.E. from it. The town contains 1068, and the canton 6034 inhabitants; and the territory includes 150 kiliometres, and 9 communes.

Bourg *d' Ault*, a town of France, on the ſea-coaſt, in the department of the Somme; 1 league N. of Eure.

Bourg *des Comtes*, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Redon; 3½ leagues S. of Rennes.

Bourg *Dieu*, a town of France, in the department of the Indre, and chief place of a canton, in the diſtrict of Chateauroux, and 1 mile N. of it.

Bourg *Laſtiq*, a town of France, in the department of Puy-de-Dôme, and chief place of a canton, in the diſtrict of Clermont, and 8 leagues W. S. W. of it. The town contains 2133, and the canton 5787 inhabitants; the extent of the territory comprehends 215 kiliometres, and 10 communes.

Bourg *de Leſtra*, a town of France, in the department of the Ardèche; 6 leagues N. N. W. of Privas.

Bourg-*Maurice*, a town of Savoy, in the department of Mont Blanc, and chief place of a canton, in the diſtrict of Moutiers; the town contains 2166, and the canton 11,578 inhabitants; and the territory includes 967½ kiliometres, and 13 communes.

Bourg *Neuf*, a ſea-port town of France, in the department of the Lower Loire, and chief place of a canton, in the diſtrict of Paimbœuf, ſeated on the Engliſh channel, at the mouth of the Loire, in a bay to which it gives name, between the iſle of Noirmoutier and the continent. It has a ſafe bay and harbour; and trades chiefly in ſalt, made from ſalt marſhes in its vicinity; 6½ leagues S. W. of Nantes, and 2 W. N. W. of Machecoul. It contains 2033 inhabitants, and the population of the canton includes 5501; the territory comprehends 187½ kiliometres and 6 communes.

Bourg *d'Oiſans*, a town of France, in the department of the Iſere, and chief place of a canton, in the diſtrict of Grenoble, and 5 leagues S. E. of it. The town contains 2079, and the canton 12,688 inhabitants; and the territory includes 910 kiliometres, and 21 communes.

Bourg *de Péage*, or *de Valence*, a town of France, in the department of the Drôme, and chief place of a canton, in the diſtrict of Valence, 1 mile N. of it. The town contains 2339, and the canton 15,113 inhabitants; the territory includes 245 kiliometres, and 14 communes.

Bourg *le Reine*, a town of France, and principal place of a diſtrict, in the department of Paris, and 4 miles S. of it.

Bourg *le Roy*, a town of France, in the department of the Sarthe, and chief place of a canton, in the diſtrict of Frenay-le-vic; 2 leagues S. of Alençon.

Bourg-*de-Viza*, a town of France, in the department of the Lot, and chief place of a canton, in the diſtrict of Montauban, 8 miles W. of Lauzerte. The town contains 684, and the canton 7,470 inhabitants; the territory comprehends 130 kiliometres, and 11 communes.

BOURGACHARD, a town of France, in the department of the Eure, and chief place of a canton, in the diſtrict of Pont Audemer, and 4 leagues E. of it.

BOURGANEUF, a town of France, and principal place of a diſtrict, in the department of the Creuſe, 5½ leagues W. of Aubuſſon.

BOURG DUN, Le, a town of France, in the department of the Lower Seine, and chief place of a canton, in the diſtrict of Dieppe, and 3 leagues S. W. of it.

BOURGEOIS, Louisa, alſo called *Bourſier*, in *Biography*, an experienced and intelligent midwife, in great repute, the latter part of the 16th and the beginning of the 17th centuries. Her huſband was an army ſurgeon, as ſhe informs us, and had been educated under Ambroſe Paré; from him ſhe received inſtruction in the more difficult parts of the art, ſo that ſhe was enabled to deliver in ſome caſes, where the aſſiſtance of the ſurgeon was uſually thought neceſſary. In one caſe ſhe extracted a ſtone from the urinary bladder, by means of the forceps. It is no wonder, therefore, that ſhe attained to the height of her profeſſion, and ſhould be employed by the ladies of the higheſt rank, and at length by the queen of France, whom ſhe delivered of ſix children. Her publications are, "Obſervations diverſes ſur la ſterilité perte de fruit, fecondité, accouchmens, et maladies des femmes," Paris, 1608, 8vo. This was followed by a ſecond and a third part, containing together, a collection of uſeful facts and obſervations on every branch of midwifery. "Receuil des ſecrets," &c. 1635, 8vo. containing formulæ for the compoſition of a great variety of medicines, for the cure of diſeaſes incident principally to women and children, in which ſhe appears to have had great faith; alſo for preparing coſmetics, for improving the complexion. "Recit veritable de la naiſance de meſſrs. et dames, les enfans de France," containing a regiſter of the births of the children of the queen, with the circumſtances attending the labours. It appears that the preſent made her on the birth of each of the royal infants was, 500 crowns for a male, and 300 for a female child. She had alſo a penſion of 300 crowns per annum, which ſhe was to enjoy during her life. "Inſtructions a ma fille," Paris, 1642, containing rules for her conduct in practice. Theſe ſeveral treatiſes were collected together and publiſhed in 1652, Paris, 12mo. The volume is decorated with portraits of the queen of France, to whom it was dedicated, and of mad. Bourſier. It is alſo accompanied with copies of verſes to the king's phyſicians, and to mad. B. Haller Bib. Chirurg. Med.

BOURGER Mestres. See Burgher *Maſters*.

BOURGES, in *Geography*, an ancient city of France, formerly called *Avaricum* and *Bituriges*, the capital of the department of the Cher, ſituate at the conflux of the Auron and Eure. Before the revolution it was the ſee of an archbiſhop; its univerſity was founded, in 1466, by Lewis XI., who was born here, and inveſted the town with conſiderable privileges. The college of the Jeſuits was a large and magnificent building. It contained 16 pariſh churches, and many public buildings. The cathedral church is conſidered as one of the moſt beautiful Gothic edifices in Europe. The principal manufactures of this place are linen cloth, woollen ſtuffs, and ſtockings, which are ſold at its annual fairs; excluſively of theſe its commerce is ſmall. The town contains 15,340, and the diſtrict the ſame number of inhabitants; the territory includes 90 kiliometres, and 1 commune. N. lat. 47° 5′ 4″. E. long. 2° 23′ 26″.

BOURGET, a ſmall town of Savoy, ſeated on a lake of the ſame name, about 10 miles long, and from 2 to 3 wide, 6 miles N. of Chamberry. This lake has a fiſh unknown in other countries, called "Lavarette," which weighs four or five pounds, and which is much valued at Chamberry. Near this lake is an irregular reciprocating ſpring, which iſſues from a rock, and is called "La Fontaine de Merveille."

Bourget, *Le*, a town of France, in the department of Paris; 2 leagues N. of it.

BOURGNEUF de la Forest, Le, a town of France, in the department of the Mayenne; 3 leagues N. W. of Laval.

BOURGOGNE, a town of France, in the department of the Marne, and chief place of a canton, in the diſtrict of Reims, and 6 miles N. of it. The town contains 633, and the canton 11,989 inhabitants; the territory includes 275 kiliometres, and 25 communes.

BOURGOING, a town of France, in the department of the Iſere, and chief place of a canton, in the diſtrict of la Tour-du-Pin, and 2 leagues W. of it. The population of the town includes 3595 perſons, and that of the canton 15,021; the territory comprehends 175 kiliometres, and 11 communes.

BOURGTHEROUDE, a town of France, in the department of the Eure, and chief place of a canton, in the diſtrict of Pont-Audemer, and 5 leagues E. of it. The town contains 860, and the canton 11,257 inhabitants; the territory includes 107½ kiliometres, and 24 communes.

BOURGUEBUS, a town of France, in the department of Calvados, and chief place of a canton, in the diſtrict of Caen; containing 405 inhabitants; the population of the canton is 9,391; and the extent of the territory comprehends 147½ kiliometres, and 30 communes.

BOURGUEIL, a town of France, in the department of the Indre and Loire, and chief place of a canton, in the diſtrict of Chinon; 7½ leagues W. of Tours. The town contains 2810, and the canton 14,969 inhabitants; the territory includes 142½ kiliometres, and 7 communes.

BOURGUET, Lewis, in *Biography*, was born at Nimes in 1678, and removing with his family, who were proteſtants, to Swiſſerland, on the revocation of the edict of Nantes, he purſued his ſtudies at Zurich. Here he diſtinguiſhed himſelf by his application to theology, the languages, mathematics, law, antiquities, medals, and more particularly natural hiſtory. His attention was more eſpecially directed to geology, for the cultivation of which his ſituation among the Swiſs mountains was peculiarly favourable. He afterwards ſettled at Neufchatel, and here became profeſſor of philoſophy and mathematics. In 1729 he printed, in French, "Philoſophical letters on the formation of ſalts and cryſtals, and on the generation and organic mechaniſm of plants and animals," &c. 12mo. In the preceding year he had undertaken, with the aſſiſtance of learned colleagues, a periodical work, entitled "Bibliotheque Italique," printed at Geneva, and extended to 16 vols. 8vo. which was eſteemed a judicious and uſeful performance. Bourget had many literary connections, and was a member of ſeveral learned ſocieties. Many of his papers were publiſhed in the "Journal Helvetique." He died in 1742. Moreri.

BOURGUIGNONS. See Burgundians.

BOURGUIGNOTTE, a defenſive weapon wherewith to cover the head; being a kind of caſk, open before, and proof againſt either pike or muſket; its name aroſe from the Bourguignons, who firſt introduced it.

BOURI, in *Ichthyology*, the Arabic name of *Mugil cephalus*, Linn.

BOURIGNON, Antoinette de la Porte, in *Biography*, an enthuſiaſt of a wild imagination and turbulent diſpoſition, was born at Liſle in Flanders in 1616. Under a pretence of a divine inſpiration and commiſſion, ſhe engaged in reviving the true ſpirit of Chriſtianity, which ſhe repreſented as extinguiſhed by theological animoſities and debates. Her own temper, however, was very different from that truly Chriſtian ſpirit which ſhe profeſſed to rouze and reanimate. Adverſe to marriage, though urged to it by her family, which was opulent, ſhe eloped in order to avoid their perſuaſions; and, after a variety of adventures, became governeſs of an hoſpital in her native town, and aſſumed the order and habit of St. Auguſtin. Here, however, her reſtleſs and overbearing temper occaſioned ſuch diſturbances, that, in conſequence of the interference of the magiſtrates, ſhe was obliged to remove to Ghent. One of her converts, named Chriſtian Bartholomew de Cordt, who had been a Janſeniſt and prieſt of the oratory at Mechlin, was owner of part of an iſland in Holſtein, called Noordſtrandt. Of this patron of her fanaticiſm, ſhe bought an eſtate in this iſland, and determined to ſettle there with her diſciples. In the mean while ſhe reſided at Amſterdam, and made many proſelytes. She alſo wrote ſeveral books, and particularly one, entitled, "The Light of the World," in which ſhe profeſſes to explain her myſtical principles. Moſheim ſuggeſts, that an attentive reader of her works will perceive, that her intellect muſt have been in a diſordered ſtate; that moſt of her divine effuſions were borrowed from the productions of the Myſtics; and that, by the intemperance of her imagination, ſhe has given an additional air of abſurdity and extravagance to the tenets which ſhe had derived from thoſe pompous enthuſiaſts. The predominant principle of her works is this: "that the Chriſtian religion conſiſts neither in knowledge nor practice, but in a certain internal feeling and divine impulſe, that ariſes immediately from communion with the Deity." Upon the death of De Cordt, who made this female fanatic his heireſs, ſhe left Holland in 1671, with a view of ſettling at Noordſtrandt; but ſhe diſcouraged many of her diſciples from attending her, under an apprehenſion that their attachment was ſelfiſh, and that they wiſhed to obtain a ſubſiſtence at her expence. She wrote in French, Dutch, and German, with great facility; and printed her numerous works in a preſs, which ſhe had ſet up in her own houſe. Such, however, were both her principles and temper, that they expoſed her to a variety of proſecutions, which diſquieted her mind, and made it neceſſary for her frequently to change her abode. At length ſhe obtained the direction of an hoſpital in Eaſt Frieſland, where her time was devoted to the ſervice of the poor, whilſt ſhe retained her money under a notion, that ſhe could find none that were deſerving objects of her bounty. After a life of viciſſitude and vexation, and ſuffering many inſults on account of her religious fancies, ſhe ended her days at Franeker, in 1680. Whilſt ſhe lived her followers were few in number; but after her death, her writings were the means of multiplying her proſelytes, who were diſtinguiſhed by the appellation of "Bourignoniſts." Amongſt theſe a Carteſian, of a bold and penetrating genius, whoſe name was Peter Poiret, took the lead; and he dreſſed out in an artful manner, and reduced to a kind of ſyſtem, the wild and incoherent fancies of Bourignon, in a large work, entitled, "L'Oeconomie Divine, ou Syſtéme Univerſel," which was publiſhed, both in French and Latin, at Amſterdam, in 1686, in 7 vols. 8vo. In Scotland her notions occaſioned a controverſy, in which Dr. Cockburn diſtinguiſhed himſelf as the opponent of the Bourignoniſts. Gen. Dict. Moſh. Eccl. Hiſt. vol. v. p. 514, &c. 8vo.

BOURMONT, in *Geography*, a town of France, in the department of the Upper Marne, and chief place of a canton, in the diſtrict of Chaumont, and 6 leagues E. N. E. from it, ſeated on a ſteep mountain; the population of the town is eſtimated at 1071, and of the canton at 10,370; the territory includes 272½ kiliometres, and 26 communes. N. lat 48° 12′. E. long. 5° 32′.

BOURN, a market town of Lincolnſhire, in England, ſtands on the ſouthern ſide of the county, near the borders of Rutlandſhire, at the diſtance of 97 miles north from London. Here have been a caſtle and a priory, but both are partly deſtroyed. The outworks, ditches, and ſome fragments of the former are left to commemorate the ſpot; and as the fortified area includes about eight acres of land, we may preſume that it was a place of conſiderable ſtrength and importance. "Very large irregular works," ſays Mr. Gough, "are on the north and weſt ſides between the two ditches; the earth raiſed about 20 yards in length, and 10 in breadth, and a ditch between every one of theſe pointing to the grand moat." Theſe works are ſaid to have been formed by Oliver Cromwell, when he attacked the town. Some of our ancient hiſtorians have ſtated that S. Edmund, king of the Eaſt Angles, was crowned at Bourn; but this is confuted by Mr. Gough, who places the ſcene of that event at Buers in Suffolk; indeed this caſtle does not appear to be connected with any public event till the time of the Daniſh invaſions. Some of theſe marauders having made an inroad into Lincolnſhire, Marcot, lord of Bourn, with his numerous family and attendants trained in arms, and about 250 men from Croyland abbey, marched againſt them, and met them at Laundon, where a deſperate battle enſued, which terminated in favour of Marcot and his party. Bourn, as its name implies, is ſituated in a valley, and has a ſtream running through part of it, which turns three mills, very near its ſource. Here is alſo a medicinal mineral ſpring, the waters of which are rather brackiſh, and are found to be ſerviceable in ſome diſorders. Here are ſome tanneries, and one pariſh church, a chapel, and ſome alms-houſes. The markets are weekly on Saturdays, and here are three annual fairs. Veſſels of about ten tons burthen convey articles of commerce, &c. from this place to Spalding, Boſton, &c. That diſtinguiſhed ſtateſman, Sir W. Cecil, who was created baron Burleigh, by queen Elizabeth, was born here in 1521, and poſſeſſed this manor. At an inn in this town was formerly a curious old portrait of queen Elizabeth, on a pannel. The town-hall was built by the above nobleman. The townſhip contains 282 houſes, and 1474 inhabitants.

At Stanefield, a village a little to the north, is a chalybeate ſpring, and, according to Dr. Stukeley, many Roman coins have been found here. About four miles hence is Grimſthorpe, a ſeat belonging to the Duke of Ancaſter. The houſe, a magnificent ſtructure, ſtands on a hill in the midſt of a large park, which, with its fine woods, and large piece of water, conſtitute many grand and beautiful ſcenes. “ Grimſthorpe,” ſays Fuller, “ I may call an extempore ſtructure, got up on a ſudden by Charles Brandon, duke of Suffolk, to entertain king Henry VIII. in his progreſs into theſe parts.” Since the period of Fuller's writing, this houſe has undergone many improving alterations, and is now finiſhed and fitted up in an elegant ſtyle. Gough's edition of Cambden's Britannia, vol. ii. Fuller's Church Hiſtory of England.

BOURNASEL, a town of France, in the department of the Aveyron, 4½ leagues N. W. of Rhodez.

BOURNEVILLE, a town of France, in the department of the Eure; 2 leagues N.W. of Pont Audemer.

BOURNEZEAU, a town of France, in the department of the Vendée; 5 leagues N.W. of Fontenay le Comte.

BOURNIQUEL, a town of France, in the department of the Lot, and chief place of a canton, in the diſtrict of Montauban, ſeated on the ſouth ſide of the Aveyron; 13 miles E. N. E. of Montauban.

BOURNOU. See Bornou.

Bournou, *Great* and *Little*, two capes at the commencement of the road in the gulf of Salonica. This road, which terminates at a ſhoal, which is ſituated at the head of the gulf, affords good anchorage to ſhips of every ſize, and a ſafe retreat to fleets.

BOURO, one of the Moluccas, or Spice iſlands, in the Eaſt Indies, lying between Ceram on the eaſt, and Celebes on the weſt; its ſhape is oval, the longeſt diameter extending eaſt and weſt; about 90 miles in length by 50 in breadth. This iſle was nominally ſubject to the king of Ternat; but in 1660 the Dutch built a fort in the bay of Cagele, or Cayeli, at the north-eaſt end of the iſland, where the natives, who profeſs the Mahometan religion, have a moſque, whoſe roofs, gradually ariſing in a regular gradation one above another, preſent a very agreeable appearance; and though they burned the exterior woods, they ſeem to have improved the induſtry of the inhabitants. This iſland riſes ſuddenly from a deep ſea, being encompaſſed as with a wall. Part of its northern coaſt is inhabited by a people who are ſubjects of the Dutch company, and are governed by their “ Oran-cayôs,” who have each a “ dap,” or deputy under them. The interior parts, which conſiſt of mountains ſo lofty, that they may be ſometimes deſcried at the diſtance of 28 leagues, are the haunts of the “ Alforeſe,” or wild mountaineers. The ſouth coaſt is now deſerted, on account of the continual invaſions of the Papuas. The coaſt, to the eaſt of the village of Cayeli, is watered by a number of ſmall ſtreams; but to the north-weſt there is a very conſiderable river, called by the natives “ Aer-Beſſar,” which diſcharges itſelf into the road-ſtead. This river is very deep, and for ſome diſtance from its mouth more than 70 feet broad. On its borders is found the beautiful ſhrub, known by the name of “ Portlandia grandiflora.” The pebbles rolled from the mountains by the rivulets are fragments of “quartz,” mixed with mica. Birds, eſpecially parrots, are ſo numerous, that the iſland probably derives from this circumſtance its name, which ſignifies in the Malayan language, a bird. The woods afford abundance of deer, goats, and wild boars. The civet weaſel is found in this iſland, and the curious hog called babirouſſa. A green ebony, and a kind of iron-wood, are mentioned among the trees, and ſeveral other kinds of wood, proper for inlaid work, much valued by the Chineſe, and others uſeful for dyeing; and it is not improbable that the clove, and perhaps the nutmeg, defy, in the receſſes of the mountains, the wild avarice of man. The ſago tree grows here in great abundance, ſupplying the inhabitants with the principal means of their ſubſiſtence, as well as an article of exportation. The “ Cayou pouti,” of the Malays (*Melaleuca latifolia*) grows in great abundance upon the hills; and from this is obtained, by diſtillation, a great quantity of the oil of cajeput. According to aſtronomical obſervations, made by thoſe who purſued the voyage in ſearch of la Pérouſe, at the village of Cayeli, its latitude was 3° 21′ 54″ S. and longitude 127° 21′ 6″ E. The dip of the magnetic needle was 20° 30′. Its variation, obſerved on board, was 0° 54′ E. The higheſt point indicated by the thermometer (Reaumur's) on board was 23°, and on ſhore 25° $\frac{3}{10}$ths. The mercury in the barometer varied only from 28 inches 1 line to 28 inches 2 lines. The time of high water on the full and-change days was three quarters after eleven; it then roſe to the perpendicular height of 6 feet. Voyages in ſearch of la Pérouſe, drawn up by M. Labillardiere, vol. ii. p. 308, &c. Eng. ed.

Bouro, is alſo a ſmall iſland, north of the iſland of Sumatra; 5 leagues N. E. of Acheen.

BOURON, a town of European Turkey, in Romania, the ſee of a Greek biſhop, ſeated on a lake of the ſame name, and 15 miles diſtant from the coaſt of the Archipelago.

BOURRE, in *Ornithology*. According to Salerne, the common or domeſtic duck is called *bourre* in Normandy, and the ducklings *bourret*.

Bourre, in *Zoology*, is alſo a word in uſe in France to expreſs the hair of ſeveral quadrupeds, ſuch as the ox, the buffalo, the horſe, ſtag, &c. Thus alſo they have the diſtinction of *bourre de laine* for the woolly kinds, and *bourre de ſoi* for that of a ſilky texture.

BOURRE', Fr. the air of a dance ſo called, is ſuppoſed to come from Auvergne, in which province it is ſtill in uſe. The tune is in common time, and begins with an odd crotchet. Rouſſeau.

BOURRERIA, in *Botany*. See Ehretia.

BOURRIQUE, in *Zoology*, ſynonymous with *l'aneſſe*, the ſhe-aſs.

BOURSAULT, Edme, in *Biography*, a French dramatic writer, was born in the province of Burgundy, in 1638; and by ſingular aſſiduity, though his education was altogether neglected in his youth, attained to a very accurate acquaintance with the French language. After his ſettlement at Paris, he was employed by the king in compoſing a work for the Dauphin, entitled "The true Study of Sovereigns," which was ſo well received, that the author would have been appointed ſub-preceptor to the dauphin, if he had underſtood Latin. For a weekly gazette in verſe, with which he amuſed the court, he obtained a penſion; but, on account of an imprudent attack upon the Capuchins, a complaint was lodged againſt him by the queen's Spaniſh confeſſor, who belonged to that order, and in conſequence of it, his gazette and penſion were ſuppreſſed, and he himſelf was in danger of being confined in the baſtile. In a ſimilar gazette, he afterwards introduced a ſatire on the prince of Orange, which political conſiderations induced the court to ſuppreſs. At length, however, he was appointed receiver of the tallies at Montluçon, where he died in 1701. As a writer for the ſtage, Bourſault was diſtinguiſhed by his talents for agreeable ridicule, united with good ſenſe, and alſo by an harmonious verſification, as well as a ſtyle that was eaſy and adapted to his ſubjects. His "Eſope à la Ville," and "Eſope à la Cour," ſtill retain their reputation on the theatre. An attack upon Boileau, by way of retaliation for ſome perſonal reflections in this author's ſatires, prevented the introduction of his piece in one act, entitled "La Satyre des Satyres," on the ſtage; but it was afterwards printed with a preface. Some years afterwards, Bourſault, by his polite attention to Boileau, conciliated his friendſhip, and induced him to inſert ſome other name terminating with *ault*, in his ſatires. Bourſault alſo wrote tragedies and operas; and his dramatic works were publiſhed in 1746, under the title of "Theatre de Bourſault," in 3 vols. 12mo. His letters, miſcellaneous pieces, and romances, are now forgotten. Nouv. Dict. Hiſt.

BOURSE, in *Ichthyology*, in the iſles of France and Madagaſcar, the common name of all the fiſhes of the Tetrodon genus. In the French American colonies, *baliſte vieille (baliſtes vetula)* bears the ſame name. Lacepede likewiſe aſſigns the word *bourſe* as a ſpecific name to a new ſpecies of baliſtes deſcribed by Sonnerat, the firſt dorſal fin of which has three rays; the ſecond is ſpotted; tail forked; and below the eye a black lunated ſpot.

BOURSIER, Lawrence-Francis, in *Biography*, an eminent theologian and metaphyſician, was born at Ecouen, in the dioceſe of Paris, in 1679, and entered into the Sorbonne in 1709, where, in 1711, he obtained the degree of doctor. As he devoted himſelf to ſtudy, he refuſed ſeveral benefices which were offered to him; and, at the age of 31, acquired great celebrity, both as an eloquent writer, and profound reaſoner, by a work entitled "The Action of God on the Creatures," or "Phyſical Premotion proved by reaſoning," 2 vols. 4to. and 6 vols. 12mo. This work was highly extolled by the Janſeniſts; and Voltaire ſpeaks of it (Age of Lewis XIV.) as deeply argumentative, learned, and ſometimes extremely eloquent. It involved him in a controverſy with the famous Malebranche. He was alſo the author of a memoir preſented to Peter the Great by the doctors of the Sorbonne, concerning a propoſed union between the Ruſſian and the Latin churches, which originated from a conference held by the author with the czar, on his viſit to the Sorbonne. His other works, which were numerous, chiefly related to the diſputes that ſubſiſted in the Gallican church. In 1729, he was one of many doctors who were expelled the Sorbonne; and from this time he was under a neceſſity of ſecuring his perſonal liberty by living in privacy. He died at Paris in 1749. Nouv. Dict. Hiſt.

BOURSIRES, in *Entomology*, the *cancer latro*. Rocheſ. Ant. 1. c. 21. See Latro.

BOURTANG, in *Geography*, a town and fortreſs of Groningen; 12 miles S.S.W. of Winſchotten.

BOURTH, a town of France, in the department of the Eure; 2 leagues N.W. of Verneuil.

BOURTHES, a town of France, in the department of the Straits of Calais, and chief place of a canton, in the diſtrict of Boulogne; 4 leagues S.E. of Boulogne.

BOURTRY, or Botro, a village of Africa, in the kingdom of Anta, on the Gold coaſt, ſeated on a ſmall river, at the foot of an eminence, on which the Dutch have built an irregular and mean fort, of an oblong form, divided into two parts, each defended by four ſmall pieces of cannon. The fort was built by one Carolus, in the ſervice of the Dutch, who afterwards paſſed into the pay of France, and obtained that privilege from the king of Anta, on acknowledging his ſuperiority by a ſlight tribute. This fort is called Badenſtyn; its batteries command the village of Bourtry, which has no other commerce beſides the gold trade carried on with the negroes of Adom. The inhabitants are of a mild and gentle diſpoſition, much attached to the Europeans, whom they conſider as their protectors. In 1708, the Dutch concerted a plan for forming ſugar plantations, which alarmed Sir Dalby Thomas, then the Engliſh governor at cape Coaſt, who repreſented to the Royal African company the danger of permitting the Dutch to execute a ſcheme which would diminiſh the value of the Britiſh colonies in the Weſt Indies. Theſe ſugar-plantations, the plan of which was thus counteracted, never anſwered the great expectations of the Dutch.

BOURY, in *Zoology*, a ſpecies of ox, that inhabits Madagaſcar. It is of the ſize of a camel, of a ſnowy white colour, and, like that animal, has a protuberance on the back. Boury is the name by which this kind is called by the natives.

BOUSCH, or Bouch, in *Geography*, a town of Upper Egypt, ſituate about a quarter of a league from the weſt bank of the Nile, and 4 miles N.E. of Beniſouef. The houſes are built of brick, and the roofs are elevated in the form of pigeon-houſes. The inhabitants occupy the ground-floor, and the pigeons the firſt; a practice which is general through the reſt of the Thebais. Theſe houſes, which make ſome figure at a diſtance, exhibit on entering them only tokens of wretchedneſs in the midſt of an abundantly rich country. In this town is occaſionally held a conſiderable market for cattle and proviſions. The canal of Bouſch formerly poured its waters into the river for ſix months of the year. At preſent it conveys them through the whole year into the lake Mœris, which does not receive a ſufficient quantity by Joſeph's canal, half choaked up as it is, to admit of its reſtoring any to the Nile.

BOUSIER, of the French *Entomologiſts*. See Copris.

BOUSKAVIR, in *Geography*, a river of Perſia, which diſcharges itſelf into the Perſian gulf, near Bender Rik.

BOUSSAC, a town of France, and principal place of a diſtrict, in the department of the Creuſe, 6 leagues N.E. of Gueret. The place contains 586, and the canton 7787 inhabitants; the territory includes 337½ kiliometres, and 17 communes.

BOUSSANGES, a town of France, in the department of the Herault; 6 leagues N. of Bezieres.

BOUSSIÈRE, a town of France, in the department of the Doubs, and chief place of a canton, in the diſtrict of Beſançon; the town contains 347, and the canton 7025 inhabitants; the territory comprehends 135 kiliometres, and 25 communes.

BOUSSU, a town of France, in the department of Jemappe, and chief place of a canton, in the diſtrict of Mons; the town contains 1882, and the canton 13,571 inhabitants; the territory includes 82½ kiliometres, and 13 communes.

BOUSTROPHEDON, compounded of βȣς, *bullock*, and ϛρεφω, *I turn*, in *Literature*, is uſed in ſpeaking of the ancient method of writing among the Greeks, wherein the lines were continued forwards and backwards, like the furrows in ploughing.

Pauſanias (lib. v. c. 17. Eliaca) mentions ſeveral ancient inſcriptions written in this manner: the laws of Solon are alſo ſaid to have been thus written; which, as the author laſt cited explains it, is when the ſecond line is turned on the contrary ſide, beginning at the end of the former, thus:

ΕΚ ΔΙΟΣ ΑΡ
VΘƸƎИUX

Potter. Arch. Græc. lib. i. cap. 26. tom. i.

BOUT, in *Ornithology*. Under this name Buffon deſcribes two birds of the Crotophaga genus; namely C. *ani*, as *le petit bout de Petun;* and C. *major*, as *le grand bout de Petun*.

BOUTA, in *Ancient Geography*, a town of Africa, in Libya Interior, near the ſource of the river Cinipha, according to Ptolemy.

BOUTADE, in *Muſic*, an irregular flight or movement without art or ſtudy.

The word was alſo formerly uſed for a *ſolo* on the *viol di gamba*, thus called as being ſuppoſed to be extemporary.

Richelet ſpeaks of a dance called *boutade*, invented by the famous Bocan, in the reign of Lewis XIII. ſo called from the briſk humourous manner of its beginning; but now out of uſe.

BOUTAEL, in *Ichthyology*, the local name of a certain kind of fiſh, that is ſaid to inhabit the lakes, ponds, and ſtanding waters in the Eaſt Indies, where it is alſo called the *Neegen oogen*. Ray deſcribes it under the name of *lampetra Indica*. It is conjectured that this muſt belong to the lamprey, or *petromyzon* genus, from the accounts of authors who ſpeak of it; but whether really ſo, or not, it is difficult to determine.

BOUTAN, in *Geography*. See Bootan.

BOUTANT, in *Architecture*. An arc boutant is an arch or buttreſs, ſerving to ſuſtain a vault; and which is itſelf ſuſtained by ſome ſtrong wall, or maſſive pile.

The word is French, and comes from the verb *bouter*, *to but*, or *abut*.

A pillar Boutant is a large chain or pile of ſtone, made to ſupport a wall, terrace, or vault.

BOUTE', in the *Manege*. A horſe is called *bouté*, when his legs are in a ſtraight line from the knee to the coronet; ſhort-jointed horſes are moſt apt to be *bouté*.

BOUTKOUJA, in *Geography*, a town of Perſia, in the province of Ghilan; 120 miles N.N.W of Reſhd.

BOUTON, or Booton, one of the Molucca or rather Celebeſian iſlands, in the Indian ſea; ſituate about 12 miles to the ſouth eaſt of Celebes. It is a large and woody iſland, and is a kingdom of itſelf, to which the neighbouring iſlands belong. The king of Bouton is in alliance with the Dutch company, who pay him a yearly ſum of 150 rix-dollars, or 32l. 14s. 6d. ſterling, in new Dutch coin, upon condition, that he ſhould not only permit the extirpation by the company of all the clove-trees in this and the neighbouring iſlands, but alſo aſſiſt them in effecting it. For this purpoſe, the company annually ſend out a ſerjeant, who is ſtyled the "extirpator," and who goes through all the woods in the iſlands, and cauſes all the clove-trees which he meets with to be cut down. The king of Bouton is obliged to provide for him guides and interpreters, and alſo veſſels, if he ſhould need them. But as this contract has not been regularly fulfilled, the government in India has thought proper to withhold this pecuniary allowance, at leaſt for one year, in order to induce this prince to adhere more rigidly to his contract, and to be more active in aſſiſting the company to deſtroy this rich production in his country, for the benefit of Amboyna and Banda. The paſſage between Bouton and the Toucan-beſſis is the ſecond dangerous part of the navigation for ſhips going to the Moluccas or Spice iſlands; the other being that of the "Budgeroons." The former channel is, indeed, wider than the latter, being about 4 leagues in breadth from the neareſt part of Bouton to the weſternmoſt of the Toucan-beſſis; but the danger is of longer duration, on account of the numerous ſmall iſlands that form the cluſter called the "Toucan-beſſis;" all of which are either connected or ſurrounded by rocky ſhoals, over and between which very rapid currents ſet ſtrongly to the eaſtward: beſides, a large and dangerous flat, called the "Hoefyzer," or horſe-ſhoe, lies one and a half or two leagues ſouth of them, upon which many veſſels of the company have been wrecked. In the narroweſt part of the paſſage is alſo a bay running into the land, weſt and north, into which veſſels are in danger of being driven by the currents which ſet into the bay, if the point oppoſite Toucan-beſſis be approached too near in calm weather. From this bay there is no eſcape till the weſt monſoon ſets in again; and ſome of the company's ſhips have been under a neceſſity of remaining in it for five or ſix months. From this circumſtance, the navigators have given it the name of "Dwaal," or Miſtake-bay. The principal town of this iſland is Callaſuſurg, ſeated about a mile from the ſea, on the top of a hill, and ſurrounded by walls. The inhabitants are ſmall, but well-ſhaped, and of a dark olive complexion. Their houſes are erected on poſts; and their religion is Mahometaniſm. Stavorinus's Voyages to the Eaſt Ind. vol. ii. p. 300. S. lat. 5°. E. long 123° 30'.

Bouton *de Camiſolle*, in *Conchology*, a trivial name in France for *trochus labio* of Linnæus.

Bouton *de la Chine*, the Linnæan *trochus niloticus*.

Bouton *de Roſe*, a ſpecies of Bulla, ornamented with red bands, *bulla apluſtre* of Linnæus.

Bouton *terreſtre*, the common name of a terreſtrial ſnail, figured by D'Argenville. It is the *helix rotundata* of Linnæus.

BOUTONNE, in *Geography*, a river of France, which runs into the Charente, 2 leagues eaſt of Rochfort; paſſing by St. Jean de Angely, and navigable to that town.

BOUTS-Rimes, a popular term in the French *Poetry;* ſignifying certain rhymes, diſpoſed in order, and given to a poet, together with a ſubject, to be filled up with verſes ending in the ſame words and the ſame order. The invention of the bouts-rimes is owing to one Du Lot, a poet, in the year 1649. In fixing the bouts, it is uſual to chuſe ſuch as ſeem the remoteſt, and have the leaſt connection.

Some good authors fancy that theſe rhymes are of all others the eaſieſt, that they aſſiſt the invention, and furniſh more new thoughts than any others. Sarraſin has a poem on the defeat of the bouts-rimes. The academy of Lanterniſts, at Thoulouſe, have contributed towards keeping in countenance the bouts-rimes, by propoſing each year a ſet of fourteen, to be filled up on the glories of the grand monarque: the victorious ſonnet to be rewarded with a fine medal. An inſtance hereof may be given in the following one, filled up by P. Commire:

Tout eſt grand dans le roi, l'aſpect ſeul de ſon *buſte*
Rend nos fiers ennemis plus froids que des *glaçons*.
Et Guillaume n'attend que le tems des *moiſſons*,
Pour ſe voir ſoccomber ſous un bras ſi *robuſte*.
Qu'on ne vous vante plus les miracles d' *Auguſte;*
Louis de bien regner lui feroit des *leçons:*
Horace en vain l'egale aux dieux dans ſes *chanſons:*
Moins que mon heros il etoit ſage et *juſte, &c.*

BOUTSALLICK, in *Ornithology*, ſynonymous with *cuculus ſcololopaceus*, which ſee.

BOUTTONNE'E, Fr. in *Heraldry*, is applied to the ſeed of a roſe, when repreſented of a different colour from the flower; which the Engliſh call *ſeeded:* e. g. a roſe gules ſeeded.

BOUVERET, in *Ornithology*, the French name of *loxia aurantia*.

BOUVERON. Under this name *loxia lineola* is deſcribed by ſeveral French writers. Briſſon, however, calls it *petit bouvreuil noir d'Afrique*.

BOUVIER, the name of *motacilla nævia*. Salern. Orn.

BOUVIERA, in *Ichthyology*, a name given by ſome writers to a ſmall freſh-water fiſh, found in the clear ſtreams of France and Germany. The French call it *bouviére*. It alſo bears the name of *bubulca*. This is *cyprinus amarus* of naturaliſts.

BOUVIE'RE, the common name in France of *cyprinus amarus*.

BOUVIGNES, in *Geography*, a town of the Netherlands, in the county of Namur, ſeated on the Meuſe. Near Bouvignes, which was formerly ſurrounded with a wall, and had a ſtrong caſtle, are the remains of an ancient city, called "Chivremont," the inhabitants of which committed many depredations, and defended themſelves with valour againſt Charles the Simple, in 922; againſt Otho, in 939; and againſt Bruno, archbiſhop of Cologne, in 960. But it was at length taken and deſtroyed, in 992, by Notger, biſhop of Liege. It is diſtant 4 leagues S. from Namur.

BOUVINES, or PONT-A-BOUVINES, a village of Flanders, ſeated on the river Marque, 3 leagues S.E. of Lille, where Philip Auguſtus obtained a great victory over the emperor Otho in 1214.

BOUVREUIL, in *Ornithology* (Buffon, &c.), *loxia pyrrhula* of Linnæus and other ſyſtematic writers; and *bulfinch* of the Engliſh. Bouvreuil, in a more general ſenſe, implies all the birds of the LOXIA genus.

BOUXIERES-AUX-DAMES, in *Geography*, a town of France, in the department of the Meurthe, 1 league N. of Nancy.

BOUXWILLER, a town of France, in the department of the Lower Rhine, and chief place of a canton, in the diſtrict of Saverne; 6 leagues N.W. of Straſburg. The town contains 2700, and the canton 12,264 inhabitants; the territory includes 105 kiliometres, and 21 communes.

BOUZANNE, a river of France, in the department of Indre, which riſes near Aigurande, 7 leagues from Argenton, and diſcharges itſelf into the Creuſe, near Cluſeau.

BOUZDOGAN, a town of Aſiatic Turkey, in the province of Natolia; 24 miles N.W. from Mogla.

BOUZE, a town of France, in the department of the Cote d'Or, and chief place of a canton, in the diſtrict of Beaune; 1 league N.W. from Beaune.

BOUZEK, a town of Aſiatic Turkey, in the province of Caramania; 32 miles E.N.E. of Kir-ſhehr.

BOUZILLE', a town of France, in the department of the Maine and Loire; 1 league S.E. of Ancenis.

BOUZILS, a town of France, in the department of Vendée, and in the diſtrict of Montaigu; 5 miles ſouth of it.

BOUZKIR, a town of Aſiatic Turkey, in the province of Natolia; 30 miles S.S.E. of Beiſhehri.

BOUZOLS, a town of France, in the department of the Upper Loire; 1 league S. of Puy-en-Velay.

BOUZONVILLE, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Thionville, and 5 leagues S. of it, ſeated on the Nied. The town contains 1400, and the canton 12,740 inhabitants; the terrritory comprehends 190 kiliometres, and 40 communes.

BOW, *Arcus*, a weapon of offence, made of wood, horn, or other elaſtic matter; which, after being ſtrongly bent, by means of a ſtring faſtened to its two ends, in returning to its natural ſtate, throws out an arrow with great force.

The bow is the moſt ancient, and the moſt univerſal of all weapons; and has been found to obtain among the moſt barbarous and remote people, who had the leaſt communication with the reſt of mankind.

Its invention was aſcribed by the ancients to Apollo, and was ſaid to have been firſt communicated by the primitive inhabitants of Crete: Hence, even in latter ages the Cretan bows were famous, and preferred by the Greeks to all others. Some, however, rather choſe to honour Perſes, the ſon of Perſeus, with the invention; while others aſcribed it to Scythes, the ſon of Jupiter, and progenitor of the Scythians, who were not only excellent at the bow, but by many reputed the firſt maſters of it. (Potter's Arch. Græc. &c.) All theſe different tales, however, ſerve but to ſhew that its antiquity muſt be referred to the remoteſt periods of hiſtory.

The earlieſt inſtance in the Old Teſtament, where the uſe of the bow is implied, is in that remarkable paſſage where Hagar and her ſon, driven from the houſe of Abraham, wander in the wilderneſs of Beer-ſheba. Of Iſhmael it is ſaid (Gen. xxi. 20.), "And God was with the lad, and he grew, and dwelt in the wilderneſs, and became an *archer*." The connection of which with the fifth preceding chapter (xvi. 12.) implies an earlier practice with the bow than any that can poſſibly be adduced from the profane hiſtorians. The overthrow of Saul was particularly owing to the Philiſtine archers. (1 Sam. xxxi. 3.) and (2 Sam. i. 18.) David, we are told, who ſucceeded him, "bade them teach the children of Judah the uſe of the bow: behold it is written in the book of Jaſher."

The practice of the bow indeed, at this time, appears to have been ſo general, that it was not unfrequently made uſe of as a figure of ſpeech. Iſrael, when bleſſing his ſons, (Gen. xlix. 23, 24.) ſays of Joſeph, "The *archers* have ſorely grieved him, and ſhot at him, and hated him. But his *bow* abode in ſtrength, and the arms of his hands were made ſtrong, by the hands of the mighty God of Jacob." The companies that came to David at Ziklag (1 Chron. xii. 2.) "were armed with *bows*, and could uſe both the right hand and the left." Its earlieſt application was undoubtedly to the purpoſes of food: and accordingly, when Iſaac ſent Eſau to the foreſt, he ſaid, "Take, I pray thee, thy weapons, thy quiver, and thy *bow*, and go out to the field, and take me ſome veniſon."

The fabulous writers of antiquity aſſert, that Teutarus, a Scythian, firſt gave Hercules a *Scythian* bow and arrows (Lycophron. Caſſandra, v. 56.); and Theocritus mentions it by the name of the Mæotian bow.

From the Scythians, it was derived to the Grecians, ſome of whoſe ancient nobility were inſtructed by the Scythians in its uſe, which in thoſe days paſſed for a moſt princely education (Potter, Arch. Græc. tom. ii. l. iii. cap. 4. Aquin. Lex. Milit. ii. 260). The Scythian was diſtinguiſhed

guiſhed from the Grecian *bow*, as well as from that of every other nation, by the ſingular incurvation of its ſhape, which was ſo great as to form a half-moon or ſemicircle (Amm. Marcellinus, l. xx.); whence the ſhepherd, in Athenæus, being to deſcribe the letters in Theſeus's name, and expreſſing each of them by ſome appoſite reſemblance, compares the third to the Scythian bow, meaning not the more modern character of Σ, but the ancient C, which is ſemicircular, and bears the 3d place in ΘΗCΕVC.

Among the ancients, the bow-ſtring, called τριχωσις, was made of horſe's hair, and thence called ιππεια; though Homer's bow-ſtrings are frequently made of hides cut into ſmall thongs; whence τοξα βοεια. The uppermoſt part of the bow, to which the ſtring was faſtened, was called κορωνη, being commonly made of gold, and the laſt thing towards finiſhing the bow.

The Grecian bows were frequently beautified with gold or ſilver; whence we have mention of *aureus arcus*; and Apollo is called αργυροτοξος. But the matter of which they were ordinarily compoſed, ſeems to have been wood; though they were anciently, Scythian like, made of horn, as appears from that of Pandarus in Homer (Iliad. δ. v. 105. Potter Arch. Græc. tom. ii. cap. 4.)

Till the ſecond Punic war the Romans had no bowmen in their armies, but ſuch as came with their auxiliary forces. (See Potter, ut ſupra).

The bows of the Arabians, who attended Xerxes' expedition, were long, flexible, and crooked, (Herodotus Polymn. lxix.) The Bactrians alſo had their bows and arrows (Ibid. lxiv.): and among the Indians they are ſtill retained.

In drawing the bow, the primitive Grecians did not pull back their hand towards their right ear, according to the faſhion of modern ages, and of the ancient Perſians (Procopius de bello Perſico, l. 1.); but, placing their bows directly before them, returned their hand upon the right breaſt (Euſtathius, Iliad. δ. p. 344. &c.). This was likewiſe the cuſtom of the Amazonian women, who are reported to have cut off their right breaſts, leſt they ſhould prove an impediment in ſhooting.

The moſt barbarious nations often excel in the fabric of the particular things which they have the greateſt neceſſity for, in the common offices of life. The Laplanders, who ſupport themſelves almoſt entirely by hunting, have long had an art of making bows, which we, in theſe improved parts of the world, have never arrived at.

Their bow is made of two pieces of tough and ſtrong wood ſhaved down to the ſame ſize, and flatted on each ſide; the two flat ſides of the pieces are brought cloſely and evenly together, and then joined by means of a glue made of the ſcales of perch, which they have in great plenty, and of which they make a glue ſuperior in ſtrength to any which we have.

The two pieces, when once united in this manner, will never ſeparate, and the bow is of much more force to expel the arrow, than it could poſſibly have been under the ſame dimenſions, if made of only one piece.

Having thus traced the early hiſtory of the bow, and evinced its general uſe, we now come to its hiſtory as principally confined to England. The bows in uſe have been of two kinds; the common or *long-bow*, and the *croſs-bow:* but as the *Saxon bow* appears to have differed from them both, our readers may not be diſpleaſed to read the deſcription of it ſeparate. Its particular uſe among the Anglo-Saxons and the Danes has been already mentioned: their ſkill, however, does not appear to have been extended beyond the purpoſes of procuring food or paſtime: and the repreſentation of a Saxon bow, as given in an ancient MS. of the tenth century, (MS. Cott. Claud. B. iv.) ſhews it was made very different from what one might expect in a military weapon: the ſtring not being faſtened to the extremities, but ſuffered to play at ſome diſtance from them. In ſize too it was a mere toy, compared with the *long-bow* of ſucceeding ages. (Strutt's Sports and Paſtimes, p. 39.)

The hiſtory of the LONG-*bow* has been already detailed, under the head of ARCHERY. We have here little elſe to add, than that a variety of acts of parliament, paſſed in different reigns, tended much to the encouragement of thoſe who uſed it. In 1482 (12 Ed. IV. c. ii.), four bow-ſtaves were ordered to be imported, with every ton of merchandize, from Venice; and by other acts, paſſed in the firſt of Richard III. the ſixth of Henry VIII. and the thirteenth of Elizabeth, ten bows for every butt of malmſey. Malmſey or Tyre wine, at that time came chiefly from Crete, which then belonged to the Venetians; and the price of bows, it appears, had riſen from 40s. to 8l. a hundred (Archæol. vol. vii.) In the 38th of Henry VIII. the price of a yew-bow was reduced to three ſhillings and four pence. (Ibid.)

In the ages of chivalry its uſe was conſidered as an eſſential part of the education of a young man, who wiſhed to make a figure in life: and even the ladies, as in later times, partook of the amuſement. It is ſaid of Margaret the daughter of Henry the VII. that when ſhe was on her way to Scotland, a hunting party was made for her amuſement in Alnwick park, where ſhe killed a buck with an arrow. (Leland's Collect. vol. iv. p. 278.) And the uſe of the bow was more than once practiſed by queen Elizabeth. The ladies, however, might probably have uſed the *croſs-bow.*

James I. iſſued one or two commiſſions for the prevention of encloſures in the grounds which had formerly been uſed for the practice of the bow: agreeably to which, the archers' grounds in the immediate neighbourhood of London were reduced to the ſame ſtate they were in in the beginning of the reign of Henry VIII. (Strutt's Sports and Paſtimes, p. 14.)

Among the ancient charters preſerved in the Britiſh Muſeum (Rol. ix. 8.), is a petition of the bowyers, fletchers, arrow-head-makers, and ſtring-makers, dated 1635, requeſting the king to appoint Richard Adames and Jeffery le Neve to put in force the ſtatute of the thirty-third of Henry VIII. It was referred by the king to the privy-council; and a commiſſion, the original of which, with the broad ſeal annexed, is in the ſame collection (xii. 68.), was afterwards directed to "Timothie Taylor, John Hobart, Henry Hobart, and Jeffery le Neve for the maintenance of artillery, archerie, and *ſhooting in long-bowves*, to enforce an act of the thirty-third of Henry VIII. that all perſons under 60 years of age ſhould uſe and exerciſe in ſhooting in long-bowes; and that men children, from 7 to 17 years of age, ſhould be inſtructed in the ſame."

This, it ſeems, was one of the laſt acts by which public encouragement was given to archery. The great body of the people, from the improvements that had been made in military tactics, were not likely to ſupport the commiſſioners in what was now propoſed: and the troubles which were riſing turned the attention of the legiſlature to more ſerious objects.

Aſcham (Toxophilus. 1571. 4to.) ſays, it was neceſſary for the archer to have a *bracer*, or cloſe ſleeve, to lace upon the left arm, that the bow ſtring, when looſed from the hand, might not be impeded: to this was to be added a *ſhooting glove*, for the protection of the fingers. The bow, he tells us, ſhould be made with well-ſeaſoned wood, and formed with great exactneſs, tapering from the middle towards each end. Bows were ſometimes made of brazil, elm, aſh, and ſeveral other woods; but eugh, or yew, had the ſanction from general experience of ſuperiority.

The marks uſually ſhot at by the archers for paſtime were "butts, prickes, and roavers." The *butt* was a level mark, and required a ſtrong arrow with a broad feather. The *pricke* was "a mark of compaſs," but certain in its diſtance; and to this mark a ſtrong ſwift arrow, with a middling-ſized feather, was beſt ſuited. The *roaver* was a "mark of uncertain length." And thus were they ſkilled in the different kinds of ſhooting.

The two ends or extremities of a bow, to which the ſtring is faſtened, are called its horns, *cornua*. And the ſtrength of a bow may be calculated on this principle, that its *ſpring*, i. e. the power whereby it reſtores itſelf to its natural poſition, is always proportionate to the diſtance or ſpace it is removed therefrom.

The CROSS-*bow*, or *Arbalet* (from *arbaleſta*, i.e. *arcu baliſta*, a bow with a ſling), conſiſts of a ſteel bow, faſtened upon a ſtock, and is diſcharged by means of a catch or *trigger*, which probably gave riſe to the lock upon the modern muſket. Bayle, explaining the difference between teſtimony and argument uſes this ſimile: "Teſtimony is like the ſhot of a *long-bow*, which owes its efficacy to the force of the ſhooter; argument is like the ſhot of a *croſs-bow*, equally forcible whether diſcharged by a dwarf or a giant."

The invention of croſs-bows is ſaid by ancient writers to have come from the Sicilians. They made both great and ſmall bows. The great ones, drawn on wheels, as our cannon are, threw darts three cubits long; while thoſe of the ſmaller kind were carried by foot-ſoldiers, the length of whoſe quarrels was ſcarce a cubit and an half. The larger ones were called *baliſtæ*, of which, as Livy informs us, there were no leſs than three and thirty at the ſiege of Carthage, beſide fifty-two of a ſmaller kind (ſee BALISTA); and Joſephus mentions forty at the ſiege of Jeruſalem. Vegetius ſays, that the baliſta diſcharged arrows with ſuch rapidity and violence, that nothing could reſiſt their force. And Athenæus tells us, that Ageſiſtratus made one of little more than two feet in length, that ſhot darts almoſt five hundred paces. (Rollin's Arts and Sciences, vol. ii. p. 52.)

Croſs-bows were firſt uſed in England by the Normans, at the battle of Haſtings; and a quarrel, or bar-bolt, from one of them, was the immediate cauſe of Harold's death. That they were afterwards adopted among our military weapons, is evident from the continual recurrence of *baliſtarius* in the Domeſday Survey. In the reign of Stephen, 1139, the ſecond council of Lateran prohibited their uſe; and ſome hiſtorians aſſert, that they were not again uſed in this country till the reign of Richard I., whoſe death, occaſioned by one, was conſidered as a judgment on his impiety: but Fitzſtephen, who wrote his Hiſtory of London about 1180, in the reign of Henry II., ſays, the ſkaiters of the metropolis moved faſter than the *pilum baliſtæ;* which ſeems to imply that both the croſs-bow and its uſe were known. From the death of Richard I. till the ſplendid victories of Edward III. we hear little of the croſs-bow as a military weapon. Its uſe appears to have been principally confined to the ſieges of fortified places and to ſea fights.

In 1346, at the battle of Creſſy, a large body of Genoeſe ſoldiers, who were particularly expert in the management of the croſs-bow, were in the ſervice of the French. At the commencement of the action, a ſudden ſhower wetted the ſtrings, and prevented the archers from doing their uſual execution.

But in England, after the reign of Henry III., its uſe ſeems to have been ſtudiouſly diſcouraged. The Engliſh found the long bow a more effectual weapon; though the French, even in the reign of Henry V., after the Engliſh bow had ſo often proved ſuperior in execution, to the great coſt of their countrymen, were ſtill attached to the croſs-bow; and Henry V. as duke of Normandy, confirmed the charter and privileges of the *baliſtarii*, who had long been eſtabliſhed as a fraternity at Rouen.

Their uſe, under our two laſt Henrys, has been already noticed as frequently forbidden; and by the ſtatute of the 25th of Henry VIII. a penalty of ten pounds was inflicted on every one in whoſe houſe a croſs-bow might be found. From this time they ſeem to have been chiefly uſed for killing deer (ſee Shakſpeare's Henry VI.), till, in 1627, they were again uſed by the Engliſh as a military weapon, in the expedition to the iſle of Rhee. (Gent. Mag. vol. liv. p. 269.)

The croſs-bow is of a moſt inconvenient form for carriage, even with the modern improvements; and in caſe of rain could not be eaſily ſecured from the weather. After the firſt ſhot, moreover, it could not be re-charged under a conſiderable time, whilſt the bolts are alſo heavy and cumberſome. The Engliſh long-bow, on the other hand, together with the quiver of arrows, was eaſily carried by the archer, as eaſily ſecured from rain, and re-charged almoſt inſtantaneouſly. It is not therefore extraordinary, that troops, who ſolely uſed this moſt effectual weapon, ſhould generally obtain the victory, even when oppoſed to much more numerous armies. (Barrington's Obſ. on Archery, Archæol. vol. viii.) The reach of the croſs-bow was confined; that of the long-bow more extenſive: although when the armies were oppoſed at no conſiderable diſtance, the quarrels of the former might poſſibly be poured in with the moſt regular effect.

BOW, or STRATFORD-LE-BOW, in *Geography*, is a village of Middleſex, in England, ſeated on the river Lea, at the diſtance of about two miles eaſt from London. The village has no particular claims to public notice, but from its ancient bridge, which croſſes the river Lea at this place. This ſtructure is ſaid to have been the firſt *arched* bridge erected in England. Stowe, Leland, and ſome other antiquaries, concur in aſcribing its firſt building to Maud, or Matilda, the queen of Henry I.; and thence ſome writers coincide in the current tradition of its being the moſt ancient *arched ſtone bridge* of this country. The faithful Stowe relates, that Matilda had been "waſhed in the water, in paſſing this dangerous forde;" and to provide againſt ſuch accidents in future, cauſed this, and another ſmaller bridge to be erected, "arched like a bow," which, he farther obſerves, "was a rare piece of worke; for before that time *the like* had never been *ſeen in England*." An old bridge of three arches ſtill occupies the place of the original ſtructure. Through this place, and over this ford, paſſed the ancient Roman road, called Watling-ſtreet, from Londinum (London) to Camelodunum (Colcheſter). From this arched bridge, and the name *Street-ford*, this place evidently derives its name.

At a ſhort diſtance northward, are the *Temple-mills*, which anciently belonged to the knights Templars, and afterwards to the knights of St. John of Jeruſalem. In the year 1720, they were uſed for braſs works, but are now appropriated to the manufacture of ſheet lead. (Lyſon's Environs of London, vol. iii. p. 489.)

BOW, a ſmall market town of Devonſhire, in England, ſeated on the banks of one of the branches of the river Taw. Deprived of the advantages of manufacture, and ſituated at a diſtance from the great turnpike road, this place is faſt ſinking into decay, and at preſent conſiſts of only 162 houſes, moſt of which are occupied by the peaſantry. Yet here is a ſmall ſhow of a market on Thurſday, and it has two annual fairs. A few blackſmiths, carpenters, and ſhoe-makers, are the principal tradeſmen of the place. It is 188 miles W. of London; the pariſh contains 677 inhabitants.

Bow, an iſland in Lough Erne, county of Fermanagh, Ireland, on the northern part of the lake, and one of the largeſt in it, being three miles long, and one and a half broad. It is well wooded, and contributes much to the beauty of the lake. It is about 15 miles from Enniſkillen.

Bow, an iſland in the South Pacific Ocean, about 10 leagues in circumference. S. lat. 18° 23′. W. long. 141°.

Bow, a townſhip of America, in Rockingham county, New Hampſhire, ſeated on the weſt bank of Merrimack river, ſouth of Concord, and 53 miles from Portſmouth; containing 568 inhabitants.

Bow, in *Muſic*, denotes a machine that ſerves to play, or give the ſound to, viols, violins, and other inſtruments of that kind, by drawing it gently over the ſtrings thereof.

The bow conſiſts of three parts; the firſt is the ſtick, or wood, to which the hair is faſtened; the ſecond is compoſed of about eighty or an hundred horſe-hairs, or filaments of ſilk; the third is the nut, a ſort of half-wheel, which ſerves to keep the hairs in the due degree of tenſion.

The ancients do not appear to have been acquainted with bows of hair; in lieu of theſe they ſtruck their inſtruments with a plectrum; over which our bows have great advantage, for giving long and ſhort ſounds, and other modifications, which a plectrum cannot produce.

Bow, in *Trade* and *Manufactures*, denotes a flexible inſtrument conſiſting of a piece of ſteel or iron, to the two ends of which is faſtened a cat-gut, uſed by ſmiths, watch-makers, and other artificers, for the piercing and turning of divers ſorts of works.

This is more peculiarly called a drill-bow.

It is ſometimes alſo made of wood, whalebone, and the like.

Operators in Moſaic have a ſort of bow made of a piece of elaſtic wood, with a braſs wire faſtened to the ends of it, which ſerves to ſaw hard and precious ſtones. Letter-caſters have alſo a bow wherewith to keep the matrix even. See FOUNDERY.

Bow, among *Builders*, denotes a beam of wood, or braſs, with three long ſcrews, that govern or direct a lath of wood or ſteel to any arch; chiefly uſed in drawing draughts of ſhips, and projections of the ſphere, or wherever it is requiſite to draw large arches.

Bow, in *Navigation*, an inſtrument formerly uſed for obſerving the altitude of the ſun, in order to determine the latitude of the ſhip.

This inſtrument conſiſts of the five following parts; viz. firſt, an arch, or portion of a circle, capable of containing upwards of ninety degrees, whence the name of the inſtrument; ſecond, a ſtraight rod or bar, equal in length to the radius of that circle of which the arch is a portion; and three vanes, called the *ſight*, *ſhade*, and *horizon* vanes.

The arch of the bow is divided into 90 degrees, and numbered from the top downwards; and theſe degrees are ſubdivided into halves, quarters, or tenths, &c. according as the ſize of the inſtrument will admit; but the common method is to divide the degree into three equal parts, and by means of concentric arches and diagonal lines, the ſubdiviſions may be carried as low as two minutes.

One end of the radius or ſtraight bar is put into a perforation in the arch at 45 degrees; and the horizon vane, having a narrow ſlit in it, through which the horizon is to be ſeen at the time of obſervation, is to be put upon the other end of the radius. The ſhade vane, which is ſometimes fitted up with a convex lens, is placed on the arch above 45 degrees; and the ſight vane, having a ſmall perforation, through which, and the ſlit in the horizon vane, the ſight is to be directed to the horizon, is put on the arch below 45 degrees. Theſe two vanes are moveable upon the arch. The manner of uſing this inſtrument is as follows:

1. *To obſerve the meridian altitude of the ſun with the bow.*

With the latitude of the ſhip by account, and the ſun's declination, find the eſtimated meridian altitude, which will be equal to the ſum, or difference, of the complement of the latitude of the ſhip by account, and the declination of the ſun, according as they are of the ſame, or of a contrary denomination. Then place the ſhade vane to any whole degree, as much above 45 degrees as amounts to nearly half the eſtimated meridian altitude, and the ſight vane is to be placed as much below 45 degrees. Now let the obſerver look to the oppoſite point of the horizon with reſpect to the ſun, and hold the bow vertically, and in ſuch a manner that the horizon may be ſeen through the ſlit in the horizon vane, the eye being placed at the ſight vane; then, if the bright ſolar ſpot, from the lens in the ſhade vane, is upon the ſlit in the horizon vane, the ſight vane is in its proper place; if not, the ſight vane is to be raiſed or depreſſed accordingly: continue obſerving in this manner, until the ſun has attained its greateſt altitude; and the degrees, and parts of a degree intercepted between the fiducial edges of the two vanes, will be the ſun's meridian altitude: and hence the true latitude of the ſhip may be found as uſual.

When the ſun begins to fall, that is, when the altitude diminiſhes, or the ſun is paſt the meridian, the ſolar ſpot will appear above the ſlit in the horizon vane, that ſlit and the horizon being in one.

2. *To obſerve the altitude of the ſun, when off the meridian, by the bow.*

Let the altitude of the ſun, at the time of the obſervation, be eſtimated; then place the ſhade vane to any whole degree, as much above 45 degrees as is about half the altitude by eſtimation; and move the ſight vane upwards or downwards, until the ſolar ſpot is upon the ſlit in the horizon vane, at the ſame time that the horizon is ſeen through the vane; and the intercepted degrees and parts of a degree upon the arch, between the ſight and ſhade vanes, will be the altitude of the ſun.

Bow, in *Ship-building*, that circular part of a ſhip in which the ſtem is in the middle, and its extremes near the foremoſt part of the fore-chains. A proper form of a bow is of the utmoſt conſequence. A veſſel with a ſharp bow will, *cæteris paribus*, ſail faſter in ſmooth water than one with a full bow; but in a high ſea, ſhe will plunge and dive greatly more, and thereby diminiſh her rate of ſailing. A proper medium between theſe two extremes, conſiſtent with the form of the ſhip, is, therefore, to be employed. M. Bouguer has paid very particular attention to this ſubject; and he has given a ſet of tables, deduced from algebraic formulæ, for the conſtruction of bows that will meet with the leaſt reſiſtance, and that will have the greateſt velocity, or of ſuch as will render a ſhip more capable of carrying ſail, and at the ſame time will divide the fluid with the greater facility; alſo, of the greater motion which, he ſays, differs in ſome caſes from that of the greateſt velocity. M. Bouguer obſerves, that it is very doubtful whether that figure, which meets with the leaſt reſiſtance in dividing the water, may be the moſt advantageous to acquire the greateſt degree of velocity; for it is poſſible that a bow which meets with a little more reſiſtance may render the ſhip capable of carrying a proportionable quantity of more ſail, although the two bows, which may be diſtinguiſhed by naming the one that of the leaſt reſiſtance, and the other that of the greateſt velocity, ſhould have ſuch an affinity to one another, that one ſhould, in a great meaſure, partake of the moſt eſſential properties of the other. M. Bouguer alſo obſerves, that a bow which meets with the leaſt reſiſtance in a direct courſe, not only meets with the leaſt reſiſtance in oblique courſes, but the veſſel has alſo the additional property of driving the leaſt to leeward; which is a double advantage gained, by forming the bow ſo as to give it that figure which will be the leaſt oppoſed in moving through any medium.

Bow, *Bold*, a full high bow.

Bow, *Lean*, a ſharp bow, having little bearing or ſupport, ſo that, in a rough ſea, a veſſel with a bow of this kind is apt to pitch greatly, which retards her rate, and alſo to ſhip much water.

Bow, *Starboard*, that part upon the right-hand ſide of the ſtem, to a perſon on deck looking forward; and that part upon the left-hand ſide is called the *larboard bow*.

Bow, *Weather*, is that part of the bow towards the wind when a ſhip is cloſe-hauled: and the other part is called the *lee bow*.

Bow, *On the*, an expreſſion uſed to denote the poſition of any object, as a ſhip, the land, &c. appearing in the direction of ſome particular part of the bow. If the ſhip is ſailing directly towards the object, it is ſaid to be *right-a-head;* if not, the object is ſaid to be on the *ſtarboard*, or on the *larboard bow;* or it is ſaid to be on the *weather*, or on the *lee bow*. If the object is in the direction of any particular part of the veſſel, with reſpect to the obſerver, as the cathead, &c. it is then ſaid to be right over the cat-head.

The poſition of an object, with reſpect to the courſe of the ſhip, may be eſtimated by the intercepted portion of the horizon between them; and in this caſe it may be expreſſed either in points of the compaſs, or in degrees, but the former is moſt commonly uſed. Hence, if from a ſhip running N. by W. with her ſtarboard tacks aboard, a light or ſail was obſerved to bear N. W. by N. it would be ſaid to bear two points upon the lee bow.

When the angle, contained between the object and the ſhip's courſe, is greater than four points, it is uſual to expreſs the bearing from the beam; thus, in place of ſaying that an object bears ſix points on the larboard bow, it is expreſſed to bear two points before the beam.

Bow-*bearer*, an under officer of the foreſt, who is to obſerve and take notice of all manner of treſpaſs, againſt vert or veniſon; and to attach, or cauſe to be attached, the offenders in the next court of attachment.

Bow-*compaſs*. See Compass.

Bow-*dye*, a new kind of ſcarlet-red, ſuperior to madder, but inferior to the true ſcarlet-grain, for fixedneſs and duration. It was brought into England, and firſt practiſed at the village of Bow, near London, by Kephler, a Fleming, in the year 1643; whence its name.

In the year 1667, another Fleming, named Brewer, invited to England by Charles II. with the promiſe of a large ſalary, brought this art to great perfection. Theſe accounts, however, and the names of the perſons, are extremely dubious. Anderſon's Commerce, vol. ii. p. 77. Beckmann's Hiſt. Invent. vol. ii. p. 206.

Bow-*legged*, in *Surgery*. See Bandy-*legs*.

Bow-*net*, or *wheel*, an engine for catching fiſh, chiefly lobſters and craw-fiſh, made of two round wicker-baſkets, pointed at the end, one of which is thruſt into the other; at the mouth is a little rim, four or five inches broad, ſomewhat bent inwards. It is alſo uſed for catching ſparrows.

Bow, *rain*. See Rain-*bow*.

Bows *of a ſaddle*, are two pieces of wood laid archwiſe, to receive the upper part of a horſe's back, to give the ſaddle its due form, and to keep it tight.

The fore-bow, which ſuſtains the pommel, is compoſed of the withers, the breaſts, the points, or toes, and the corking.

The hind-bow bears the trouſſequin, or quilted roll.

The bows are covered with ſinews, that is, with bulls pizzles beaten and ſo run all over the bows, to make them ſtronger. They are likewiſe ſtrengthened with bands of iron, to keep them tight. It is on the lower ſide of the bows that the ſaddle-ſtraps are nailed; the uſe of which is to make faſt the girths.

Bow-*piece*, a gun, or piece of ordnance placed in the bow.

Bow-*grace*, or *Boun-graſe*, a frame or compoſition of old ropes, or junks of cables, uſed to be laid out at the bows, ſtems, and ſides of ſhips, to preſerve them from bodies or fields of ice, when in high latitudes where theſe are expected.

Bow-*ſtaves*. See Garbling *of bow-ſtaves*.

Bow-*ſaw*. See Saw.

BOWDOIN, in *Geography*, a townſhip of America, in Lincoln county, and diſtrict of Maine, on the north-eaſtern bank of Androſcoggin river; diſtant from York, northeaſterly, 36 miles, and from the mouth of Kennebeck river 6 miles, and 166 N. E. from Boſton. It contains 1260 inhabitants.

BOWDOINHAM, a townſhip of Lincoln county, and diſtrict of Maine, ſeparated from Pownalborough eaſt, and Woolwich ſouth-eaſt, by Kennebeck river. It lies 171 miles N. E. from Boſton, and contains 792 inhabitants.

BOWED, in *Botany*, (*arcuatus*) bent like a bow; a term expreſſing the direction of filaments, and the figure of a legume. It is employed alſo by Gærtner, to denote that figure of the cotyledons which is found in ſome of the leguminoſæ and ſiliquoſæ, in canella, myrtus, cyſtus, ſcorpiurus, &c. and that figure of the embrio which occurs in allium, moræa, aſparagus, &c.

BOWEL-Galled, in *Farriery*, denotes a laceration occaſioned by the tightneſs and heat, or friction, of the girths, juſt behind the elbows of the fore-legs, and is ſoon hardened and obliterated by two or three applications of a ſoft ſpunge, impregnated with common vinegar.

BOWELLING, *exenteratio*, the act of pulling out the entrails of an animal. Bowelling makes part of the progreſs of embalming.

Bowelling is alſo a part of the puniſhment of traitors in England, who are to have their bowels ripped open, torn forth, and burnt before them. *Fractioni, ſuſpendio, decollationi, exenterationi, & quaterizationi adjudicavit.* Knyght ſub. Edw. II. in the ſentence of Hugh Spencer.

BOWER, Archibald, in *Biography*, a native of Scotland, was born at or near Dundee in 1686, educated in the Scots college at Douay, and admitted, in 1706, into the ſociety of Jeſuits at Rome. After ſome varieties of ſituation and employment, during the ſucceeding interval, he at length, viz. in 1723, ſettled at Macerata, where, according to his own account, he performed the office of counſellor to the Inquiſition: conceiving diſguſt, as he ſtates the fact, at the enormities committed by this tribunal, or, as his enemies aſſert, charged with incontinence, he removed, in 1726, to Perugia, and ſecretly made his eſcape to England. Of the circumſtances attending his eſcape he has given a very ample account; but his written documents and oral teſtimony have been found to differ in ſeveral particulars from each other, and of courſe his integrity was not only ſuſpected but reproached. Soon after his arrival, he was introduced by Dr. Aſpinwall to Dr. Clarke and to biſhop Berkeley, from intercourſe with whom, added to his own reading and reaſoning, he obtained, as he ſays, the fulleſt conviction that many of the favourite doctrines of the church of Rome were not only repugnant to ſcripture and reaſon, but wicked, blaſphemous, and utterly inconſiſtent with the attributes of the deity. Under the impreſſion of theſe ſentiments he withdrew himſelf from the Romiſh communion, and abandoned the order with which he had been connected. His mind ſeems at this time, according to his own account, to have been in a ſtate of ſcepticiſm and indeciſion on the ſubject of religion; and though he continued a Proteſtant for about ſix years, he connected himſelf with no particular denomination of Proteſtant Chriſtians. At length, however, he conformed to the church of England, alleging that this church was "as free in her ſervice as any reformed church from the idolatrous practices and ſuperſtitions of popery, and leſs inclined than many others to fanaticiſm and enthuſiaſm." By the recommendation of Dr. Goodman, phyſician to king George I., he obtained patronage in the family of lord Aylmer, and was entruſted with the education of two of his lordſhip's children. By lord Aylmer, he was introduced to lord Lyttleton, who conſidered him as a kind of religious confeſſor, and remained his active friend and zealous advocate, even when he was deſerted by almoſt every other perſon of any diſtinguiſhed reputation. Whilſt he lived with lord Aylmer, he formed a connection with the bookſellers, and was employed, firſt, in a monthly publication, entitled "Hiſtoria Literaria," and afterwards in the compilation of the "Univerſal Hiſtory." The part of this work which he undertook was the Roman hiſtory; but in the execution of it he is charged by his coadjutor, George Pſalmanaazar, with having unduly extended it in ſome parts, and in others, particularly in the Byzantine hiſtory, with having injuriouſly abridged it. By the emolument accruing from his tuition and writings, he accumulated a conſiderable ſum of money, the diſpoſal of which led to diſcoveries which very materially injured his character, and ſubjected him to juſt reproach. According to his own ſtatement, he propoſed to purchaſe a life annuity with this money, amounting to 1100l. of old South-Sea annuities; but being diſappointed in theſe views he negotiated with Mr. Hill, a Jeſuit, reſpecting the loan of it; and obtained from him an intereſt equal to that which he might have made of it by the purchaſe of the annuity in which he was diſappointed. A very different account of this tranſaction has been given by thoſe perſons who have queſtioned his integrity; and it muſt be acknowledged, that it is accompanied with ſuch kind of evidence, as leaves little room for heſitation in admitting the credibility of it. They allege, that being deſirous of re-admiſſion into the church, which he had abandoned, he made uſe of his money in a way which would ſerve to recommend him to the ſuperiors of the ſociety with which he wiſhed to be re-united. Accordingly, he propoſed to father Shirburn, then provincial in England, to deliver up to him, as repreſentative of the ſociety, his whole ſtock, on condition of their granting him a life-annuity of 7 *per cent.* The offer was accepted; and Bower paid at ſundry times ſums of money, amounting in the whole to 1350l. and ſtipulated by a bond to receive yearly 94l. 10s. In conſequence of this negotiation, Bower was re-admitted, in a formal manner, into the order of Jeſuits, at London, about the end of the year 1744, or beginning of the year 1745. Afterwards he determined, for reaſons not ſatisfactorily aſcertained, to ſeparate from the order of Jeſuits; and upon leaving them he obtained a return of his money. When a ſecond edition of the "Univerſal Hiſtory" was in contemplation, the bookſellers, very unfortunately for themſelves and for the credit of the work, engaged Bower to reviſe and correct it; but though he received a conſiderable ſum of money, not leſs than 300l. he publiſhed it without any material emendation. In 1747 he announced to the public propoſals for a "Hiſtory of the Popes;" the firſt volume of which was preſented to the king in the following year. In recompence of his labour, Mr. (afterwards lord) Lyttleton, obtained for him the place of keeper of queen Caroline's library; and his credit being ſomewhat revived, he married a niece of biſhop Nicholſon, with a fortune of 4000l. His "Hiſtory of the Popes" was continued, in ſucceſſive volumes, printed at different periods. In 1754 his unalterable friend, Mr. Lyttleton, appointed him clerk of the buck-warrants, a place which, though of no great emolument, evinced his continued attachment. In this year the firſt attack was made on his "Hiſtory," which the advocates of popery conſidered as peculiarly hoſtile to their church, in a pamphlet printed at Doway, entitled "Remarks on the two firſt volumes of the late lives of the popes," 8vo.; a publication aſcribed by Mr. Bower to a popiſh prieſt of the name of Butler, one of the moſt active and dangerous emiſſaries of Rome in this kingdom. But an event ſoon happened, which was much more ruinous to the reputation of Mr. Bower, and which ſunk him into total diſgrace; and this was the divulging of his correſpondence with the Jeſuits. The charges alleged againſt him were repelled with ſpirit by himſelf; but his veracity, though atteſted by an affidavit, was queſtioned; and he had ſcarcely any friend left beſides lord Lyttleton. In the courſe of this controverſy, he was in danger of being exhibited on the ſtage, as a mock convert of profligate character, by Mr. Garrick, on account of the manner in which he mentioned that incomparable actor and his lady, in his "Summary of the controverſy between the papiſts and the author," 4to. But Mr. Garrick, by the mediation of lord Lyttleton, was induced to wave that public chaſtiſement which he had intended. The reputation of Bower's hiſtory declined with his own; the fourth volume was publiſhed during the agitation which the controverſy in which he was egaged had produced; the fifth appeared in 1761; and the ſixth and ſeventh volumes were preſented to the public a little time before his death; and whatever may be the eſtimation in which the preceding volumes deſerve to be held, theſe two are executed with ſuch haſte as to deſerve very little regard. The whole period from 1600 to 1758 is comprehended in 26 pages! Bower died in 1766, at the age of 80; and he left a will, dated in 1749, which contained no written declaration of his religious principles, agreeably to the practice which very much prevailed in thoſe times, and which, in his peculiar circumſtances, might have been reaſonably expected. His widow, however, ſome time after his death atteſted his having died in the Proteſtant faith. New Biogr. Dict. 8vo. 1798.

Bower, *Lady's*, or *Virgin's*, in *Botany*. See Clematis.

Bower, in *Gardening*, a ſhady place, under covert of trees or branches interwoven. A bower differs from an arbour, in that the latter is always built long and arched, but a bower either round or ſquare at the bottom, and made with a ſort of dome or ceiling at the top. See Arbours.

Bower-*anchors, beſt and ſmall*, in *Sea-Language*. See Anchor.

BOWES, in *Geography*, a town of Yorkſhire, England, is more noted for its former than preſent conſequence. During the abode of the Romans in Britain, this place was choſen for one of their military ſtations; and from an inſcribed altar found here, it appears, that, in the reign of Severus, when Virius Lupus was legate and proprætor of Britain, the firſt cohort of the Thracians was in garriſon here. Horſley, in his Britannia Romana, ſays, "there is an old caſtle here, which, with the church, ſtand in the north part of the old Roman ſtation, and no doubt have been built out of the ruins of it." About two furlongs ſouth of this ſtation (called Lavatris) runs the river Greta.

Bowes is included in that diviſion of the county of York, called Richmondſhire, in the north riding, at the diſtance of 4 miles from Barnard caſtle, and 248 miles north from London. The town conſiſts of one long ſtreet, running eaſt and weſt, and contains 120 houſes and 670 inhabitants. Here is a weekly market on Fridays, and one fair annually. This pariſh includes the three townſhips of Bowes, Boldron, and Gilmonby. The ſurrounding country, conſiſting moſtly of moors and commons, abounds with coal and lead mines, which, with the royalty, belong to the proprietor of Carlton-hall.

About two miles from Bowes, is a ſingular natural curioſity, called *God's Bridge*, which is formed by a rude arch of freeſtone. This ſtretches acroſs the river Greta, the waters of which are precipitated over different ledges of rocks, and ſoon afterwards ſink beneath the ſurface, and continue though a ſubterraneous paſſage of about half a mile, when they again emerge into light through ſome rocky cavities. Gough's edition of Camden's Britannia. Hutchinſon's Tour to the Lakes, 8vo.

BOWET, or Bowess, among *Falconers*, denotes a young hawk when ſhe draws things out of her neſt, and covets to clamber on the boughs.

BOWGE *of court*. See Bouche *of court*.

BOWL, denotes either a ball of wood for the uſe of bowling, or a veſſel of capacity for holding liquors.

Bowl-*waſſel*. See Wassel-*bowl*.

BOWLDER-*ſtones*, a ſpecies of ſmall ſtones, of an indeterminate texture and figure, generally roundiſh, found or the ſhores of the ſea and banks of rivers. Bowlders, or bowlder-ſtones, are only lumps and fragments of ſtones or marble, broken from the adjacent cliffs, and rounded by being bowled and tumbling to and again by the action of the water; whence the name bowlder-ſtones, as being formed by an action like that of a bowl, and thereby reduced to the ſhape of one. Neither the bowlders nor rubble-ſtones are ever inveſted with an exterior ſtrong cruſt or ſkin: it is plain from the manner of their formation they cannot. This is one mark by which they are diſtinguiſhed from flints, pebbles, or the other native nodules, which were formed before the ſubſiding of the matter of the ſtrata, and are always covered with ſuch a cruſt or ſkin, unleſs it has been worn off.

BOWLE, John, in *Biography*, rector of Idminſtone near Saliſbury, was a deſcendant of Dr. John Bowle, biſhop of Rocheſter in the 17th century, born in 1725, and being admitted of Oriel college, in the univerſity of Oxford, took the degree of maſter of arts in 1750. He had the honour of being, according to Dr. Douglas's account, the original detector of Lauder's forgeries, for the purpoſe of injuring the reputation of Milton. He was the author of a "Letter to Dr. Percy," and editor of Don Quixote in Spaniſh, and of Marſton's Satires, and ſome old poetry in Engliſh. He died in 1788. New Biog. Dict.

BOWLESIA, in *Botany* (named after Bowles, author of Travels in Spain). Flora of Peru. pl. 34. Boſc in Nouveau Dictionaire d'Hiſtoire Naturelle. Claſs, *pentandria digynia*. Nat. Ord. *umbelliferæ*.

Gen. Char. *Umbel* of three flowers. *Invol.* none. *Fruit* tetragonal *Seeds* two, externally concave.

BOWLINE, in *Sea-language*, a rope faſtened near the middle of the leech, or perpendicular edge of the principal ſquare ſails, by three or four ſubordinate parts called *bridles*, and leading forward towards the bow, and hence its name. It is always uſed when the wind is ſo unfavourable that the ſails muſt be all braced ſideways, or *cloſe-hauled* to the wind: in this ſituation, the bowlines as employed to keep the weather or windward edges of the principal ſails tight forward and ſteady, without which they would be always ſhivering, and rendered incapable of ſervice. Neither the ſpritſail, nor ſprit-ſail top-ſail has bowlines, as there is no place forward to which they could lead, and therefore theſe ſails cannot be uſed when the veſſel is upon a wind. The bowlines of the fore-ſail, fore-top-ſail, and fore-top-gallant-ſail, lead to the bowſprit. Thoſe of the main-ſail, main-top-ſail, and main-top-gallant-ſail lead to the foremaſt; and the mizen-top-ſail, and top-gallant bowlines lead to the main-maſt.

To *check* or *eaſe* the bowline, is to ſlacken it, when the wind becomes large, or more aft; and when the wind comes more a-head, or the ſhip lies nearer to it, ſo that any particular ſail is ſhivering, or nearly ſo, it then becomes neceſſary to get the weather-leech of that ſail more forward, that the ſail may ſtand, or be kept full; and the order for this purpoſe is to *haul taught*, or *take a pull* of the weather bowline belonging to that ſail.

Bowline-*bridles*, the ropes by which the bowline is faſtened to the leech of the ſail.

Bowline-*knot*, a particular kind of knot which will not ſlip, by which the bowline bridle is faſtened to the cringle. See Knot.

BOWLING, the act or art or throwing bowls. Bowling, among us, is chiefly the name of a game or exerciſe, practiſed either in open places, as bares and bowling-greens, or in cloſe bowling-alleys. The ſkill of bowling depends much on a knowledge of the ground, and the right choice of a bowl ſuitable to it: for cloſe alleys the flat bowl; for green ſwards plain and level, the bowl as round as a ball is preferred.

The terms uſed in bowling, are, to *bowl wide*, which is when the bias does not hold, or is not ſtrong enough; *narrow*, when it is too ſtrong, or holds too much; *finely bowled*, is when the ground is well choſen, and the bowl paſſes near the block, even though it goes much beyond it; *bowling through*, or a *yard over*, is done in order to move the block; an *over-bowl*, that which goes beyond it; a *bowl laid at hand*, is that put down within the gameſter's reach, to be in the way of the next bowler, and hinder his having the advantage of the beſt ground; *bowling at length*, neither bowling through nor ſhort; *a dead length*, a juſt or exact one; *throwing* or *flinging*, is diſcharging a bowl with a ſtrength purpoſely too great for a length, in order to carry off either the block or ſome near bowl; *bowl-room*, or *miſſing wood*, is when a bowl has free paſſage, without ſtriking on any other; *get off*, is when a bowl being narrow, is wanted to be wider; *bowl beſt at block*, that neareſt the block; *drawing a caſt* or *bowl*, is to win it by bowling nearer, without ſtirring either the bowl or block; a bowl is ſaid to *rub*, when it meets with ſome obſtacle in the ground which retards its motion and weakens its force; *it is gone*, when far beyond the block. *Block* ſignifies a little bowl laid for a mark, alſo called a *jack*. *Mark*, is a proper bowling diſtance, not under ſo many yards; and being at leaſt a yard and a half from the edge of the green. *Ground*, a bag or handkerchief laid down to mark where a bowl is to go. *Lead*, the advantage of throwing the block, and bowling firſt. *Caſt*, is one beſt bowl at an end. *End*, a hit, or when all the bowls are out. The *game*, or *up*, is five caſts, or beſt bowls.

BOWLING-GREEN, in *ornamental Gardening*, is a ſpacious plat laid evenly with turf in pleaſure or other grounds, deſigned for the purpoſe of ornament, as well as amuſement, in the ſummer ſeaſon, in bowling upon.

Theſe ſorts of compartments ſhould moſtly be formed as near the houſes or habitations as poſſible, being laid out on the back fronts ſo as to ſerve by way of lawns to ſuch parts as they may be ſituated in; as at the termination of walks or avenues. They may alſo be contrived amidſt detached contiguous plantations, or wilderneſs quarters, to ſerve as portions of ſward ground, or as openings to ſuch places, and ſhould always, if poſſible, have tall trees ſo ſituated on the boundaries, as to afford ſhade, eſpecially in the afternoon. The dimenſions muſt vary according to circumſtances; but where there is ſcope of ground ſufficient, they ſhould not be leſs than from half an acre to an acre. The moſt common form is that of a ſquare moderately extended; but ſome are made oblong, others circular, though, to ſuit the general plan or figure of the ground, they may be of any other form, ſo as to avoid the garden ground. Their boundaries may alſo be ſpacious planted borders of either the ſtraight or ſerpentine kind. The plane or ſurface of the greens ſhould be perfectly level, and as high, at leaſt, as the general level of the adjoining ground, ſo as that it may be always preſerved from ſtagnant moiſture.

In forming theſe plats, the ſurface ſhould be levelled in the moſt exact manner, and laid with the fineſt graſs turf that can be procured from a cloſe paſture, common, or down. See Turf. The extent and proper levels of the greens are then ſet out with ſtakes placed round the extremities or boundaries, at fifteen or twenty feet diſtance, on which ſhould be marked the determinate levels of the ground, and from which, on the oppoſite ſides, levels in other croſsways at the ſame diſtance ſhould be made; and then, according to theſe levels, proceed by line and ſpade to form the ground to a proper ſurface, making it up firmly in lines from ſtake to ſtake; the pannels or ſpaces between being made up equally firm and regular, ſo that no part may ſink in a hollow afterwards. The whole ſhould then be raked level, and finiſhed off evenly and ſmooth. Two or three inches deep of light ſandy ſoil, or any light dry poor earth may then, if neceſſary, be laid evenly over the ſurface, as equal in quantity as poſſible, as by that means the turf or graſs will form a moſt fine, regular, and even ſward.

The graſſy ſurfaces ſhould always be formed by laying them with freſh cut turf, as being much ſuperior to the method of only ſowing them with graſs ſeeds. The turfs ſhould be cut each a foot wide, a yard long, and about an inch thick, and laid with exactneſs, cloſely joining them edge to edge, then beating them well down with large wooden beaters, repeatedly rolling them with a large heavy iron roller.

The beſt ſeaſon for performing work of this ſort is the autumn, or very early in the ſpring; but the firſt is to be preferred when it can be conveniently done, as the turf has time to eſtabliſh itſelf well before the hot ſeaſon ſets in.

In order to keep bowling-greens neat after being thus formed, they require frequent mowing in ſummer, probably once or twice a week, or oftener, in order to keep the graſs ſufficiently fine and ſhort for bowling, as well as occaſional rolling to preſerve the ſurface firm and even. When wormy caſts are much thrown up over their ſurfaces, they ſhould be poled occaſionally to break and ſcatter them, and then well rolled with a wooden roller, to which the ſcattered earthy particles may adhere, and the ſurface be thereby made more clean. See Poling Grass. Where coarſe weeds, as the dock, dandelion, &c. preſent themſelves, they ſhould be wholly eradicated, to prevent their ſeeds from being diſperſed over the ſurface, and new plants thereby raiſed which would prove injurious, and render the turf unfit for the purpoſe of bowling upon.

Bowling-*Green*, in *Geography*, a village of Virginia, in America, ſituated on the poſt-road, 22 miles S. of Fredericſburg, 48 N. of Richmond, and 25 N. of Hanover-court-houſe. Another village of this name lies in Warren county, Kentucky, 808 miles from Waſhington. In both are poſt-offices.

BOWNESS, in *Geography*. See Borrostowness.

BOWSE, in *Sea-language*, an order to all the people employed in hauling upon any particular rope, to pull together. *Bowſe away*, that is, *pull away*, and all at the ſame inſtant.

BOWSPRIT, a large boom or ſprit projecting from the bow of a ſhip, over the ſtem, and hence its name. The bowſprit makes an angle with the keel, which is various, according to the fancy of the builder; being, in general, between twenty degrees, and three points or upwards, as the height of the bowſprit at the cope, above a horizontal line at the keel, extends from one third to one half of its length. According to Mr. Chapman, the elevation of the bowſprit of a merchant ſhip ought to be three-ſevenths of its length, and in ſhips of war four-ſevenths. This elevation of the bowſprit is called its ſteeving or ſtiving. Mr. Gower is a ſtrong advocate for diminiſhing the ſteeving of bowſprits, and upon this ſubject he expreſſes himſelf as follows: "As every poſition of the rudder, except a middle one, takes from the ſpeed of the veſſel, it ſhould be preſerved as much amidſhips as poſſible. Almoſt every ſhip under full ſail, with a ſide wind, carries a weather helm; to counteract which, it is recommended to lower the ſteeving of the bowſprit to one angle of five or ten degrees with the keel, and to increaſe the jib-boom in ſtoutneſs, that a large jib of ſtrong canvas may be carried in moſt weathers. With the bowſprit lowered, it will be better without a ſpritſail yard; and let the jib boom be ſecured from the cat-heads and ſtem, by a ſtanding and travelling guy on each ſide, and a ſtanding and travelling martingale." In cutters, ſchooners, luggers, and ſhallops, the bowſprit is nearly parallel to the keel.

The length of that part of the bowſprit which is without the ſtem, is generally equal to the extreme breadth of the ſhip. In trading ſhips, the celebrated Mr. Chapman makes the length of the bowſprit to be equal to the ſum of the extreme breadth, and one-tenth of it; and in ſhips of war, it is equal to the ſum of the extreme breadth, and three-twentieths of the ſame. Thus, if the extreme breadth of a ſhip is 32 feet, the length of that part of the bowſprit beyond the ſtem will be 35.2 for a merchant ſhip, and 36.8 for a ſhip of war.

The diameter of the bowſprit is equal to half the ſum of the diameters of the main and fore-maſts.

As the ſafety of the fore-maſt depends greatly upon the bowſprit, every precaution, therefore, is uſed to have this laſt well ſecured. The keel is firmly faſtened to the decks; that part of the bowſprit at the ſtem is ſtrongly faſtened thereto by ſeveral turns of a rope, which is called the *gammoning of the bowſprit*; and the bobſtay connects the lower part of the ſtem or cutwater with that part of the bowſprit at the foreſtay.

BOWYER, William, in *Biography*, an eminently learned printer, the ſon of a printer of the ſame name, was born in London, December 17, 1699; received his grammatical education under Mr. Ambroſe Bonwicke, a non-juring clergyman of acknowledged piety and learning; and was admitted in 1716, as a ſizar at St. John's college, in the univerſity of Cambridge, where he continued for ſix years, and probably took his degree of bachelor of arts. Although his diſpoſition was naturally reſerved, yet he cultivated, during his reſidence at college, an intimate acquaintance with ſeveral reſpectable members of the univerſity, and particularly with Mr. Markland and Mr. Clarke, with whom he maintained through life a regular correſpondence, which furniſhes a valuable treaſure of polite literature and ſound criticiſm. When he left Cambridge, he officiated as a ſchool-maſter for the benefit of the family of Mr. Bonwicke, who died in 1722; and thus teſtified his gratitude for the aſſiſtance he had received from him in his education, at a time when the whole property of his father was deſtroyed by a fire. Having performed this act of kindneſs and of gratitude, he joined his father in the printing buſineſs; and began with a correct and complete edition of Selden's works by Dr. David Wilkins, in 3 vols. fol. As he read the proof ſheets, he drew up an epitome of the treatiſe "De Synedriis." This work was followed by an admirable ſketch of William Baxter's Gloſſary of the Roman Antiquities; in which Bowyer ſufficiently evinced his literary talents. In 1729 he was appointed printer of the votes to the houſe of Commons, which office he held for nearly fifty years. It is hardly neceſſary to mention the part taken by him, in 1731, in a controverſy which is now ſunk into oblivion. It produced, however, on his part, a pamphlet entitled "The traditions of the clergy not deſtructive of religion; being remarks on Mr. Barman's ſermon, expoſing that gentleman's deficiency in Latin and Greek, in eccleſiaſtical hiſtory and true reaſoning." In the ſame year he printed, and is ſuppoſed to have tranſlated, Voltaire's Life of Charles XII. of Sweden. In 1736, he was admitted a fellow of the Society of Antiquaries, of which he was an aſſiduous and uſeful member. His tranſlation of "Trapp's Latin lectures on poetry," with additional notes, was publiſhed in 1742; and about the ſame time, he corrected and formed a new and uſeful ſchool-book, entitled "Selectæ ex profanis ſcriptoribus hiſtoriæ." We ſhould far exceed the bounds of this article, if we were to mention the prefaces, notes, and various additions, which he contributed to the works that iſſued from his preſs. We ſhall content ourſelves with noticing ſome of the principal of this kind. In 1744, he wrote, as it is ſuppoſed, a ſmall pamphlet on the preſent ſtate of Europe, chiefly taken from Puffendorf; and, in 1746, he publiſhed the "Life of the emperor Julian," tranſlated from the French of M. Bleterie, with curious notes, and a genealogical table. In 1750, he annexed a prefatory critical diſſertation, and ſome valuable notes, to Kuſter's treatiſe, "De vero uſu verborum mediorum," which was publiſhed, with further improvements, in 1773. About the ſame time he wrote a Latin preface to Leedes's "Veteres poetæ citati, &c." and ſoon after improved an edition of col. Bladen's tranſlation of Cæſar's commentaries. In 1751, he wrote a long preface to Monteſquieu's "Reflections on the riſe and fall of the Roman empire;" tranſlated the dialogue between Sylla and Socrates, and improved the edition by ſeveral corrections from the baron's "Spirit of Laws," as well as by his own notes. Of this work a new edition, with additional notes, was printed in 1759. In the ſame year (1751) he publiſhed the firſt tranſlation that was made of Rouſſeau's paradoxical oration, which gained the prize of the academy at Dijon, in 1750; and thus he firſt announced that ſingular genius to the attention and admiration of Europe. To Mr. Bowyer we are indebted for the notes ſigned (B) in the 9th 4to. volume of Swift's works, extracted from letters, which were printed but never publiſhed. His "Remarks on the ſpeech made in common council, on the bill for permitting perſons profeſſing the Jewiſh religion to be naturalized, ſo far as prophecies are ſuppoſed to be affected by it," was intended for the purpoſe of allaying the ferment occaſioned by the Jew-bill in 1753, and of ſhewing, that whatever political reaſons might be alleged againſt the bill, Chriſtianity would in no degree be prejudiced by the indulgence propoſed to be granted to the Jews. In this year alſo appeared his notes, annexed to biſhop Clayton's tranſlation of "A journal from Grand Cairo to mount Sinai, and back again." In 1761, Mr. Bowyer was appointed printer to the Royal Society; and he had the honour of retaining that office till his death. Without mentioning other publications, in which he was concerned either as a writer or as an editor, we ſhall proceed to notice an excellent edition of the Greek Teſtament, in 2 vols. 12mo., which appeared in 1763, under the following title; "Novum Teſtamentum Græcum, ad fidem Græcorum ſolum codicum MSS. nunc primum impreſſum, adſtipulante J. J. Wetſtenio, juxta ſectiones Jo. Alberti Bengelii diviſum; et nova interpretatione ſæpius illuſtratum. Acceſſere in altero volumine emendationes conjecturales virorum doctorum undicunque collectæ." This edition was ſold with great rapidity; and the conjectural emendations were well received by the learned. Theſe were ſeparately publiſhed, with very conſiderable enlargements, in one volume, 8vo., in 1772. A new and correct edition of this Greek Teſtament, with the conjectures, in 4to. much enlarged from the margin of Mr. Markland's Teſtament, and by new communications from biſhop Barrington, profeſſor Michaelis, M. Stephen Weſton, Dr. Goſſet, &c. was printed by Mr. Nichols in 1782 and 1783, under the inſpection of the learned Dr. Owen, with his remarks. At the requeſt of Thomas Hollis, eſq. Mr. Bowyer wrote, in 1765, a ſhort Latin preface to Dr. Wallis's "Grammatica Linguæ Anglicanæ:" a larger Engliſh preface, written by him, and intended for that work, is communicated to the public in his "Miſcellaneous Tracts," publiſhed by Mr. Nichols in 1785, 4to. In 1766, he formed a partnerſhip with Mr. Nichols, who had been trained by him to the profeſſion, and had aſſiſted him ſeveral years in the management of buſineſs. This connection with a perſon, whoſe diſpoſition was amiable and communicative, and who reſembled himſelf in his ſolicitude, by literary reſearches and publications, to promote the cauſe of literature, enſured the proſecution of views and plans ſimilar to his own; and warranted a confidence which enabled him to withdraw, in the declining ſtate of his health, from the fatigues of active employment. It alſo afforded him greater leiſure for indulging his own ſtudious inclination. Accordingly, in this year (1766) Mr. Bowyer wrote an excellent Latin preface to "Joannis Harduini, Jeſuitæ, ad cenſuram ſcriptorum veterum prolegomena," in which he gives an account of the nature of the work, and of the manner in which it had been preſerved. About the ſame time were publiſhed Mr. De Miſſy's remarks on the extraordinary production of the celebrated Jeſuit, in a Latin letter to Mr. Bowyer. In 1767, he was appointed, by the recommendation of the earl of Marchmont, to print the journals of the houſe of Lords, and the rolls of parliament. In this year he printed Mr. Clarke's learned work, entitled "The connection of the Roman, Saxon, and Engliſh coins," with notes by himſelf, together with a diſſertation on the Roman ſeſterce, which was partly his own production, and an excellent index of his own compilation. In 1771, the late Matthew Raper, eſq. communicated to the Royal Society a very ingenious "Inquiry into the value of the ancient Greek and Roman money," which was printed in the Philoſophical Tranſactions; and Mr. Bowyer publiſhed "Remarks," on this diſſertation, which he intended as an appendix to Mr. Clarke's treatiſe on coins. Three ſmall tracts were publiſhed by him in 1773, under the title of "Select Diſcourſes; 1. of the correſpondence of the Hebrew months with the Julian, from the Latin of profeſſor Michaelis; 2. of the Sabbatical years, from the ſame; and 3. of the years of jubilee, from an anonymous writer in Maſſon's Hiſtoire Critique de la Republique des Lettres:" and in 1774, he corrected a new edition of Schrevelius's Greek Lexicon, to which he added a number of new words, collected in the courſe of his ſtudies. Of his critical ſkill in the learned languages, he left in MS. many evidences, which appear in the additions made by him to the lexicons of Hederic and of Buxtorf, the Latin ones of Faber and of Littleton, and the Engliſh dictionary of Bailey; and alſo in the corrections and enlargements of Leigh's "Critica Sacra," and Dugard's "Lexicon Græci Teſtamenti alphabeticum;" together with his notes on Middleton's Life of Cicero, Duncan's and Bladen's Cæſar, Theocritus, Horace, and Pope, and an aſtoniſhing number of critical remarks on the Old and New Teſtament. In 1774 was publiſhed "The origin of Printing, in two eſſays: 1. The ſubſtance of Dr. Middleton's diſſertation on the origin of printing in England. 2. Mr. Meerman's account of the invention of the art at Haerlem, and its progreſs to Mentz; with occaſional remarks, and an appendix." Of this work the original idea was Mr. Bowyer's; but it was completed by Mr. Nichols. A ſecond edition of this work, which was well received both at home and abroad, was publiſhed, with very conſiderable improvements, in 1776. In 1777, he cloſed his literary career, with a new edition of Dr. Bentley's "Diſſertation on the epiſtles of Phalaris," with additional notes and remarks by himſelf and others. On this occaſion he was much indebted to the friendly aſſiſtance of Dr. Salter, late maſter of the charter-houſe, and Dr. Owen.

Mr. Bowyer had been always ſubject to a bilious colic, and for the laſt ten years of his life he was afflicted with the palſy and the ſtone: and yet he retained, to a great degree, a remarkable cheerfulneſs of diſpoſition; and his faculties, though ſomewhat impaired, enabled him to derive great ſatisfaction from the converſation of his literary friends, to purſue a courſe of inceſſant reading, which was his principal amuſement, and to correct the learned works, eſpecially the Greek books, which were printed at his preſs. Within a few weeks before his death he ſunk under his maladies and the progreſs of decay, and at length terminated a life of ſingular reputation and uſefulneſs, on the 18th of November, 1777, in his 78th year. His numerous publications afford ample evidence of his talents and learning, and he was honoured with the friendſhip and patronage of many of the moſt diſtinguiſhed ornaments of the age in which he lived. As a learned printer he had no rival for more than half a century; and he was no leſs diſtinguiſhed by his moral qualities than by his mental abilities and literary attainments. Of his regard to religion, both in the principles and practice of it, his whole life afforded unqueſtionable evidence; his probity was inflexible; the promptitude with which he relieved every ſpecies of diſtreſs marked the benevolence of his mind: and his modeſty in endeavouring to conceal his benefactions reflects great honour on his memory. Although his literary avocations and natural temper induced him to ſeclude himſelf very much from the world, and from intercourſe with any perſons beſides men of letters, he was reckoned to poſſeſs an excellent talent for diſcriminating the real characters of mankind. In the decline of his life, and in his teſtamentary arrangements, he ſeems to have been influenced by a regard to two great objects; one was to repay the benefactions which had been conferred on his father at a time when he peculiarly needed aſſiſtance, and in this reſpect he manifeſted a very amiable diſpoſition; his other object was to be himſelf a benefactor to the meritorious in his own profeſſion. A tranſcript of his will, if our limits would admit of it, would bear ample teſtimony to the laudable views by which he was actuated; and we have been induced to enlarge in our account of him from real reſpect to his memory. After liberally providing for his only ſurviving ſon, by his firſt wife, (for he was twice married,) and allotting various bequeſts to his relations, executors, private friends, and his father's benefactors; he appropriated ſeveral ſums to "the benefit of printing," particulary with a view to the relief of aged printers, compoſitors, or preſſmen, and to the encouragement of the journeyman compoſitor, whom he particularly deſcribes, and who is required to be capable of reading and conſtruing Latin, and at leaſt of reading Greek fluently with accents: theſe latter bequeſts he committed to the direction and diſpoſal of the maſter, wardens, and aſſiſtants of the company of ſtationers. Mr. Bowyer was buried, agreeably to his own direction, at Low-Layton, in Eſſex, and a neat monument was erected, at the expence of his ſucceſſor Mr. J. Nichols, to his father's memory and his own, upon which is a Latin inſcription written by himſelf. A buſt of him is placed in Stationers' hall, with an Engliſh inſcription annexed to it, in his own words; and beſides this there are alſo a good portrait of his father, and another of his patron Mr. Nelſon; all preſented to the company by Mr. Nichols. Biographical and literary anecdotes of William Bowyer, printer, F. S. A., and of many of his learned friends," by John Nichols, his apprentice, partner, and ſucceſſor. 4to. 1782.

BOWYERS, artificers whoſe buſineſs is to make bows.

In which ſenſe, bowyers ſtand diſtinguiſhed from fletchers who made arrows.

The bowyers' company was incorporated in 1620, and conſiſts of a maſter, two wardens, twelve aſſiſtants, and thirty on the livery. See COMPANY.

BOX, in its moſt general acceptation, is uſed to denote a caſe for holding things; of which there are ſeveral kinds, as a ſalve-box, *pyxis unguentaria*, that uſed by ſurgeons to carry with them.

Box is ſometimes alſo uſed for a kind of meaſure, though variable according to the commodity. Thus the box of quickſilver contains from one to two hundred weight; of prunellas, about fourteen hundred; of rings for keys, two groſs, &c.

Box, in *Botany*. See BUXUS.

Box, *African*. See MYRSINE.

Box, *coach*, a place under the coachman's ſeat, wherein he puts what may be wanted for the ſervice of the coach or horſes.

Box, *dice*, a narrow deep cornet, channelled within, wherein the dice are ſhaken and thrown. This anſwers to what the Romans called *fritillus*; whence *crepitantes fritilli*, and, in Seneca, *reſonante fritillo*. The ſame author alſo uſes *concutere fritillum*, figuratively for playing. Beſides the *fritillus*, the Romans, for greater ſecurity, had another kind of dice-box, called *pyrgus*, and ſometimes *turricula*. It was placed immoveable in the middle of the table, being perforated or open at both ends, and channelled alſo within: over the top was put a kind of funnel, into which the dice were caſt out of the *fritillus*; whence deſcending, they fell through the bottom on the table; by which all practiſing on them with the fingers was effectually prevented. For want of ſome contrivance of this kind, our ſharpers have opportunities of playing divers tricks with the box, as palming, topping, ſlabbing, &c. Hyde. Hiſt. Nerdilud. § 5. p. 27, 28.

Box *iron*, a kind of caſe wherein the heaters are incloſed for ironing linen.

Box-*money*, at *Hazard*, is that which is paid the box-keeper, or him who furniſhes the box and dice. Betters have the advantage over caſters, as they have no box-money to pay, which at long run would beggar the moſt fortunate player. Hence ſome gameſters will never caſt, to ſave the expence of box-money.

Box *of a plough*, a name by which the farmers call that croſs-piece in the head of the plough, through which the ſpindle of the two wheels paſſes, and to which are faſtened the two croſs-ſtaves, ſerving, by their holes, to regulate the height of the beam, the tow-chain below, the ſtake which ſupports the bridle-chain above, and the gallows behind, into which are fixed the wilds with the crooks of iron, for the drawing of the whole plough along. This part of the plough is placed croſs-wiſe with the beam, and ſtands much below it, and not far from the ground. See Plough.

Box *of a rib-ſaw*, two thin iron plates fixed to a handle; in one of the iron-plates is an opening to receive a wedge, by which it is fixed to the ſaw.

Box, *ſtrong*, a coffer of iron, or of thick wood, ſecured with iron plates, and a lock with ſeveral bolts, difficult either to be opened or forced; chiefly uſed for putting money in.

Box *the compaſs*, in *Sea-language*, to repeat the oppoſite points of the compaſs alternately. Thus, N. S. N. by E. S. by W. N.N.E. S.S.W. &c.

Box *of the compaſs*, the ſquare wooden box which contains the mariner's compaſs; in the conſtruction of which no iron work is to be uſed.

Box *of a watch*, the caſe or cover.

Box *of a wheel*, the aperture wherein the axis turns.

Box-*puceron*, in *Entomology*, among old writers, the *coccus heſperidum*, an inſect that infeſts the box, in common, with various other evergreens. See Hesperidum. The word puceron, and baſtard puceron, appears to have been formerly applied indiſcriminately to ſeveral diſtinct genera of inſects that infeſt plants, as thoſe of the *cynips*, *aphis*, *thrips*, and others.

Box-*thorn*, in *Botany*. See Lycium.

Box *tree*, *ſand*. See Hura.

Box-*hauling*, in *Seamanſhip*, a particular method of veering a ſhip, when the ſwell of the ſea renders tacking impracticable, or when there is not room to veer by the common method of filling the head, and ſhivering the after-ſails. This operation is performed by putting the helm hard a-lee, which brings the ſhip's head to windward; the after-ſails, particularly the main-ſail, mizen, and mizen ſtay-ſail, are to be hauled up; as ſoon as the ſails begin to ſhake, haul in the weather-head braces, and the lee-fore, and fore-top bowlines; the ſhip's head will then fall off, which, together with the action of the water upon the rudder, by the ſternway ſhe has acquired, will bring her round until the wind is right aft; when her ſternway will have ceaſed, and then the helm is to be put hard a-weather: in the mean time the after-ſails are to be braced up, which will greatly aſſiſt in bringing the ſhip round; the main-ſail, mizen, and mizen ſtay-ſail are to be ſet, the head-yards braced up, as the ſhip comes to the wind, and the helm ſhifted to its proper poſition.

Box-*hill*, in *Geography*, near Dorking, in Surrey, England, received its name from the great number of box-trees which ornament its ſhelving ſides and ſummit. Many of theſe are ſaid to have been planted on the ſouth ſide of it by the celebrated earl of Arundel, in the reign of Charles I. Since that period they have proved highly beneficial to the proprietor, and to the public. "Formerly," ſays Mr. Gilpin, "the ſhips from the Levant brought ſuch quantities of this wood in ballaſt, that the trees on this hill could not find a purchaſer; and not having been cut in 65 years, they were growing in many parts cankered. But the war having diminiſhed the influx of it from the Mediterranean, ſeveral purchaſers began to offer for this native wood; and in the year 1795, ſir Harry Mildmay put it up to auction, and ſold it for the immenſe ſum of twelve thouſand pounds." This hill, and the neighbouring eminences, on which the box-tree flouriſhes in ſuch profuſion and perfection, ſhould be conſidered as making a part of the natural hiſtory of Britain. The extenſive proſpects commanded from this place, combining with its ſingular and beautiful ſcenery, frequently excite the attention and admiration of travellers. In its immediate vicinity are ſeveral elegant villas, and the river Mole, which runs under ground for ſome diſtance, winds its ſlow waters beneath the precipitous ſides of this hill. Gilpin's Obſervations on the Weſtern Part of England, 8vo. 1798. Manning's Hiſtory of Surrey, fol. vol. i. 1804.

BOXBERG, in *Geography*, a town of Germany, in the circle of the Lower Rhine, and the Palatinate; 34 miles E. of Heidelberg.

BOXBOROUGH, a townſhip of America, in Middleſex county, and ſtate of Maſſachuſetts, containing 387 inhabitants; 30 miles N. W. from Boſton.

BOXERS, a kind of *athletæ*, who combat or contend for victory with their fiſts. See Athletæ.

Boxers are the ſame with thoſe who, among the Romans, were called *pugiles*. The ancient boxers contended with ſuch force and fury, that they frequently daſhed out one another's teeth, broke their bones, and killed each other.

The ſtrange disfigurement theſe boxers underwent were ſuch that frequently they could not be known, and rendered them the objects of many railleries. In the Greek anthology, there are four epigrams of the poet Lucilius, and one of Lucian, wherein their disfigurements are pleaſantly enough expoſed. Anthol. Græc. lib. ii. Ep. 1, 2, 3. 10. 14.

Boxes, in a play-houſe, are little apartments behind and aſide of the pit. We ſay, the front boxes, the ſtage-boxes, &c.

Boxes *of the pump*. See Pump.

BOXFORD, in *Geography*, a ſmall townſhip of America, in Eſſex county, Maſſachuſetts, ſeated on the S. E. ſide of Merrimack river; 7 miles W. of Newbury port, and containing 852 inhabitants.

BOXHORNIUS, Mark Zuerius, in *Biography*, an eminent philologiſt, the ſon of James Zuerius, was born at Bergen-op-Zoom, in 1612, and aſſumed the name of his maternal grandfather, Henry Boxhorn, a convert from popery, and miniſter of Breda. At Breda, where he was educated, his proficiency in literature was ſuch, that at the age of 17 years he publiſhed ſome Latin poems that were well received, and at the age of 20 he was editor of ſome learned works. In 1632, he became profeſſor of rhetoric in the univerſity of Leyden. Declining to accept the invitation of queen Chriſtina to an honourable office in Sweden, he ſucceeded Daniel Heinſius in the profeſſorſhips of politics and hiſtory, both which departments he occupied with great honour to himſelf and benefit to his auditors. His literary career, however, was terminated by death, in 1653. His works were numerous and curious. He publiſhed, in addition to his juvenile labours as an editor, notes upon Juſtin, Pliny's Epiſtles, and Tacitus, and a "Commentary upon the Life of Agricola," by the laſt mentioned author. In a work written by him on the invention of printing, he endeavoured to eſtabliſh the claims of Haerlem in oppoſition to thoſe of Mentz. He alſo wrote a Latin account of the ſiege of Breda. Among his political pieces are enumerated his defences of the liberty of navigation claimed by the Dutch, a ſhort account of the Dutch conſtitution, and a vindication of the rights of Charles II. to the Engliſh throne. He wrote "Critical and hiſtorical diſſertations on the antiquities of Gaul and Scythia;" and "Sacred and prophane hiſtory from the birth of Chriſt, to the year 1650," in one volume 4to. His account of learned women never appeared. His letters, and his Latin and Greek poems, were printed after his death. Gen. Dict.

BOXING, the exerciſe of fighting with the fiſts, either naked or with a ſtone or leaden ball graſped in them: in which ſenſe boxing coincides with the *pugillatus* of the Romans, and what, on our amphitheatres, is ſometimes called trial of manhood. When the champions had *σφαιραι*, or balls, whether of lead or ſtone, it was properly denominated *σφαιρομαχια*, Potter, Arch. Græc. lib. ii. cap. 21. vol. i.

The ancient boxing differed from the *pugna cæſtuum*, in which the combatants had leathern thongs on their hands, and balls, to offend their antagoniſts; though this diſtinction is frequently overlooked, and fighting with the *cæſtus* ranked as part of the buſineſs of the *pugiles*. We may diſtinguiſh three ſpecies of boxing; *viz.* where both the head and hands were naked; where the hands were armed and the head naked; and where the head was covered with a kind of cap called AMPHOTIDES, and the hands alſo furniſhed with the *cæſtus*, which ſee.

Boxing is an ancient exerciſe, having been in uſe in the heroic times, before the invention of iron or weapons. Accordingly we find in the Latin and Greek poets, ſeveral deſcriptions of this rudeſt, and moſt dangerous of the gymnaſtic combats. In Homer, we have that of Epeus and Eurialus; in Theocritus, that of Pollux and Amycus; in Apollonius Rhodius an account of the ſame battle; in Virgil that of Dares and Entellus; and in Statius, and Valerius Flaccus, are relations of ſeveral other combatants. Dioſcor. Idyl. 22. Argonautic. l. 2. Æneid. l. 1. Theocritus, l. 6. Argonaut. l. 4.

Thoſe who prepared themſelves for it, uſed all the means that could be contrived to render themſelves fat and fleſhy, that they might be better able to endure blows: whence corpulent men or women were uſually called *pugiles*, according to Terence: "Siqua eſt habilior paulo, pugilem eſſe aiunt." M. Burette has given the hiſtory of the ancient pugilate, or boxing, with great exactneſs. Mem. Acad. Inſcript. tom. iv. p. 353, &c.

The athletæ ſometimes came immediately to blows, and began with charging in the moſt furious manner. Sometimes whole hours paſſed in haraſſing and fatiguing each other, by a continual extenſion of their arms, rendering their mutual blows ineffectual, and endeavouring by this mode of defence to keep off their adverſaries. But when they fought with the utmoſt fury, they aimed chiefly at the head and face, which parts they were moſt anxious to defend, by either avoiding or catching the blows that were aimed at them. When a combatant threw himſelf with all his energy upon another, they had a ſurpriſing addreſs in avoiding the attack, by a nimble turn of the body, which cauſed the incautious adverſary to fall, and deprived him of the victory. Notwithſtanding the ferocity with which the combatants contended, they were ſometimes ſo exhauſted by the duration of the combat, as to be under the neceſſity of making a truce, upon which the battle was ſuſpended for ſome minutes, which were employed in recovering from their fatigue, and rubbing off the ſweat with which they were bathed. They then renewed the fight, till one of them, by letting fall his arms through weakneſs, or by ſwooning away, indicated that he could no longer ſupport the pain and fatigue, and deſired quarter, which was confeſſing himſelf vanquiſhed.

This art, adapted, as one might conceive, only to a period of barbariſm, has in modern times been almoſt appropriated by the Engliſh; and about half a century ago it formed a part of the exhibitions at places of public amuſement. It was encouraged by the nobility, and even tolerated by the magiſtrates. Before the eſtabliſhment of Broughton's amphitheatre, a booth was erected at Tottenham court in London, the proprietor of which, Mr. Geo. Taylor, invited the profeſſors of the art of pugiliſm to diſplay their ſkill, and the public to attend their performances. The entrance money, amounting ſometimes to 100 or 150*l*, was ſhared among the performers, in ſuch proportion, that the victorious champion had two-thirds of it, and the vanquiſhed one-third; and in ſome caſes both had an equal ſhare. When complaints were made by the nobility and gentry of the inconvenience attending the exhibitions in Taylor's booth, they prevailed on Mr. Broughton, at that time of riſing fame in the claſs of pugiliſts, to build a place better adapted for the purpoſe. A ſubſcription was raiſed, and, in 1742, a building was erected behind Oxford road, and denominated "Broughton's new Amphitheatre." In this building there were, beſides a ſtage for the combatants, ſeats correſponding to the boxes, pit, and galleries in other theatres. In proceſs of time, the public taſte was refined and improved, ſo that exhibitions of this kind ceaſed to be popular, and ſunk into neglect. At a later period, the death of one of the combatants ſerved to render them ſtill more diſreputable, and unworthy of any patronage and encouragement. Inſtances, however, are often occurring of the renewal of theſe conteſts; but they are now ſo diſgraceful in the public eſtimation, and ſo much reſtrained and prohibited by the interference of the magiſtrates, that they are attended by few perſons above the loweſt claſs of the community, whenever, by eluding notice, they happen to take place.

BOXING, an operation in ſailing, ſomewhat ſimilar to box-hauling. It is performed by laying the head ſails aback, to receive the greateſt force of the wind in a line perpendicular to their ſurface, in order to bring the ſhip's head back into the line of her courſe, after ſhe had inclined to windward of it, by neglect of the perſon at the helm, or otherwiſe. But ſhould a ſhip be taken flat a-back, or through neglect, in not timely boxing her off, it ſhould cauſe the wind to be broad upon the other bow, and it ſhould be the wiſh of the officer to have her upon the ſame tack as before, then furl the helm over to that ſide, which juſt before was the weather; brail up the mizen, and mizen ſtay-ſail; raiſe the main-tack and ſheet, and ſquare the after-yards. In this ſituation of the helm and ſails, ſhe will pay round off upon her keel; and when ſhe has brought the wind aſt, and gathered head-way, ſhift the helm. The wind round upon the other quarter, haul aft the mizen and mizen ſtay-ſail ſheets, brace up the after-yards, get on board the main tack, and haul aft the ſheet. As ſhe comes to, right the helm, and trim ſharp as before.

BOXING, in *Ship building*, the projection left on the hauſe-pieces, in the wake of the hauſe-holes, where the planks do not run through.

Boxing is alſo uſed for the tapping of a tree, to make it yield its juice.

The boxing of maple is performed by making a hole with an axe or chiſſel into the ſide of the tree, about a foot from the ground; out of it flows a liquor from which ſugar is made. Phil. Tranſ. N° 364. See Maple, Bleeding-Birch, and Sap.

BOXMEER, in *Geography*, a town of Germany, ſituate on the weſt ſide of the Meuſe, on the frontiers of the duchy of Gueldres: 8 leagues E. of Bois-le-Duc, and 4 S.S.W. of Cleves.

BOXTEHUDE, a town of Germany, in the circle of Lower Saxony, and duchy of Bremen, ſeated on the river Eſte or Eſſe, navigable for boats to the Elbe. It is ſubject to the Danes; 14 miles W. of Hamburg. N. lat. 53° 40′. E. long. 9° 35′.

BOXTEL, a town of Brabant, ſeated on the Dommel, and furniſhed with ſluices; 5 miles S. of Bois le-Duc. N. lat. 51° 30′. E. long. 5° 15′.

BOY-Bishop, in *Antiquity*. See Bishop.

Boy, *St.* in *Geography*, a town of Spain, in the province of Catalonia; 6 miles S.W. of Barcelona.

BOYAR, or Boiar, a term uſed for a Ruſſian lord, or grandee. According to Becman, boyars are what, in other countries, are called the upper nobility; he adds, that the czar of Muſcovy, in his diplomas, names boyars before waywodes.

It has not yet been ſatisfactorily determined, what the ancient boyars were; whence they derived their deſcent; and how they maintained their dignity; and whether this dignity was conferred by the ſovereign; whether it attached to birth, or whether it ſprung from the rank and importance which they brought with them into the country. If we conſider them as the privy counſellors of the ſovereign, then their precedence ariſes merely from their office, or they muſt have poſſeſſed it by their birth. But it has been likewiſe affirmed that the boyars, now in general the moſt conſiderable of the Ruſſian nobility, came from abroad, were ſprung from foreign anceſtors, and brought their nobility into the empire with them. However, future reſearches are neceſſary for obtaining ſatisfaction, with regard to theſe queſtions. During the Tartarian and Mongolian ſovereignty no trace of them is found; and even during the reign of czar Ivan Vaſſillievitch I. no ſuch title appears, though it ſeems to have ariſen at that time, or very ſoon after it: for under the czar Ivan Vaſſillievitch II., the boyars had already endeavoured to collect a conſiderable force; but were much overawed by that monarch. In the ſucceeding period of diſtraction, occaſioned by the aſpiring views of the patriarch and his ſuperior clergy, the boyars ſeized the favourable opportunity of extending their power. It is alſo probable, that perſons of reſpectable birth from other countries, occupied high ſtations in Ruſſia, and on this account, as well as from the privileges brought with them, enjoyed great authority; and hence all boyars, *i. e.* the ſuperior officers, might take occaſion to aſſume a conſequence, which they afterwards, as opportunities occurred, endeavoured to enlarge. Although the boyars are always mentioned in hiſtory as perſons of diſtinction, yet the ſame hiſtory alſo informs us, that they received their dignity from the ſovereign alone, that it was entirely perſonal, and that it was not tranſmitted by inheritance from father to ſon. Accordingly, it depended on the will of the monarch, whether he would have many or few boyars: and, therefore, they can never be conſidered as native privileged deputies of the people, nor as perſons who could reſtrain the power of the ſovereign, or reſiſt him in the undue exertions of it. In ſome caſes, however, they uſurped an authority to which they had no juſt pretenſions, and then brought great diſtreſs upon the empire. At the drawing up of the uloſhenie, or old law of the land, they, as well as the clergy, were conſulted: but probably only as privy counſellors, under which deſcription they were generally noticed in the ukaſes. However, in order to prevent any further uſurpation and miſtakes, an edict was iſſued in 1701 by Peter I., that they ſhould no longer be mentioned at all in the ukaſes. From the authority they poſſeſſed, and with a natural deſire of extending it, it may be reaſonably preſumed, that they took a lead in the elections of the ſovereign princes, if they were not the prime managers of them; they without doubt thought themſelves the firſt perſonages after the ſovereign and the privileged repreſentatives of the people, eſpecially of all the reſt of the nobility; and this ſeems to be the reaſon why the latter are not named among the electors. The boyars, in early times, when wars were frequent, beſides having a ſhare in the election, were commanders of the army, as well as the miniſters and counſellors of the prince. The directing ſenate in the Ruſſian government, inſtituted by the emperor Peter I. about the year 1711, and raiſed to the rank of the ſupreme college of the empire, conſiſted at firſt of 9 boyars; and ſeems to have been created in the place of the old boyars. The boyars before his time ſat at the helm of ſtate in the capital, and officiated as viceroys in the provinces, deciding, commanding, and acting according to their own humours. But he abrogated the court of boyars, called "Boyarſkoi dvor," which had hitherto conſtituted the miniſtry of the czar or tzar, and without whoſe conſent nothing could be enacted, inſomuch that all the decrees of government began with theſe words, "By command of the tzar, and with the approbation of the boyars;" and ſubſtituted the ſenate in its room. Writers are not agreed as to the preciſe meaning of the word "boyar," or "boyarin." In the dictionaries it is made to denote a lord, a perſon of quality, or a nobleman. Sometimes it peculiarly denotes a ſoldier. In the Ruſſian language, "boyarin" ſignifies a gentleman, a perſon of diſtinction, or a maſter of a family: and the Ruſſian peaſant uſually ſtyles his nobleman, even though he has neither rank nor eſtate, boyarin, or contractedly, barin, and his ſpouſe, boyarina. Hence the taſk-ſervice, performed by the boors to their lord, is called "boyarſchtſchina." Tooke's view of the Ruſſian Empire, vol. ii.

BOYAU, in *Fortification*, a branch of the trenches; being a ditch covered with a parapet, which forms a communication between two trenches; it runs parallel to the defenſive works of the body of the place, and ſerves as a line of contravallation, to hinder the ſallies of the beſieged, and alſo to ſecure the miners. When it is a line or cut, that runs from the trenches to cover ſome ſpot of ground, it is drawn ſo that it may not be enfiladed, that is, that the ſhot from the town may not ſcour along it.

BOYCE, Dr. William, in *Biography*, organiſt and compoſer to his majeſty, was a muſician to whom our choral ſervice is greatly indebted, not only for his own excellent choral works, but for the well ſelected, correct, and ſpendid edition of our cathedral muſic, which he publiſhed in three volumes, large folio, upon the plan, and at the recommendation of his maſter and predeceſſor, Dr. Greene, to whom he ſerved an apprenticeſhip.

This eminent profeſſor (Boyce) was born at Joyners' hall, in the city, of which his father was houſekeeper, and with whom he reſided during celibacy. When he became a family-man, his reſidence was in Chancery-lane, to the end of the reign of his late majeſty George II., about which time he removed to Kenſington Gore, where he ended his days in 1779. He was educated at St. Paul's ſchool, and began his muſical career as a choriſter in that cathedral. When he loſt his treble voice, he was bound apprentice to Dr. Greene, then organiſt of the metropolitan church. The maſter and ſcholar ſeemed worthy of each other, living in the utmoſt cordiality and friendſhip; the maſter loving the pupil, and the pupil honouring and reſpecting the maſter, to the end of their lives.

In 1734, he was a candidate for the place of organiſt of St. Michael's church, Cornhill, with Froud, Young, James Worgan, and Kelway. But though he was unſucceſsful in this application, Kelway having been elected, yet he was appointed, the ſame year, to the place of organiſt of Oxford chapel; and, in 1736, upon the death of Weldon, when Kelway, being elected organiſt of St. Martin's in the Fields, reſigned his place at St. Michael's Cornhill, Boyce was not only elected organiſt of that church, but organiſt and compoſer in the chapel royal.

The ſame year he ſet "David's Lamentations over Saul and Jonathan," which was performed at the Apollo Society. About the year 1743, he produced his ſerenata of "Solomon," which was not only long and juſtly admired, as a pleaſing and elegant compoſition, but ſtill affords great delight to the friends of Engliſh muſic, whenever it is performed. His next publication was "Twelve Sonatas or Trios for two Violins and a Baſe," which were longer and more generally purchaſed, performed, and admired, than any productions of the kind in this kingdom, except thoſe of Corelli. They were not only in conſtant uſe, as chamber muſic, in private concerts, for which they were originally deſigned, but in our theatres, as act-tunes; and public gardens, as favourite pieces, during many years.

In 1749, he ſet the ode written by the Rev. Mr. Maſon, for the inſtallation of the late duke of Newcaſtle, as chancellor of the univerſity of Cambridge, at which time he was honoured with the degree of doctor in muſic by that univerſity. Soon after this event he ſet the "Chaplet," a muſical drama, written by the late Mr. Mendez, for Drury-lane theatre, which had a very favourable reception, and long run, and continued many years in uſe among the ſtock pieces for that theatre. Not long after the firſt performance of this drama, his friend Mr. Beard brought on the ſame ſtage the ſecular ode, written by Dryden, and originally ſet by Dr. Boyce for Hickford's room, or the Caſtle concert, where it was firſt performed, in ſtill life. This piece, though leſs ſucceſsful than the "Chaplet," by the animated exertions of Mr. Beard, was many times exhibited before it was wholly laid aſide. Theſe compoſitions, with occaſional ſingle ſongs for Vauxhall and Ranelagh, diſſeminated the fame of Dr. Boyce throughout the kingdom, as a dramatic and miſcellaneous compoſer, while his choral compoſitions for the king's chapel, for the feaſt of the ſons of the clergy at St. Paul's, and for the triennial meetings at the three cathedrals of Worceſter, Hereford, and Glouceſter, at the performances in all which places he conſtantly preſided till the time of his death, eſtabliſhed his reputation as an eccleſiaſtical compoſer and able maſter of harmony.

Dr. Boyce, with all due reverence for the abilities of Handel, was one of the few of our church compoſers who neither pillaged nor ſervilely imitated him. There is an original and ſterling merit in his productions, founded as much on the ſtudy of our own old maſters, as on the beſt models of other countries, that gives to all his works a peculiar ſtamp and character of his own, for ſtrength, clearneſs, and facility, without any mixture of ſtyles, or extraneous and heterogeneous ornaments.

On the deceaſe of Dr. Greene, in 1757, he was appointed maſter of the king's band, and, in 1758, on the death of Travers, organiſt of the chapel royal; of which he had ſucceeded Weldon, in 1736, as compoſer; ſo that he enjoyed three honourable appointments at once, which uſed to be ſupplied by three ſeveral profeſſors. The gout put an end to the exiſtence of this worthy man, and excellent compoſer, at the age of 69. He was ſucceeded in the chapel royal by Mr. (afterwards Dr.) Dupuis, and, as a maſter of his majeſty's band, by Mr. Stanley.

BOYD, Mark Alexander, a deſcendant of the ancient family of this name in Scotland, was born in Galloway in 1562, and placed for education at Glaſgow, under the care of his uncle, the archbiſhop. But being of an ungovernable and turbulent temper, he quarrelled with his preceptors, deſtroyed his books, and renounced the purſuits of literature. He then ſought to puſh his intereſt at court; and when all the endeavours of his friends to ſerve him in that ſituation proved ineffectual, they ſent him in a military capacity to the wars of the United Provinces, with a view of reſtraining the violence of his temper. From hence he ſoon removed to Paris, and loſt his whole ſtock of money by gaming. The diſtreſs that enſued ſeems to have brought him to reflection, and he determined to apply to literary ſtudies. Accordingly he repaired to Bourges, and attended the lectures of the famous civilian Cujacius. To this eminent profeſſor he recommended himſelf by peculiar attention and reſpect, and by adopting his taſte in Latin poetry; and thus he acquired a fondneſs for the antiquated ſtyle of Ennius, and of the older Latin poets. From Bourges he was driven by the plague to Lyons, and thence to Italy. On the renewal of the civil wars in France, he removed thither, and bore arms with reputation in the royal cauſe; and after a variety of adventures he returned to his native country, where he died in 1601. The talents and performances of Boyd have been much over-rated; and he has been repreſented as another "admirable Crichton." But though he poſſeſſed a vigorous and verſatile genius, he never acquired, probably on account of his indolence and diſſipation, any kind of diſtinguiſhed excellence. Beſides ſeveral manuſcripts which he left behind him, on political, critical, and poetical topics, his "Epiſtolæ Heroidum," and his "Hymni," were publiſhed in the "Deliciæ Poetarum Scotorum," printed at Amſterdam," in 2 vols. 12mo. 1637. His "Epiſtolæ" were inſcribed to James VI. of Scotland, or James I. of England, whom he repreſents as ſuperior to Pallas in wiſdom, and Mars in arms. As to the character of his poetry, it conſiſts in an imitation of the worſt manner of Ovid; and his hymns, which have no tincture of devotion, are poems to which he has annexed the title of ſome flower or herb, the qualities of which he has deſcribed. Biſhop Tanner informs us, that, beſides his epiſtles and hymns, he publiſhed two books of "Epigrams." Biog. Brit.

BOYDELL, John, a liberal patron of the arts, and an honour to his country, was born at Dorrington, in Shropſhire, on the 19th of January 1719. His father, who was a land-ſurveyor, intended his ſon for his own profeſſion; and, had it not been for one of thoſe little accidents which often determine the path that men are deſtined to walk, he had waſted that life, which has been ſo honourable to himſelf, and beneficial to this nation, in meaſuring and valuing the acres of Shropſhire ſquires, and the manors of Welch baronets. Fortunately for himſelf and the arts, a trifling incident gave a different direction to his mind, and led him to aim at the delineation of ſcenes more pictureſque than the ground-plans of houſes, boundaries of fields, or windings of obſcure roads. While he was yet very young, chance threw in his way "Baddeley's Views of different Country Seats;" and among them was one of Hawarden caſtle, Flintſhire; which being the ſeat of ſir John Glynn, by whom he was then employed in his profeſſional capacity, and in the pariſh of which his father was an inhabitant, naturally attracted his attention. An exact delineation of a building that he had ſo often contemplated, afforded him pleaſure, and excited an aſtoniſhment eaſier to be conceived than deſcribed. Conſidering it as an engraving, and reflecting that from the ſame copper might be taken an almoſt indefinite number of impreſſions, he determined to quit the pen, and take up the graver, as an inſtrument which would enable him to diſſeminate whatever work he could produce, in ſo much wider a circle. This reſolution was no ſooner made, than it was put in execution; for, with that ſpirit and perſeverance which he manifeſted in every ſucceding ſcene of life, he, at twenty-one years of age, walked up to the metropolis, and bound himſelf apprentice for ſeven years to Mr. Toms, the engraver of the print which had ſo forcibly attracted his attention. Theſe, and accidents equally trifling, ſometimes attract men of ſtrong minds into the path that leads direct to fame, and have been generally conſidered as proving that they were born with ſome peculiar genius for ſome peculiar ſtudy; though, after all, genius is perhaps little more than what a great moraliſt has defined it:—"a mind with ſtrong powers accidentally directed to ſome particular object." Sir J. Reynolds had the firſt fondneſs for his art excited by the peruſal of "Richardſon's Treatiſe on Painting;" and, as we have before obſerved, Mr. Boydell was induced to learn the art of engraving, by a coarſe print of a coarſe artiſt, repreſenting a miſ-ſhapen Gothic caſtle.

His conduct, during his apprenticeſhip, was eminently aſſiduous. Eager to attain all poſſible knowledge of an art on which his mind was bent, and of every thing that could be uſeful to him; and impelled by an induſtry that ſeemed inherent in his nature, he, whenever he could, attended the academy in St. Martin's-lane to perfect himſelf in drawing; his leiſure hours in the evening were devoted to the ſtudy of perſpective, and to the learning of French without the aid of a maſter. After very ſteadily purſuing his buſineſs for ſix years, and finding himſelf a better artiſt than his teacher, he bought from Mr. Toms the laſt year of his apprenticeſhip, and became his own maſter; and the firſt uſe that he made of his freedom was to return into his own country, where he married a very deſerving young perſon of a moſt reſpectable family, to whom he had an early attachment, and with whom he lived many years in great felicity.

In the year 1745, or 1746, he publiſhed ſix ſmall landſcapes, deſigned and engraved by himſelf. This publication, from his having, in moſt of the views, choſen a ſituation in which a bridge formed part of the ſcenery, was entitled "The Bridge-Book," and ſold for a ſhilling. Small as this ſum was, he ſometimes ſpoke with apparent pleaſure of a ſilverſmith in Duke's-court, St. Martin's-lane, having ſold ſo many, that when he ſettled his annual account, he thought it would be civil to take a ſilver pint mug in part of payment, and this mug he retained until his dying day. He afterwards deſigned and engraved many other views, generally of places in and about London, and publiſhed the greater part of them at the low price of one ſhilling each. But even at this early period, he was ſo much alive to fame, that after having paſſed ſeveral months in copying an hiſtorical picture of Coriolanus by Sebaſtian Concha, he ſo much diſliked his own engraving, that he cut the plate to pieces. Beſide theſe, he engraved many prints from Brocking, Berchem, Salvator Roſa, &c. The manner in which many of them are executed is highly reſpectable; and, being done at a time when the artiſt had much other buſineſs to attend to, diſplays an induſtry rarely to be parallelled, and proves, that had he devoted all his time to engraving, he would have ranked high in the profeſſion. His facility of execution, and unconquerable perſeverance, having thus enabled him to complete 152 prints, he collected the whole in one port-folio, and publiſhed it at five guineas. He modeſtly allowed, that he himſelf had not at that time arrived at any eminence in the art of engraving; and that thoſe prints are now chiefly valuable from a compariſon of them with the improved ſtate of the art within the laſt 50 years. In fact, there were at that time no eminent engravers in England; and Mr. Boydell ſaw the neceſſity of forcing the art by ſtimulating men of genius with ſuitable rewards. With the profits of the folio volume of prints above mentioned, he was enabled to pay very liberally the beſt artiſts of his time, and thus preſented the world with Engliſh engravings from the works of the greateſt maſters. The encouragement that he experienced from the public was equal to the ſpirit and patriotiſm of his undertaking, and ſoon laid the foundation of an ample fortune. He uſed to obſerve, that he believed the book we have alluded to was the firſt that ever made a lord mayor of London; and that when the ſmallneſs of the work was compared with what had followed, it would impreſs all young men with the truth of what he had often held out to them, "that induſtry, patience, and perſeverance, if united to moderate talents, are certain to ſurmount all difficulties." Mr. Boydell, though he never himſelf made any great progreſs as an engraver, was certainly the greateſt encourager of the art that this country ever knew. Engliſh engravings, which were before conſidered as extremely inferior to thoſe of foreign nations, began from that time to be highly prized; and the exportation of them ſoon became a valuable article of commerce. On the 5th of Auguſt, 1782, Mr. Boydell was choſen alderman of London, for the ward of Cheap, in the room of alderman Crichton, deceaſed.

Having been ſo ſucceſsful in promoting the art of engraving in this country, he reſolved to direct his next efforts to the eſtabliſhing of an Engliſh ſchool of hiſtorical painting; and juſtly conceiving that no ſubject could be more appropriate for ſuch a national attempt, than England's inſpired poet, and great painter of nature, Shakſpeare, he projected, and juſt lived to ſee completed, a moſt ſplendid edition of the works of that author, illuſtrated by engravings from paintings of the firſt artiſts that the country could furniſh, and of which the expence was prodigious. Theſe paintings afterwards formed what was termed "The Shakſpeare Gallery," in Pall-Mall; and we believe there are few individuals, poſſeſſed of the leaſt taſte, or even curioſity, who have not inſpected and been delighted by them.

In the year 1790, Mr. Boydell was choſen lord mayor of London; an office, of which he diſcharged the duties and the honours with a diligence, uprightneſs, and liberality, that may be equalled, but will rarely be exceeded.

After having expended, in his favourite plan of advancing the fine arts in England, no leſs a ſum than 350,000l. this worthy and venerable character was neceſſitated by the ſtoppage of his foreign trade during a dozen years of war, to apply to parliament, in the beginning of 1804, for permiſſion to diſpoſe of the Shakſpeare gallery, and his other collections of pictures and prints, by way of lottery. His letter to ſir John William Anderſon, bart. on the occaſion of his introducing a petition for that purpoſe to the houſe of commons, is preſerved in moſt of the reſpectable periodical

cal publications of the time, and will at once inform, inſtruct, and deeply affect the feelings of the reader. It is, however, too long for inſertion in this place; and, indeed, the facility of reference to the Gentleman's, the European, the Monthly Magazines, &c. render it little neceſſary.

[A coincidence that may be juſt worth mentioning here is, that by mere chance this article came under the writer's hand on the very day which, by the reſult of the lottery, transferred the property of this valuable collection to Mr. Taſſie, an artiſt of Leiceſter Square, the nephew of a late well known imitator of ancient cameos and intaglios.]

Mr. Boydell's death was occaſioned at laſt by a too ſcrupulous attention to his official duties. Always early in his attendance on public buſineſs, he arrived at the Seſſions-houſe in the Old Bailey, on Friday, the 7th December, 1804, before any of the other magiſtrates, and before the fires were lighted. Standing near a grate while this was done, the damps were drawn out, and he took a cold; this produced an inflammation of the lungs, which terminated his life on the Tueſday following. He was interred, with great civic pomp (the ſpontaneous reſult of private friendſhip and public reſpect), on the 19th of the ſame month, in the church of St. Olave, Jewry; leaving behind him, for the inſtruction of mankind, a ſtriking example to what heights of fame and fortune men may attain by the united efforts of perſevering induſtry, prudent enterprize, and honourable dealing. We have ſhewn how Mr. Boydell's 152 plates, engraved by himſelf, laid the foundation of his fortune. We underſtand, however, that he was alſo the means of making Mr. Woollet's genius known to the public, by employing him to engrave the Niobe and the Phaeton, from pictures by Wilſon. For the firſt of theſe he agreed to give Woollet 50 guineas, and when it was completed, paid him 100. The ſecond the artiſt agreed to engrave for 50 alſo; but Mr. Boydell paid him 120. The two prints were publiſhed by ſubſcription at 5s. each; and proof impreſſions have ſince been ſold at public auctions for ten, and ſometimes eleven guineas each!!

BOYER, ABEL, was born at Caſtres in 1664, and on occaſion of the revocation of the edict of Nantes, he became a refugee, and finally ſettled in England, where he became a conſiderable writer. His "French and Engliſh Dictionary," 4to. has been often publiſhed, and is well known; and ſo is his "French and Engliſh Grammar." His "Political State" was a monthly publication, commenced in January, 1710, and continued to November, 1729. He alſo wrote the "Hiſtory of king William," 3 vols. 8vo.;" "Annals of queen Anne," 11 vols. 8vo.; a French tranſlation of "Addiſon's Cato;" "Letters French and Engliſh;" an Engliſh tranſlation of "Telemachus;" "State Trials to that of the Earl of Oxford," and ſeveral other works. He died at Chelſea in 1729. Moreri. Gen. Biog.

BOYER, JOHN BAPTIST NICHOLAS, was born at Marſeilles, Auguſt the 5th, 1693. His father, intending to bring him up to buſineſs, gave him a ſuitable education, and, at a proper age, ſent him to Conſtantinople, to his uncle, who was conſul there; but finding him inclined to literature, and to the ſtudy of medicine, he ſent him, on his return from the Levant, to the univerſity at Montpellier. In the year 1717, he took the degree of doctor, and gave for his inaugural theſis, "A Diſſertation on Inoculation of the Small Pox," which he had ſeen practiſed at Conſtantinople. On the plague breaking out at Marſeilles, in 1720, he was ſent there with five other phyſicians; and his practice, or his conduct on that occaſion, having been approved, he was rewarded by the king with a penſion, and was made phyſician to a regiment of guards. He was ſome years after invited to Hunſpruche, a town in the biſhopric of Treves, where an infectious fever was making great ravages, and, in 1742, to Paris, on a ſimilar occaſion. His ſucceſs at theſe places occaſioned him to be ſent for to Beauvais, in 1750, where by his judicious management he prevented the ſpreading of an infectious fever, infeſting that country. For theſe ſervices he was honoured by the king with letters of nobility, and inveſted with the order of St. Michael. He died Jan. 1768. His works are, "Methode indiquée contre la maladie epidemique qui vient de regner à Beauvais," Paris, 1750, 4to. It conſiſts of only ten pages. "Methode a ſuivre dans le traitement de differentes maladies epidemiques qui regnent le plus ordinairement dans la generalite de Paris," 1761, 12mo. He wrote, in 1745, a "Memoir" on the diſeaſe infeſting the cattle at that time. It was ſent to the Royal Society in London, and procured him a place in the liſt of their foreign members. He alſo gave a new edition of the Codex medicamentarius," ſeu "Pharmacopæia Pariſienſis," 4to. a very uſeful and well digeſted work. Eloy. Dict. Hiſt.

BOYER'S *Bay*, in *Geography*, lies at the N.W. end of the iſland of St. Kitt's, in the Weſt Indies.

BOYER, in *Navigation*, a kind of Flemiſh ſloop, or ſmall veſſel of burden, having a boltſprit, a caſtle at each end, and a tall maſt; chiefly fit for the navigation of rivers, and, in many of its parts, reſembling a ſmack.

The boyer has a double bottom, and a forked maſt, that it may run better with the bowling-line, without driving.

BOYERA, in *Geography*, a village of Africa, in the kingdom of Anta, on the Gold coaſt, ſituate between Bourtry and Tokorari, and wholly inhabited by fiſhermen and labourers, who carry on a conſiderable trade with their neighbours by exchanging the fruits of the earth and fiſh for the produce of other countries. This village, and an adjoining one, called "Pandos," of the ſame deſcription, are known at ſea by a large pointed rock that lies before the coaſt.

BOYES, an order of American prieſts or magicians, uſed by the ſavages for calling up their gods, either to be revenged on thoſe who have done them any injury, or to be cured of ſome diſeaſe, wherewith they are infeſted, or to drive out ſome devil. They are alſo conſulted with regard to the event of their wars. Each boye has his peculiar deity; who is invoked by certain forms of words, ſung in a quaint tone, accompanied with the fumes of tobacco.

BOYEUPECANGA, in *Zoology*, the name of a very large ſerpent, diſtinguiſhed by this name on account of certain prominences on its back. It is a very large and remarkably thick ſerpent, and of very fatal poiſon. Ray.

BOYLE, RICHARD, in *Biography*, an accompliſhed ſtateſman, generally ſtyled the "Great earl of Cork," was the deſcendant of an eminent and honourable family in Herefordſhire, and the ſecond ſon of Roger Boyle, a younger brother, who ſettled at Canterbury, where he was born in 1566. Having purſued his ſtudies for ſome time at Bennet college in the univerſity of Cambridge, he removed to the Middle Temple with a view to the profeſſion of the law; but he ſoon changed his deſtination, and entered into the ſervice of ſir Richard Manwood, chief baron of the exchequer. This ſituation preſenting to him no proſpect of ſpeedy advancement, he went to Dublin in 1588; and, though his whole wealth amounted only to 27l. 3s. he had good recommendations, which, together with his own talents, introduced him into connection with the principal perſons employed in the government, to whom he rendered himſelf eminently uſeful. The buſineſs in which he was engaged afforded opportunities of acquiring a comprehenſive and accurate knowledge of the kingdom, and of the ſtate of public affairs, which he did not neglect duly to improve. His marriage alſo, in 1595, with a lady poſſeſſing 500l. *per annum* of landed property, ſerved to accelerate his advancement. By ſeveral advantageous purchaſes, at a time when land was of precarious tenure, and conſequently cheap, he laid the foundation of his future ample eſtate; and the office of clerk of the council, under ſir George Carew, in the province of Munſter, to which he was appointed by queen Elizabeth, ſerved to give him additional importance. His conſtant attendance on ſir George in all his expeditions againſt the Iriſh rebels, offered him various opportunities of ſingular ſervice to the ſtate, and of juſtifying the confidence that was repoſed in him. Accordingly, after the battle of Kingſale, A. D. 1601, in which the Iriſh and their Spaniſh auxiliaries were totally routed, he was diſpatched by his patron, the preſident of Munſter, to communicate the news of the victory to the queen: and he executed this commiſſion with ſuch diſpatch, and ſo much to the ſatisfaction of ſir George, that he was employed in another embaſſy to England, in order to obtain the queen's permiſſion for the preſident's return to his own country. In conſequence of the advice of his patron. Mr. Boyle purchaſed, at a low rate, ſir Walter Raleigh's eſtate in Ireland, conſiſting of 12,000 acres, in the counties of Cork and Waterford, which he ſo cultivated and improved as very much to enhance their value. In 1603 he married the daughter of ſir Geoffrey Fenton, and in the ſame year received the honour of knighthood from his friend and patron ſir G. Carew, then lord deputy of Ireland. The next ſtep of his progreſſive advancement to the high honour and ample fortune, which he afterwards acquired, was the office of privy-counſellor for the province of Munſter, to which he was appointed by king James in 1606; and as he had conſiderable eſtates in this province, he was enabled, by this promotion, to pay due attention, at the ſame time, to his own intereſt and to that of the public. With a view to both theſe objects, he took care to let his eſtates to Engliſh proteſtants only, and to erect ſeveral towns and boroughs, as well as ſome caſtles, for their ſecurity. His conduct was ſo much approved, that in 1612 he was promoted to the dignity of privy-counſellor for the kingdom of Ireland, and in 1616 to the rank of peerage, by the title of baron of Youghall, in the county of Cork, and in 1620 to that of viſcount Dungarvan and earl of Cork. By his active and unremitting exertions for promoting the ſecurity and proſperity of the Engliſh and proteſtant intereſt in Ireland, and improving the arts and manufactures of the country, he conciliated the favour of king Charles I., and obtained for his ſons, even in their infancy, ſeveral titles of diſtinction. As they grew up he ſettled them in ſeparate eſtates, and formed connections for his daughters with the beſt families in the country. At the caſtle of Liſmore, the centre of very ample domains, which on this account he choſe for his own reſidence, he lived in a ſtyle of princely ſplendour. In 1629 he was appointed one of the lords juſtices of Ireland; an office of high dignity and influence, which he held for many years; and in 1631 he was appointed lord treaſurer of the kingdom, accompanied with the unprecedented circumſtance of hereditary ſucceſſion in his family. But it has not continued in the ſole line of the houſe of Boyle; for, on the death of the laſt earl of Burlington, in 1753, the office was conferred by his late majeſty, on the then marquis of Hartington, who was not of the Boyle family; and it is now enjoyed by his ſon, the preſent duke of Devonſhire, who deſcends from a female branch. In the exerciſe of the powers with which he was inveſted, he aſſiduouſly executed the rigorous laws of queen Elizabeth againſt the papiſts; and for the more effectual ſuppreſſion of the popiſh religion and worſhip, he ſhut up ſeveral maſs-houſes both in Dublin and in the country. He was alſo active in providing a regular and competent ſubſiſtence for the army; and in tranſplanting a multitude of barbarous Iriſh "ſepts," or "clans," out of the fertile and well cultivated province of Leinſter, into the wilds and deſerts of the county of Kerry. He alſo took great pains in endeavouring to procure a mint to be ſettled in that county. Upon the arrival of lord Wentworth, who was appointed lord-deputy of Ireland in 1633, the high powers poſſeſſed and exerciſed by the earl of Cork excited jealouſy and oppoſition; and the cold civilities which at firſt paſſed between them terminated in open and avowed hoſtility. This hoſtility continued for ſeveral years; very much to the mortification and diſquietude of both parties. However, when the earl of Stafford was impeached before the houſe of lords in 1641, the earl of Cork, who was then in England, had an opportunity of retaliating by giving evidence againſt him. Soon after this event, and juſt before the commencement of the fatal rebellion in that country, he returned thither; and aſſuming a military capacity, exerted himſelf with all the ardour of youth, and collected an army among his tenants and dependants, at his own expence, which he committed to the command of his four ſons, diſtributing them through various parts of his extenſive domains, ſo as to ſecure them, in a great degree, againſt the depredations of the ſuperior forces of the Iriſh, and to gain many advantages over them. In this conteſt he loſt one of his ſons, who fell at the battle of Liſcarrol, in 1642; nor did the earl himſelf, whoſe active exertions overpowered a conſtitution already impaired by age, long ſurvive. In September, 1643, he cloſed his honourable career of private advancement and public ſervice, and was interred in his own chapel, in the pariſh church of Youghall, near the noble monument he had erected for his family. How well he deſerved the title of the "Great earl of Cork," under which appellation he is always mentioned, even among the native Iriſh, the hiſtorians of the intereſting period in which he lived have amply teſtified. "The noble earl of Cork, lord high-treaſurer," ſays ſir Richard Cox, an intelligent and impartial writer, in his introduction to the 2d volume of his Hiſtory of Ireland, "was one of the moſt extraordinary perſons, either that or any other age hath produced, with reſpect to the great and juſt acquiſitions of eſtate that he made, and the public works that he began and finiſhed, for the advancement of the Engliſh intereſt and the proteſtant religion in Ireland, as churches, alms-houſes, free-ſchools, bridges, caſtles, and towns, *viz.* Liſmore, Tallow, Cloghnakilty, Iniſkeen, Caſtletown, and Bandon, (which laſt place coſt him fourteen thouſand pounds,) inſomuch, that when Cromwell ſaw theſe prodigious improvements, which he little expected to find in Ireland, he declared, "that if there had been an earl of Cork in every province, it would have been impoſſible for the Iriſh to have raiſed a rebellion." And whilſt he was carrying on theſe ſolid works, he lived in his family at a rate of plenty that exceeded thoſe who conſumed great eſtates in the laviſh ways of ill-ordered exceſs. His motto, "God's providence is my inheritance," ſhews from whence he derived all his bleſſings, the greateſt of which was the numerous and noble poſterity he had to leave his eſtate unto." By his ſecond lady he had fifteen children, of whom many ſurvived him, and roſe to great eminence. Biog. Brit.

BOYLE, ROGER, earl of Orrery, fifth ſon of the great earl of Cork, was born in 1621, and created baron Broghill, of the kingdom of Ireland, at the age of ſeven years. At Dublin, where he received his education, he was diſtinguiſhed by his genius and application; and, in 1636, he ſet out on the tour of France and Italy. Upon his return from his travels, he found the country in great confuſion;

and having married the daughter of the earl of Suffolk, they landed in Ireland on the day when the rebellion in that kingdom broke out, viz. October 23, 1641. On this occaſion the poſt which his father aſſigned him was the defence of the caſtle of Liſmore, in which he behaved with equal prudence and valour: after the ceſſation of the conteſt between the proteſtants and popiſh parties in Ireland, he viſited England, and paid his reſpects to king Charles I. at Oxford; to whom he communicated information concerning the true ſtate of Ireland; and he returned with a commiſſion to lord Inchiquin, and inſtructions to act againſt the rebels, in which ſervice he aſſiſted that nobleman to the utmoſt of his power; and he continued his ſervice, as the only means of promoting the proteſtant intereſt, under the commiſſioners named by parliament, till the king's death. When this event took place, he left his country and retired to Marſton in Somerſetſhire, where he remained for ſome time in cloſe retirement; but here he formed a ſcheme of croſſing the ſeas, under a pretence of viſiting the Spaw, on account of his health, and of applying to Charles II. for a commiſſion to raiſe forces in Ireland, for the reſtoration of his majeſty and the recovery of his own eſtates. The committee of ſtate, however, were apprized of his deſign; and Cromwell, wiſhing to avail himſelf of his talents and influence, propoſed an interview with him. In this interview he was informed that the committee of ſtate knew the object of his leaving the kingdom, and that they had determined to make an example of him, if he himſelf had not interpoſed and diverted them from their purpoſe. Lord Broghill, finding that it was vain to diſſemble, and that Cromwell had copies of ſeveral letters which his lordſhip had ſent to thoſe in whom he had confided, and which he put into his hands, returned Cromwell thanks for his protection againſt the committee, and ſolicited inſtructions how he was to act in his peculiarly delicate and embarraſſed circumſtances. Cromwell aſſured him of the high opinion he entertained of his merit and character; and, as he had been appointed lord lieutenant of Ireland, he informed him, that he had obtained leave of the committee to offer his lordſhip the command of a general officer, if he would ſerve in the war for reducing the country; pledging himſelf at the ſame time, that no oaths or engagements would be impoſed upon him, and that he ſhould not be obliged to draw his ſword againſt any but the Iriſh rebels.' Whilſt his lordſhip was heſitating about accepting an offer ſo generous and unexpected, Cromwell urged the neceſſity of an immediate reſolution; as the committee, who were then ſitting, determined, if he refuſed the offer, to ſend him to the Tower. Lord Broghill, apprehending danger both to his liberty and life, and overpowered by the apparent frankneſs and generoſity of Cromwell's conduct, gave him his word and honour, that he would faithfully ſerve him againſt the Iriſh rebels. Accordingly he directed him to repair immediately to Briſtol, where he would find a ſupply of forces, and a ſufficient number of ſhips to tranſport him into Ireland. Having accepted Cromwell's commiſſion, he ſerved under him with great military ſkill and vigour in his Iriſh campaigns. After Cromwell's aſſumption of the protectorate, lord Broghill became his conſtant companion and confidential counſellor; and it has been ſaid, that he propoſed a matrimonial connection between the exiled king, Charles II. whom he had ſounded upon it, and whom he found not altogether averſe from the project, and Frances, the daughter of the protector, who was not inclined to adopt it. It has alſo been ſaid, that he adviſed Cromwell to reſtore the old conſtitution, and to aſſume the title of king. The meaſures he recommended, whilſt he enjoyed the confidence of the protector, were mild and lenient; and by theſe he equally ſerved both Cromwell and the nation. In parliament he oppoſed and defeated the deteſtable meaſure, propoſed by ſome party-men, which was that of a law for decimating the royal party. In 1656, lord Broghill accepted, on conditions previouſly ſtipulated, a commiſſion to govern Scotland for one year with abſolute authority; and in the execution of it he gave great ſatisfaction both to the Scots and to Cromwell. It redounds much to the credit of his lordſhip's judgment, that, notwithſtanding the number and influence of his enemies, and their frequent acceſs to the protector, he retained his confidence to the laſt, and poſſeſſed ſome of the moſt diſtinguiſhed poſts under his government, being a general officer in the army in Ireland, a member of both parliaments, a lord of Oliver's creation, and one of his confidential council. After the death of Cromwell he adhered faithfully to his ſon Richard, as long as he had any proſpect of maintaining his power; but as ſoon as he had diſſolved the parliament, he thought the government ſubverted, and himſelf abſolved from all obligations of attachment to the Cromwell family, conſidered as that of a prince. He, therefore, determined, for his own ſecurity, to withdraw to Ireland, and to aſſume his command in the province of Munſter. Availing himſelf of the advantages which his ſituation afforded him, he was eminently uſeful in reſtoring and re-eſtabliſhing the king's authority in Ireland; and ſoon after his arrival, he came over to England, and further ingratiated himſelf with his majeſty, by giving him full information with regard to the ſtate of parties in Ireland. For the ſervices that were rendered by him on this occaſion, he was advanced, in 1660, to the dignity of earl of Orrery, and appointed one of the lords juſtices for Ireland. Having drawn up the act of ſettlement for that kingdom, and thus ſecured the proteſtant intereſt, he withdrew in 1662, upon the appointment of the duke of Ormond to the lieutenancy, to his local juriſdiction in the province of Munſter. In this ſituation of ſubordinate authority, and comparative retirement, and though he was occaſionally afflicted with paroxyſms of the gout, he took an active part, when opportunity offered, in public affairs. He is ſaid to have had the ſeals offered him, when he made a viſit to England in 1665, but he declined accepting them. On his return to Munſter, he found ample employment for his talents during the progreſs of the Dutch and French war. Beſides other ſervices of an important nature which he performed, he put the town and harbour of Kinſale into ſuch a ſtate of defence, as to relieve the people amidſt their alarms and apprehenſions, and to render abortive the ſcheme for ſeizing it projected by the admiral of the French fleet. To him it was owing, that this port became afterwards a commodious refuge in time of war, both for our Eaſt and Weſt India fleets. Notwithſtanding all his labours and ſervices for the ſafety of the kingdom, an unhappy diſpute aroſe in 1667 between him and the duke of Ormond; ſo that he was deprived of his preſidential power in Munſter, and a charge of high treaſon was preferred againſt him in parliament, but it produced no effect. He ſtill retained the king's eſteem and confidence; though he was incapable of rendering him any eſſential ſervice. Accordingly he determined to ſpend his latter years in Ireland, and to devote himſelf to literary purſuits, to the improvement of his eſtates, to the encouragement of manufactures, and to the ſupport of the proteſtant intereſt. He cloſed his life, much reſpected by his domeſtics and tenants, and generally eſteemed, October 16, 1679. As a ſtateſman and ſoldier the earl of Orrery appeared with ſingular advantage; but though he was ambitious of obtaining the reputation of a writer, and publiſhed a great number of works, in proſe and verſe, tragedy, comedy, and romance, &c. none of them have eſcaped oblivion. As a patron and encourager of literature, he has been mentioned with reſpect and applauſe. Biog. Brit.

Boyle, Robert, an eminent philoſopher, illuſtrious by birth, learning, and virtue, was the 7th ſon of Richard, earl of Cork; and born at Liſmore in the county of Cork, February 25th, 1726 7. In his infancy he was committed to the care of a country nurſe, with inſtructions to bring him up hardily, as if he were her own ſon; and he thus acquired a ſtrong and vigorous conſtitution, which was afterwards enfeebled by too tender treatment. About the age of 3 years, he loſt his mother, whom he mentions with great reſpect; and whilſt he was under the care of his nurſe he acquired, by imitating ſome children of his own age, a habit of ſtuttering, which was never entirely cured. In his father's houſe he was taught to write a fair hand, and to ſpeak both French and Latin; and at this early period he manifeſted a docility and an invariable regard to truth, which very much endeared him to his father, and formed diſtinguiſhing features of his character in the progreſs of his life. In 1635, when he was about eight years of age, he was ſent to Eton college, of which ſir Henry Wotton was then provoſt, and placed under the care of Mr. Harriſon, to whoſe attention and judicious mode of inſtruction he acknowledged himſelf indebted for thoſe habits of aſſiduous inveſtigation in which he afterwards excelled. At Eton he was afflicted with an ague, which rendered it adviſable to divert his attention from the courſe of ſtudy which he was purſuing, and to allow him to ſeek that kind of amuſement, which the peruſal of romances might afford him; but though he was only 10 years old, he was ſenſible of the injury produced by this kind of deſultory reading; and as ſoon as he regained his health, he ſought a remedy for this evil in the ſeverer ſtudies of mathematics and laborious calculations. After having ſpent between 3 and 4 years at Eton, he was placed under private tuition for the recovery of his knowledge of the Latin language which he had nearly loſt; and in 1638 he accompanied his brother Francis on his foreign travels, under the care of Mr. Marcombes. In their route they paſſed from Dieppe to Rouen, Paris, and Lyons, and at length ſettled at Geneva, where they were directed to remain and to purſue their ſtudies. The principal objects of Mr. Boyle's attention were mathematics, in the proſecution of which he found great pleaſure; but beſides theſe, he employed himſelf in the ſtudy of rhetoric, logic, and political geography, and in acquiring the external accompliſhments of fencing, dancing, &c. At this time ſome incidents happened, which concurred with his naturally ſerious diſpoſition to direct his thoughts to the ſubject of religion; and in examining the evidences of the chriſtian revelation, he obtained full ſatiſfaction, notwithſtanding the doubts and difficulties which had occaſionally perplexed his mind; and was confirmed in his belief of its truth and importance. Having remained a year and three quarters at Geneva, he left it in September 1641, and traverſing various parts of Italy and Lombardy he arrived at Venice; and from Venice he proceeded to Florence, where he ſpent the winter. During his reſidence in this city, he acquired a knowledge of the Italian language; and employed a great part of his time in reading modern hiſtory; and in acquainting himſelf with the new diſcoveries of Galileo, who died in the vicinity of Florence at the period of Mr. Boyle's abode in this city. Towards the end of March, 1642, he commenced his journey to Rome, viſiting the moſt remarkable places in his route thither; and from Rome, where his ſtay was ſhort, he returned to Florence, and from thence he paſſed to Leghorn, and afterwards to Genoa. Having travelled through the country of Nice, and croſſed the ſea to Antibes, he proceeded to Marſeilles, where he expected bills of exchange; but, to his great mortification, he found a letter from his father informing him and his brother, that the rebellion had broke out in Ireland, and that it was with conſiderable difficulty that he had been able to procure for them a remittance of 250l. in order to defray their expences in their return to their own country. But through the negligence of the perſon, to whom the remittance was entruſted, they received no part of this money, and were, therefore, left in a deſtitute condition. At Geneva, whither they were enabled to proceed by the aſſiſtance of Mr. Marcombes, their governor, they waited two years without receiving any ſupplies; and by the diſpoſal of ſome jewels which they took up on his credit, as they proceeded on their journey homeward, their travelling expences were defrayed, and they arrived ſafe in England about the middle of the year 1644. On their arrival they received the news of their father's death; but Mr. Boyle was amply provided for by the bequeſt of the manor of Stalbridge in England and other eſtates in Ireland; and yet on account of the confuſion of the times, he was for ſome months unable to procure any money. However he was relieved on his arrival by his ſiſter the lady Ranelagh; and by her intereſt, and that of his brother lord Broghill, his Engliſh and Iriſh eſtates were ſecured for him. He alſo obtained leave to go to France; and having ſettled his accounts with Mr. Marcombes, he ſoon returned. In March, 1645, he retired to his manor of Stalbridge, and for 5 years devoted himſelf to various kinds of literary and ſcientific purſuits in this place; and more particularly to the ſtudy of natural philoſophy and chemiſtry. During this period of retirement, when he was about 20 years of age, he commenced that extenſive correſpondence with the principal perſons of his time, which he maintained, with diſtinguiſhing reputation to himſelf and benefit to the world, till near the cloſe of his life. In the liſt of his firſt literary friends and correſpondents, we may enumerate Mr. Francis Tallents, afterwards known to the world as the author of the "Chronological Tables;" Mr. Samuel Hartlib, whom he greatly eſteemed, and who is mentioned with peculiar commendation by Milton in his "Tractate of Education;" Dr. William Petty; Mr. John Beale, beſides many others. At this early age he manifeſted his zeal for religion, as well as his candour and chriſtian charity, by favouring the deſigns of Mr. John Drury, for effecting a reconciliation between the Lutherans and Calviniſts. He was likewiſe one of the firſt members of that learned body, which, after the reſtoration, was incorporated under the title of the *Royal Society*. Notwithſtanding the diſeaſe of the ſtone, with which he was afflicted, and numerous avocations which his various connections impoſed upon him, his application to ſtudy was aſſiduous and indefatigable; and before he had attained the age of 20, he had completed three treatiſes, viz. "Seraphic Love," "Eſſay on miſtaken Modeſty," and "the Swearer ſilenced," or "Free diſcourſe againſt ſwearing." Mr. Boyle was diſtinguiſhed as a promoter of literature and ſcience, by his patronage of others engaged in ſimilar purſuits, as well as by his own labour and writings. Accordingly, in 1651, Dr. Nathaniel Highmore, an eminent phyſician, dedicated to him his "Hiſtory of Generation," which was a work at that time much eſteemed. Whilſt he was unwearied in his chemical and philoſophical inquiries and experiments, he was no leſs attentive to the ſubject of religion; and with this view he applied to the ſtudy of the ſcriptures in their original languages. About the year 1652 he began his "Eſſay on Scripture;" and he continued it during frequent interruptions, occaſioned by his journies to Ireland at this period. Ireland, however, where he ſpent a great part of two years, from 1652 to 1654, did not afford favourable opportunity for proſecuting the reſearches to which he was devoted; and, therefore, he employed the time of his continuance there principally in anatomical diſſections, with the aſſiſtance of his friend Doctor, (afterwards ſir William) Petty. Upon his return to England in 1654, he ſettled at Oxford, where he had the advantage of purſuing his experiments, and where he enjoyed the ſociety of many learned friends, who occupied different ſituations in the univerſity. It was during his reſidence at Oxford, that he invented, or rather improved, the conſtruction of the air-pump (See Air-*pump*); an inſtrument, by the uſe of which he was enabled to perform a variety of experiments, relating to the gravity and elaſticity, and other qualities of the air, which entitled him to rank amongſt the firſt philoſophers of any age. He had at this early period of his ſcientific career renounced the philoſophy of Ariſtotle, as a ſyſtem of words inſtead of things; and attached to the only juſt and effectual mode of purſuing philoſophical reſearches by experiment, and fearing leſt his mind ſhould acquire any improper bias from the ingenuity of the author, he declined the peruſal of the works of Des Cartes, whoſe philoſophy was held by many in high eſtimation. Mr. Boyle did not reſtrict himſelf, whilſt he continued at Oxford, to the ſtudy of philoſophy; but he availed himſelf, in the proſecution of ſacred criticiſm, of the aſſiſtance of thoſe great orientaliſts, Dr. Edward Pococke, Mr. Thomas Hyde, Mr. Samuel Clarke, and Dr. Thomas Barlow, afterwards biſhop of Lincoln. His correſpondence was alſo at the ſame time very extenſive; and was carried on for the purpoſe of the promotion of ſcience with Mr. Henry Oldenburgh, afterwards ſecretary to the Royal Society, Dr. John Beale, John Evelyn, eſq. Dr. John Pett, and Dr. John Wallis, who honoured him with the dedication of his excellent treatiſe "De Cycloide, et corporibus inde genitis."

In 1659 as ſoon as he was made acquainted with the diſtreſſed circumſtances of Dr. Robert Sanderſon, afterwards biſhop of Lincoln, who had been deprived of his preferments on account of his attachment to the royal cauſe, he ſettled upon him an annuity of fifty pounds a year; a favour which was reſpectfully acknowledged by the doctor in his dedication of "Ten lectures on caſes of conſcience," delivered in Latin in 1647, and printed at Oxford in 1659.

After the reſtoration in 1660, Mr. Boyle was treated with great reſpect by the king, and alſo by the lord-treaſurer, lord Southampton, and lord chancellor Clarendon; and by the latter he was urged to enter into holy orders. Having conſidered the propoſal with due attention, his pious ſcruples determined him to decline the clerical office. In this year he publiſhed his "New experiments touching the ſpring of the air;" which involved him in a controverſy with Franciſcus Linus and Mr. Thomas Hobbes, and to which he annexed a defence in the edition of 1662; and alſo his diſcourſe "On ſeraphic love." Mr. Boyle's reputation had at this time extended itſelf to foreign countries; ſo that the grand duke of Tuſcany communicated to him by Mr. Southwell, then reſident at Florence, his wiſh to correſpond with him on philoſophical ſubjects. In 1661 he publiſhed his "Phyſiological eſſays, and other tracts;" and ſoon afterwards his "Sceptical chemiſt." Other treatiſes, to which he refers in this publication, and which were in great forwardneſs, were unfortunately loſt at the time of the great fire of London. In 1662, a grant of the forfeited impropriations in Ireland was obtained from the king in his name, but without his knowledge; and they were applied by him to the promotion of religion and learning. He was alſo appointed governor of the corporation for propagating the goſpel in New England; and in this office he was active and ſucceſsful in reſtoring an eſtate, of which they had been deprived by Col. Bedingfield, a papiſt, although they had given him for it a valuable conſideration. In the conduct of the concerns of this inſtitution he was, in other reſpects, eminently uſeful. When the Royal Society was incorporated in 1662, Mr. Boyle was appointed one of the council; and as he may juſtly be regarded as one of the founders of this ſociety, he continued through life one of its moſt uſeful and induſtrious members. In the following year he publiſhed his "Conſiderations on the uſefulneſs of experimental philoſophy;" his "Experiments and conſiderations upon colours," with "Obſervations on a diamond that ſhines in the dark;" and "Conſiderations on the ſtyle of the holy ſcripture," extracted from a larger work, entitled "An eſſay on ſcripture," publiſhed after his death by Mr. Peter Pett, attorney-general for Ireland. In 1664, Mr. Boyle was elected into the company of royal miners; this new connection, and other engagements of a benevolent and public nature, prevented his publiſhing any treatiſes, either on religion or philoſophy, in this year. But the year 1665 produced his "Occaſional reflections on ſeveral ſubjects;" to which is prefixed, "A diſcourſe concerning the nature and uſe of ſuch kind of writings." This piece, which had been written by Mr. Boyle in his youth, and at various intervals, was ludicrouſly attacked by Dr. Swift in his "Pious meditations upon a broomſtick, in the ſtyle of the honourable Robert Boyle." How far Mr. Boyle poſſeſſed in his youth, or acquired in his maturer years, a correct taſte and ſtyle of writing, particularly in works of imagination, it is now needleſs to inquire; it is ſufficient to obſerve, that no attack on the part of Dr. Swift can affect the fame of this diſtinguiſhed perſon, either as a man or a philoſopher. In this year Mr. Boyle, beſides ſome communications to the Royal Society, printed in the Philoſophical Tranſactions, publiſhed "Experiments and obſervations relative to an experimental hiſtory of cold, with ſeveral pieces thereunto annexed;" a work well received at the time, and containing a variety of obſervations and facts that have been uſeful to thoſe who, in more modern times, have directed their attention to this intereſting ſubject. Towards the cloſe of this year, his majeſty appointed Mr. Boyle provoſt of Eton college; but he declined accepting this honourable and lucrative office, becauſe he did not wiſh his ſtudies to be interrupted, and becauſe he thought it more ſuitable to a perſon in holy orders.

About this time Mr. Valentine Greatraks, an Iriſh gentleman of good family and competent fortune, and of a ſerious diſpoſition inclining to melancholy, perſuaded himſelf that he poſſeſſed the power of curing diſeaſes by ſtroaking. In ſome caſes he ſucceeded, but in others he failed. His performances, however, were ſo extraordinary, that they excited very general attention; and an account of them was publiſhed, by Mr. Henry Stubbs, in a letter entitled "The miraculous conformiſt, &c." and addreſſed to Mr. Boyle. To this letter Mr. Boyle replied; but his anſwer was not publiſhed till eighty years afterwards, in Dr. Birch's account of his life. Nevertheleſs, the ſentiments and reflections contained in it were probably communicated to his friends; and though they were expreſſed with a caution, candour, and judgment, that did him great honour, they were thought to countenance what ſome perſons deemed a deception, or the mere effects of enthuſiaſm, and they produced a controverſy of ſome continuance. As far as Mr. Boyle was concerned in this buſineſs, it will be ſufficient to obſerve, that, firmly believing the actual exerciſe of thoſe miraculous powers which atteſted the truth and divine origin of chriſtianity, and admitting, in conſequence of the extent and variety of his reſearches into the operations of nature, the reality of facts, which he could not immediately reconcile by analogy to the ſmall aggregate of human acquiſition, the letter, haſtily written by him in reply to Mr. Stubbs, did not at all derogate from his character as a philoſopher, or as a man of rational piety. He neither denied nor admitted the exiſtence of the miraculous power aſcribed to Mr. Greatraks; but allowing the facts, he propoſed a variety of inferences and queries, which demanded diſcuſſion; and in the whole of this controverſy he conducted himſelf in ſuch a manner as to avoid perſonal cenſure from any of the diſputants. See STROAKING.

In 1666 Dr. Wallis addreſſed to Mr. Boyle “An hypotheſis about the flux and reflux of the ſea,” printed in N° xvi. of the Philoſophical Tranſactions; and Dr. Sydenham dedicated to him his “Methodus curandi febres, propriis obſervationibus ſuperſtructa.” His own publications in this year were “Hydroſtatical paradoxes;” “The origin of forms and qualities, according to the corpuſcular philoſophy, illuſtrated by experiments;” and ſeveral papers communicated to the Royal Society, and printed in the Philoſophical Tranſactions of that period. In the diſpute that occurred in the eſtabliſhment of the Royal Society between the adherents to the Ariſtotelian or old philoſophy, and the advocates for the new method of philoſophiſing by experiments, Mr. Boyle took a decided part with the latter; but without incurring cenſure or reproach from the moſt violent of the oppoſite party. About this time Mr. Boyle removed to London, where he afterwards reſided, very much to the advantage of the Royal Society, which he countenanced by his perſonal preſence and philoſophical communications; as well as of the cauſe of ſcience in general.

In 1669, he publiſhed his “Continuation of new experiments touching the weight and ſpring of the air,” to which he annexed “A diſcourſe of the atmoſpheres of conſiſtent bodies;” and alſo “A diſcourſe of abſolute reſt in bodies;” together with other hydroſtatical pieces ſubjoined to his larger works: and in the ſame year he reviſed ſeveral of his former tracts, which had been tranſlated into Latin for the benefit of foreigners. In the following year appeared his treatiſe “Of the coſmical qualities of things,” containing a variety of intereſting facts and obſervations; and ſeveral papers, communicated to the Royal Society. At this time his ſtudies were interrupted by a ſtroke of the palſy, the effects of which were removed by a ſtrict attention to a proper regimen; ſo that he ſoon returned to his labours. In 1671, he publiſhed a ſecond volume of “Conſiderations touching the uſefulneſs of experimental philoſophy,” and “Tracts of a diſcovery of the admirable rarefaction of the air,” &c.; and in 1672 appeared his “Eſſay concerning the origin and virtue of gems,” 8vo.; his “Tracts, containing new experiments touching the relation between flame and air, and various other intereſting ſubjects chiefly relating to the ſtatical action of fluids;” and, in the Philoſophical Tranſactions, “Obſervations on ſhining fleſh,” and a paper on the effects of the varying preſſure of air. In 1673 he publiſhed “Eſſays on the ſtrange ſubtlety, great efficacy, and determinate nature, of effluviums;” “Experiments on the weighing and coercion of fire and flame,” 8vo.; and “A letter concerning ambergris,” communicated to the Royal Society. In 1674 appeared a collection of “Tracts on the ſaltneſs of the ſea; on a ſtatical hygroſcope; on the natural and preternatural ſtate of bodies, and on the poſitive or privative nature of cold,” 8vo.; “The excellency of theology compared with natural philoſophy,” 8vo.; “Tracts, containing ſuſpicions about the hidden qualities of the air: animadverſions upon Hobbes's problem concerning a vacuum; and a diſcourſe of the cauſe of attraction by ſuction,” 8vo.; and in this year he communicated to the editor of the Philoſophical Tranſactions, “An account of the two ſorts of Helmontian laudanum.” In 1675 he publiſhed “Some conſiderations about the reconcileableneſs of reaſon and religion,” by T. E. a layman; to which is annexed, by the publiſher, “A diſcourſe of Mr. Boyle about the poſſibility of the reſurrection,” 8vo. T. E. are ſuppoſed to be the final letters of his own name, as both theſe tracts are aſcribed to him. In this year he communicated to the Royal Society four papers, which appear in the Tranſactions: “On the air-bladders of fiſhes;” “A new eſſay inſtrument;” “New experiments touching the ſpring of the air,” &c.; and “An experimental diſcourſe of quickſilver growing hot with gold.” In 1676 he publiſhed “Experiments and notes about the mechanical origin of particular qualities,” in which he treats of alkalis and acids, heat and cold, taſtes, odours, volatility, fixity, corroſive action, precipitation, magnetiſm, and electricity; and he alſo communicated to the Royal Society two papers on the configuration of the ſurfaces of fluids in contact with each other.

Mr. Boyle, having been for ſeveral years an active and uſeful director of the Eaſt India company, wiſhed to avail himſelf of his office for propagating the goſpel in thoſe remote parts to which their commerce extended: and with this view he cauſed 500 copies of the four goſpels and acts of the apoſtles to be printed at Oxford, in the Malayan tongue, under the direction of Dr. Thomas Hyde, and to be ſent abroad at his own expence. For ſimilar purpoſes of piety and benevolence, he had tranſmitted, about three years before, ſeveral copies of Grotius's treatiſe “De veritate Chriſtianæ religionis,” tranſlated into Arabic by Dr. Edward Pococke, into the Levant.

In 1677 a miſcellaneous collection of his works, defective, and badly arranged, was printed in Latin at Geneva. In the following year he communicated to Mr. Hook a “Short memorial of ſome obſervations made upon an artificial ſubſtance that ſhines without any preceding illuſtration,” which was publiſhed in that philoſopher's “Cutlerian lectures:” this ſubſtance was the phoſphorus of urine. In this year he alſo publiſhed his “Hiſtorical narrative of a degradation of gold made by an anti-elixir,” 4to.; and he received a tribute of ſingular reſpect, in a letter from the great Newton, laying before him his ſentiments concerning an ethereal medium, which he afterwards propoſed, in his Optics, as the mechanical cauſe of gravitation. In the year 1680, he publiſhed “The aerial noctiluca,” 8vo.; and “An account of a new lamp,” in Hook's Philoſophical Collections; and he improved the ſecond edition of his “Sceptical Chemiſt.” Some perſons have very unwarrantably aſſerted, that Mr. Boyle aſſumed to himſelf the invention of phoſphorus, after having purchaſed the ſecret of Kraft. This calumny is refuted by his own narrative, in which he diſcuſſes the claims of Brand, Kunckel, and Kraft, and acknowledges the advantage which he derived, in the proſecution of his inquiries, from the information communicated to him by the latter, that the ſhining ſubſtance was obtained from a matter belonging to the human body. From the narrative it appears, that the aerial noctiluca was an aqueous ſolution, or diffuſion of phoſphorus, obtained by diſtillation from putrid urine in an experiment where his retort failed; and which did not prove altogether ſucceſsful. At the annual election of officers for this year, Mr. Boyle was elected preſident of the Royal Society; but having objections of delicacy with regard to the official oaths that are required, and for ſome other reaſons, he declined accepting the honour. At this time he contributed very liberally to the publication of Burnet's Hiſtory of the Reformation, as the author acknowledges in his preface to the ſecond volume. It was probably about the beginning of the year 1681, that he exerted himſelf for promoting the propagation of the goſpel among the Indians; as his letter on this ſubject was a reply to one from Mr. John Elliot, of New England, dated Nov. 4, 1680. From this letter, which is preſerved by Dr. Birch, it appears that he was a declared enemy to perſecution on account of religious opinions. In this year (1681) he publiſhed his "Diſcourſe of things above reaſon;" and in the following year, "New experiments and obſervations made upon the icy noctiluca," 8vo.; and alſo a "Continuation of new experiments phyſico-mechanical, touching the ſpring and weight of the air, with a large appendix." It appears that his icy noctiluca was the ſolid phoſphorus, which at firſt he found ſome difficulty in making; but from a paper left with the ſecretary of the Royal Society, to be opened after his death, which was nevertheleſs communicated to his friend Dr. Beale during his life, we find that he evaporated urine by diſtillation till it acquired the conſiſtence of ſyrup, then mixed it with ſiliceous ſand, and diſtilled by a ſtrong heat into a reſervoir containing water. See PHOSPHORUS. In 1683 he wrote a letter, ſanctioning and encouraging an undertaking of Mr. Fitzgerald for rendering ſea-water freſh; and in the following year, he publiſhed his "Natural hiſtory of human blood," and his "Experiments and conſiderations about the poroſity of bodies," both in 8vo. From a letter addreſſed to Mr. Boyle in 1684 by the learned Dr. Cudworth, it appears how highly he appreciated his talents and labours. After recommending a collection of his ſeveral treatiſes, he concludes in theſe terms: "You have much outdone Sir Francis Bacon in your natural experiments; and you have not inſinuated any thing, as he is thought to have done, tending to irreligion, but the contrary." The year 1685 produced his "Short memoirs for the natural experimental hiſtory of mineral waters," and an "Eſſay on the great effects of even languid and unheeded motion;" to which is annexed an "Experimental diſcourſe of ſome hitherto little regarded cauſes of the ſalubrity and inſalubrity of the air," 8vo. In the courſe of that year appeared in the Philoſophical Tranſactions, "An account of a ſtrangely ſelf-moving liquor," which was a compound of oils and bitumens, the ingredients of which, though known to himſelf, he has not ſpecified: and alſo a diſtinct treatiſe "On the reconcileableneſs of ſpecific medicines to the corpuſcular philoſophy, to which is annexed, a diſcourſe about the advantages of ſimple medicines," 8vo. Beſides theſe philoſophical tracts, he preſented the world in this year with a theological treatiſe, entitled, "Of the high veneration man's intellect owes to God, particularly for his wiſdom and power," 8vo. The only work that appeared in 1686, was his "Free inquiry into the vulgar and received notion of nature." This treatiſe was much admired by the advocates for pure religion and ſound philoſophy; it was tranſlated into Latin, and reprinted in the following year in 12mo. In this year, 1687, he publiſhed a work, written in his youth, entitled "The martyrdom of Theodora and Dydymia," and five decades of "Choice remedies," to which, when the work was reprinted in 1692, five more were added. In 1688 appeared "A diſquiſition about the final cauſes of natural things;" wherein it is inquired whether, and if at all, with what caution, a naturaliſt ſhould admit them; to which was ſubjoined, by way of appendix, "Some uncommon obſervations about vitiated ſight." About the beginning of this year our author found it expedient to apprize the public, by way of preface to his mutilated and unfiniſhed writings, and as a general apology for the ſtate in which they appeared, that ſome of his papers had been ſtolen from him, and that others had been deſtroyed by corroſive liquours. The decay of his health, and the derangement of his affairs in Ireland, obliged him to diminiſh the number of his communications to the Royal Society, and induced him to reſign the office of governor of the corporation for propagating the goſpel in New England. From other arrangements with regard to his private affairs, his papers, and the number of viſits which he received, it appeared that he was not without apprehenſions of an approaching change. The time, however, which he thus reſerved to himſelf, he induſtriouſly improved; as he availed himſelf of it for collecting various elaborate proceſſes in chemiſtry; which, as we are informed in a letter preſerved by Dr. Birch, "he left as a kind of hermetic legacy to the ſtudious diſciples of that art." This collection he committed to the care of a friend, enjoining him to impart it to the public faithfully, and without envy, verbatim in his own expreſſions. This friend is unknown, and the work was never publiſhed. From many circumſtances, however, we are led to conclude, that Mr. Boyle concurred, with many other ingenious alchymiſts of the age in which he lived, in believing, what is now rejected as a groundleſs opinion, the poſſibility of tranſmuting the baſer metals into gold; and hence, probably, he was led to take pains in procuring, in 1689, the repeal of the ſtatute of the 5th of Henry IV. againſt the multiplying of gold and ſilver.

In 1690, he publiſhed his "Medicina hydroſtatica, or hydroſtatics applied to the materia medica," 8vo. with the promiſe of a ſecond volume, which never appeared; and "The chriſtian virtuoſo, ſhewing, that by being addicted to experimental philoſophy, a man is rather aſſiſted, than indiſpoſed to be a good chriſtian;" a ſecond part of which was publiſhed in an imperfect ſtate, after his death. In 1691, he communicated to M. de la Croze, "An account of ſome obſervations made in the great congregation of waters, by lowering down bottles into the ſea 600 feet from the ſurface," which was printed by that author in the "Hiſtory of learning." Mr. Boyle's laſt work, publiſhed by himſelf, was his "Experimenta et obſervationes phyſicæ;" to which is added "A ſmall collection of ſtrange reports," 8vo.

In July of this year, Mr. Boyle executed his laſt will, and in the ſucceeding months his health rapidly declined. On the 23d of December, he loſt his ſiſter, lady Ranelagh, to whom he was affectionately attached, and within a week afterwards, viz. on the 30th of December, 1691, he departed this life, in the 65th year of his age, and was interred at the upper end of the ſouth ſide of the chancel of St. Martin's in the fields, near the remains of his ſiſter, with whom he had lived for the greateſt part of 47 years. His funeral ſermon was preached by Dr. Burnet, biſhop of Saliſbury.

Mr. Boyle's poſthumous works are as follow: 1. "The general hiſtory of the air, deſigned and begun," 1692, 4to.; 2. "Medicinal experiments, or a collection of choice remedies, for the moſt part ſimple, and eaſily prepared," 1692, 12mo; 3. "General heads for the natural hiſtory of a country, great or ſmall, drawn out for the uſe of travellers and navigators," 1692, 12mo.; 4. "A paper of the honourable Robert Boyle's, depoſited with the ſecretaries of the Royal Society, Oct. 14, 1680, and opened ſince his death; being an account of his making the phoſphorus, &c. Sept. 30, 1680;" 5. "An account of a way of examining waters, as to freſhneſs or ſaltneſs;" 6. "A free diſcourſe againſt cuſtomary ſwearing, and a diſſuaſive from curſing;" 1695, 8vo. 7. "Medicinal experiments, or a collection of choice remedies, chiefly ſimple and eaſily prepared, uſed in families, and fit for the ſervice of the country people ;" the 3d and laſt volume publiſhed from the author's original MSS. A collection of all Mr. Boyle's works was publiſhed in 1744, in 6 volumes folio, with a life prefixed, by Dr. Birch ; and in 6 vols. 4to. in 1772.

Mr. Boyle, as to his perſon, was tall and ſlender, and of a pale and emaciated countenance. His conſtitution was ſo delicate, that he regulated his cloathing by a thermometer : and he was occaſionally ſubject to ſuch debility of body, ſuch painful paroxyſms of the ſtone, and ſuch depreſſion of ſpirits, that we may be well aſtoniſhed at the number and variety of his ſcientific and literary performances. However, to the ſimplicity of his diet, and the ſtrict temperance which he obſerved, we may reaſonably aſcribe the degree of health which he enjoyed, and the length to which his life was protracted. His ſpeech was ſlow and deliberate, and ſubject to heſitation ; in his converſation he was unaſſuming, never dictating his own opinions, or urging his objections to thoſe of others with confidence, but rather propoſing them as topics of inquiry and diſcuſſion ; and in his manners he was ſingularly mild and courteous. Although he was a favourite at court, and indulged in free intercourſe with three ſucceſſive ſovereigns, viz. Charles II. James II. and William III., he never diſguiſed his ſentiments with regard to public men and meaſures ; but he took no active part in the politics of the eventful times in which he lived, preferring the purſuits of philoſophy, and the retirement which beſt ſuited his infirm frame and religious temper. To the rank of a peerage he never aſpired, but refuſed it whenever it was offered to him. One of the moſt prominent features of his character, was his ſincere and unaffected piety. This was exemplified in all his writings, and in the whole courſe of his life. Of his firm attachment to Chriſtianity, and of his ſolicitude for vindicating its truth, and extending the knowledge and influence of it, he exhibited many ſubſtantial proofs, both whilſt he lived, and at his death. Beſides the tranſlation of the goſpels and book of acts into the Malayan language, and of Grotius's treatiſe concerning the truth of the Chriſtian religion into Arabic, which we have already mentioned, and which was conducted at his own expence, he propoſed an impreſſion of the New Teſtament in the Turkiſh language ; and when the Turkey company undertook it, he liberally contributed towards accompliſhing it. A tranſlation and edition of the Bible in the Iriſh language coſt him 700l. ; and he defrayed a conſiderable part of the charge attending an impreſſion of the Welſh Bible, and of the Iriſh Bible for Scotland. He gave, during his life 300l. towards propagating the Chriſtian religion in America ; and as ſoon as he heard that the Eaſt India company were projecting a ſimilar deſign in the Eaſt, he ſent a donation of 100l. by way of example and encouragement in the proſecution of the ſcheme. Of the impropriations belonging to his eſtates he ordered conſiderable ſums to be given to the incumbents in theſe pariſhes, and even to the widows of thoſe who had died before this diſtribution of his bounty. This he did twice during his life to the amount of 600l., and he ordered another diſtribution as far as his eſtate would bear, by his will. In other reſpects, his charities were ſo numerous and extenſive, that they amounted, as biſhop Burnet informs us, from his own knowledge, to upwards of 1000l. per annum. The annuity eſtabliſhed by his will for providing a ſeries of lectures in defence of Chriſtianity, affords further evidence of the benevolence of his temper, and of his concern for promoting the intereſts of religion. See BOYLE'S *Lectures*. His zeal in the cauſe of religion, though it was ardent and active, was free from the leaſt tincture of bigotry and intolerance. Whilſt he adhered to the eſtabliſhed church, he entertained the moſt undiſſembled charity towards all who differed from him in opinion : nor did he ever expreſs himſelf in ſtronger terms, and with a greater degree of indignation, than when he condemned every kind of ſeverity and perſecution in the province of religion. Burnet in his funeral eulogy informs us, that his knowledge comprehended Hebrew and the other Oriental languages, the writings of the moſt eminent fathers, commentaries on the ſcriptures, religious controverſies, and the whole body of divinity. He repreſents him as being acquainted with the whole compaſs of the mathematical ſciences, and as well verſed even in the moſt abſtruſe parts of geometry. Geography, navigation, and books of travels he had recourſe to for the relaxation of his mind, and the amuſement of his intervals of leiſure. Of his knowledge with regard to ſubjects of natural hiſtory, chemiſtry, and experimental philoſophy, his various reſearches and diſcoveries, recorded in his numerous publications already recited, afford ample evidence. Mr. Boyle, indeed, poſſeſſed in an eminent degree thoſe qualities, which juſtify his being ranked among the firſt philoſophers of any age or country. He was diſtinguiſhed by the comprehenſion of his views, and the extent and variety of his reſearches, by indefatigable diligence and invincible perſeverance in his collection of facts and inveſtigation of their cauſes, by a total freedom from any preconceived attachment to theories and ſyſtems, by candour in diſcuſſing the opinions of others, and by fidelity, modeſty and perſpicuity in the narration of his own performances. Mr. John Hughes might well ſay of him (Spectator N° 554), after obſerving that he was born the ſame year in which lord Bacon died, that he was the perſon deſigned by nature to ſucceed to the labours and inquiries of that extraordinary genius. It would be endleſs to recount the teſtimonies in commendation of him, that might be collected from the writings of the moſt illuſtrious foreigners, and of the beſt judges of his merit in our own country. It will be ſufficient to ſay, that he is uniformly ranked with Bacon and Newton ; that his reſearches and experiments have led the way to many modern diſcoveries both in philoſophy and chemiſtry : and that his writings will ever be held in high eſtimation by every friend of ſcience. "They cannot be read," ſays one of his biographers, "without improvement ; and in theſe alone, if no life of Boyle had ever been written, the reader would behold a man truly deſerving of the affection, the eſteem, and the admiration of ſucceeding ages." Boyle's account of himſelf, under the name of Philocetus. Birch's life of Boyle, prefixed to his works. Burnet's funeral ſermon. Biog. Brit. Birch's Hiſt. of the Royal Society. Phil. Tranſ.

BOYLE, CHARLES, fourth earl of Orrery, and baron Marſton in England, was the ſecond ſon of Roger, ſecond earl of Orrery, and was born at Chelſea in 1676. At the age of 15 he was entered at Chriſt-church college in the univerſity of Oxford, where his tutors were Dr. Atterbury afterwards biſhop of Rocheſter, and Dr. Freind. His application and proficiency were ſo diſtinguiſhed, that he was ſtyled by Dr. Aldrich, the dean, "the great ornament of our college," and deputed to prepare an edition of ſome claſſic author, for his annual publication. The book recommended by the dean was the "epiſtles of Phalaris," of which a ſplendid edition appeared in 1695. This publication gave riſe to a controverſy, the particulars of which have been already detailed under the article *Bentley*. We ſhall here add, that from a letter of biſhop Atterbury to Mr. Boyle, written in 1698, (ſee Epiſtolary Correſpondence,

ence, &c. publiſhed by Mr. Nichols, vol. ii.) it appears, that the former laid the deſign of the celebrated book, in anſwer to Bentley's diſſertation, wrote above half of it, reviſed a good part of the reſt, and tranſcribed the whole. Upon the death of his father, Mr. Boyle quitted the univerſity and entered into public life. He was choſen as a member of the houſe of commons in 1700; and when his brother Lionel died in 1703, he ſucceeded to the title of the earl of Orrery. For his ſervices in the army, he was elected, in 1705, one of the knights' companions of the moſt ancient order of the thiſtle; and as a major-general, to which rank he was advanced in 1709, he diſtinguiſhed himſelf at the battle of the Wood in Flanders. He afterwards reſided for ſome time at Bruſſels, as the queen's envoy to the ſtates of Brabant and Flanders: and for his faithful diſcharge of this truſt, he was raiſed to the dignity of a Britiſh peer. On the acceſſion of George I. he received additional honours; but during the abſence of the king at Hanover in 1716, his regiment was taken from him: upon which he reſigned his poſt of lord of the bed-chamber, and withdrew from public affairs. When Layer's plot broke out, he was ſuſpected by the government, and committed to the Tower, whence, after being confined 6 months, he was firſt liberated by bail, and at length diſcharged. From this time he amuſed himſelf with his library and philoſophical apparatus, till his death, which happened in Auguſt 1731. He was much eſteemed for his domeſtic and ſocial qualities; and reſpected for his talents and literary attainments. He was the author of a comedy, entitled "As you find it," and alſo of ſome ſongs and occaſional poems; but his favourite ſtudies were of a different kind. The aſtronomical inſtrument called an "orrery," and firſt invented by Rowley, whom he patronized, derived its name from his title. See ORRERY. Biog. Brit.

BOYLE, JOHN, earl of Cork and Orrery, only ſon of Charles, fourth earl of Orrery, by lady Cecil, daughter of the earl of Exeter, was born in 1707, and for his early education entruſted to the care of Mr. Fenton, the poet. From Weſtminſter ſchool, whither he had been ſent at a proper age, he removed to Chriſt-church college, Oxford. As an inſtance of his filial piety, which does him honour, it is related, that when his father was committed to the Tower, he earneſtly intreated to be confined with him; but this indulgence was refuſed. Soon after the completion of his 21ſt year, in 1728, he married lady Harriet Hamilton, the youngeſt daughter of George, earl of Orkney. A diſſenſion which occurred between the two earls produced a temporary miſunderſtanding between the earl of Orrery and his ſon. This miſunderſtanding is ſaid to have originated in lord Boyle's refuſal to ſuffer his wife to ſit at table with his father's miſtreſs. However this be, the ſon's conduct on the occaſion, and in a ſituation peculiarly delicate and trying, reflected great honour on his judgment and temper. Although a reconciliation had been effected between the father and the ſon, yet the latter found reaſon to regret their diſſenſion: for under the influence of a prejudice haſtily conceived, the earl had made his will, and bequeathed his valuable library, conſiſting of above 10,000 volumes, with the exception of the journals of the houſe of peers, and books relating to the Engliſh hiſtory and conſtitution, bequeathed to his ſon, and a fine collection of philoſophical inſtruments, to the college of Chriſt-church. After their reconciliation, he determined to alter his will, and had ſent for his attorney with this view; but the ſuddenneſs of his deceaſe prevented the execution of his juſt deſign. The young lord, however, behaved on the occaſion with a filial piety and generoſity, which entail ſingular honour on his memory. For though his father had died conſiderably in debt, and had left legacies to a large amount to perſons who were no relations, he took his debts upon himſelf, paid the legacies, and ſent the books and mathematical inſtruments, within the limited time, to Chriſt-church. The loſs of his father, aggravated by the circumſtances now recited, made a deep impreſſion upon his mind, and was ſucceeded by a fit of illneſs, which endangered his life. Of the acuteneſs of his feelings we may form ſome judgment by the following lines addreſſed to a friend, in return for a conſolatory letter received by him at Bath, and incloſing a copy of verſes, which exhorted him to diſpel his grief by poetry, and to ſhew that Bath could inſpire as well as Tunbridge, where, in the preceding year, he had written ſome humourous verſes.

> "Nor Bath, nor Tunbridge, can my lays inſpire,
> Nor radiant beauty make me ſtrike the lyre;
> Far from the buſy crowd I ſit forlorn,
> And ſigh in ſecret, and in ſilence mourn:
> Nor of my anguiſh ever find an end;
> I weep a father, but I've loſt a friend."

Upon the recovery of his health and ſpirits, he took his ſeat in the houſe of peers in January 1732, and diſtinguiſhed himſelf by his oppoſition to ſir Robert Walpole's adminiſtration, and particularly by his ſpeech againſt the mutiny bill, and a ſtanding army, which was much applauded. However the delicacy of his health, his love of retirement, and the neceſſity of occaſional reſidence in Ireland, precluded him from a regular attendance on his parliamentary duty. During his reſidence in Ireland, he became acquainted with dean Swift, who profeſſed a high regard for him, and introduced him to the friendſhip of Mr. Pope. Upon his return to England, in 1733, he retired to his ſeat at Marſton in Somerſetſhire, and amuſed himſelf in building, planting, and improving both his eſtate and his library. In 1737 he took a houſe in town, for the convenience of ſuperintending the education of his ſons at Weſtminſter ſchool. Having loſt his firſt lady in 1732, he married a ſecond wife in 1738; and with both he enjoyed the moſt uninterrupted ſtate of domeſtic felicity. In 1739 he publiſhed a new edition, in 2 volumes 8vo. of the dramatic works of his great grandfather, Roger, earl of Orrery, and, in 1742, his ſtate letters in one volume folio. The firſt of his own performances, which was Imitations of the firſt and fifth odes of the firſt book of Horace, with remarks on the peculiar excellencies of this poet, and on the tranſlations of Dacier and Sanadon, appeared in 1741, fol. In 1743 his lordſhip was preſented, by the univerſity of Oxford, with the honorary degree of doctor of civil law, and he was likewiſe elected a fellow of the Royal Society. In 1746 he removed to Caledon in Ireland, where he reſided, with little intermiſſion, till the year 1750; employing his intervals of leiſure in laying out gardens and plantations, and in various ſubſtantial and ornamental improvements. On his return to Marſton, he purſued thoſe alterations and improvements which he had begun at a former period. In the mean while, the employment of his winter-evenings was his "Tranſlation of the Letters of Pliny the Younger, with obſervations on each letter, and an eſſay on Pliny's life," which was publiſhed at London in 1751, in 2 volumes 4to. and ſince reprinted in 8vo. This work was well received, and eſtabliſhed the reputation of the author as a polite ſcholar; and it would have ſtill retained its character as a ſtandard work of the kind, if it had not ſuffered by the ſuperior elegance of Mr. Melmoth's tranſlation. In the ſame year appeared his "Remarks on the life and writings of Dr. Swift;" in a ſeries of Letters addreſſed to his ſecond ſon; which, abounding with popular anecdotes, met with a very rapid ſale, though it gave occaſion to many ſtrictures and attacks, on account of the freedom with which it repreſented the defects as well as the excellencies of the character of his old friend. The portrait it exhibits is, however, deemed more faithful than ſeveral others of a more flattering kind. In 1753 lord Orrery ſucceeded to the Iriſh titles of Richard the third earl of Burlington and fourth earl of Cork, who died without male iſſue. His lordſhip continued to amuſe himſelf and the world by occaſional writings; and communicated ſeveral papers, chiefly of the humourous kind, to the periodical publications, entitled, "The World," and "The Connoiſſeur;" the former conducted by Mr. Moore, and the latter by Mr. Thornton and Mr. Colman. In 1754, he ſet out on a tour to Italy, and reſided nearly a year at Florence, where he acquired univerſal eſteem, and where he collected materials for his hiſtory of Tuſcany, which he propoſed to publiſh in a ſeries of letters; but of theſe he only finiſhed twelve, which were publiſhed after his death in 1774. From Italy he returned to Marſton in 1755; but the laſt years of his life were rendered peculiarly diſtreſſing to him by the loſs of his wife and his eldeſt ſon, and by frequent and ſevere paroxyſms of the gout. Theſe trials, however, he bore with a fortitude and reſignation which did honour to his principles and character, both as a philoſopher and a Chriſtian. In his diſtreſs he ſought refuge, like Pliny, in his ſtudies; and amuſed himſelf by publiſhing, in 1759, from an original MS. "Memoirs of the life of Robert Cary, earl of Monmouth," with a preface, explanatory notes, and a tender dedication to his youngeſt ſon. He alſo, in the ſame year, wrote a preface to Mrs. Lennox's tranſlation of Brumoy's Greek theatre; and he tranſlated "The Diſcourſe upon the theatre of the Greeks," "The original of tragedy," and "The parallel of the theatres." Some ſmaller pieces, written by his lordſhip, are diſperſed in the periodical publications of his time. His laſt work, which was poſthumous, is his "Letters from Italy," written in the years 1754 and 1755, and publiſhed in 1774, by the Rev. John Duncombe, who hath prefixed a life of his lordſhip. In his laſt illneſs he is ſaid to have burnt many MSS. and, among them, the continuation of his letters from Italy, on account of their not being corrected and fairly tranſcribed. It is alſo apprehended, that his Florentine hiſtory underwent the ſame fate. At length this truly accompliſhed and amiable nobleman fell a ſacrifice to an hereditary gout, at a comparatively early period, in November 1762, in the 56th year of his age; and his remains were interred near to thoſe of his ſecond lady, in the burial place of his family in Frome church. He was ſucceeded as earl of Cork and Orrery by Hamilton, his ſecond ſon by his firſt counteſs; and on his death the titles and eſtate of the family devolved on Edmund, his ſon by his ſecond lady, who became the ſeventh earl of Cork and Orrery.

From the tribute of juſt reſpect paid to his memory by the writer of his life, we learn, among other particulars, that "in every domeſtic and ſocial relation, in all the endearing connections of life, as a huſband, a father, a friend, a maſter, he had few equals. The luſtre which he received from rank and title, and from the perſonal merit of his family, he reflected back, unimpaired and undiminiſhed; and though the poſt of honour, which he choſe and preferred, was "a private ſtation;" though he was neither a ſtateſman nor a ſoldier, like the firſt lord Cork, the firſt lord Orrery, and his own father; the rival of Palladio, like the late lord Burlington; or the rival of Bacon, like Mr. Robert Boyle; yet, in a general taſte for literature, and, as they are commonly called, polite ſtudies, he was by no means inferior to his anceſtors."—"He loved truth even to a degree of adoration. He was a real Chriſtian; and, as ſuch, conſtantly hoped for a better life; there truſting to know the real cauſes of thoſe effects, which here ſtruck him with wonder, but not with doubt." Mr. Duncombe proceeds to exhibit, in ſeveral inſtances, the ſtriking reſemblance between the earl of Orrery and Pliny, his favourite Roman. With regard to religion, his ſentiments were rational, and his moral conduct as irreproachable and exemplary, as his manners were elegant and accompliſhed. His political principles were thoſe of a diſintereſted patriot, and an ardent lover of liberty. His ſentiments and feelings on this latter ſubject are admirably diſplayed in the following lines, extracted from one of his pieces annexed to his "Tranſlation of Pliny," and expreſſing the love of Britons for liberty:—

"With native freedom, as with courage bleſt,
Chains, and each mark of thraldom we deteſt.
'Tis heaven's high gift, 'tis nature's great decree,
That none be ſlaves, whom God himſelf made free.
Revere we ought thoſe powers which we entruſt,
But to ourſelves be reſolutely juſt:
Scorn baſe corruption, nor, like ſlaves, diſown
The laws that fix'd our monarch in his throne:
For well we know, by Truth's eternal rules,
Where ſlaves are ſubjects, ſubjects muſt be fools.
Exert but reaſon, liberty will reign,
And tyranny exalt her impious head in vain."

Biog. Brit.

Boyle, in *Geography*, a market and poſt town of the county of Roſcommon, and province of Connaught, Ireland, ſometimes, but improperly, called *Abbey-Boyle.* It is ſituated on the river Boyle over which it has two ſtone bridges. In 1786, it contained about 200 families, and has probably increaſed; its linen markets having of late become conſiderable from the improved ſtate of the yarn and linen manufactures in its neighbourhood. This town had a caſtle, which was of great ſtrength, having held out during the civil war of 1641. It was one of the new corporations in the reign of James I. and continued to ſend two members to parliament until the act of union deprived it of that privilege. In the neighbourhood, and at preſent incloſed within the demeſne of lord Kingſton, is the ruin of the abbey of Boyle, finely ſituated near Lough Key, from which the town derived its name, and probably its exiſtence. It belonged to the Ciſtertian monks, and was founded in 1161, after three or four other places had been tried, and not found ſufficiently argeeable. The monkiſh records mention ſeveral noble converts who took the habit of the order, and probably enriched it with conſiderable benefactions; and they alſo mention ſome inſtances of ſacrilegious plunder, in the wars which for ſo long a time diſtracted Ireland. When the diſſolution took place, the property of the abbey was found to be very conſiderable, and was granted to ſir John King anceſtor of the earl of Kingſton, by James I. in 1603, in reward of his ſervices. The remains of this ancient erection are ſufficient to ſhew its former magnificence, and deſerve the attention of the antiquarian. The architecture is Gothic, and the arches are eſteemed for their noble elevation and grandeur; and are of ſo firm a texture as to have withſtood the ſevereſt ſhocks. Boyle is 84 miles N. W. of Dublin. N. lat. 53° 58′. W. long. 8° 13′. Beaufort—Monaſticon Hibernicum.

Boyle, or Buelle, the name of a river which, riſing in the county of Mayo, flows into a romantic ſheet of water called Lough Gaza; thence meandering through woods and dales, it enters Lough Kee, or Kingſton lake, a beautiful piece of water, interſperſed with ſeveral iſlands, ſome of which are adorned with old caſtles and ruins; others in the ſtate of nature, wooded with lofty timber trees; and ſome highly improved without a tree to be ſeen, but the more pleaſing proſpect of everlaſting verdure. The river again emerges out of the eaſtern ſide of this lake, as it were by conſtraint, and then glides on to pay its tribute to the Shannon, which it joins a little above Carrick.

Boyle's *Lectures*, a courſe of eight ſermons, or lectures, preached annually, ſet on foot by the honourable Robert Boyle, eſq. by a codicil annexed to his will in 1691; the deſign of which, as expreſſed by the inſtitutor, is, to prove the truth of the Chriſtian religion againſt infidels, without deſcending to any controverſies among Chriſtians; and to anſwer new difficulties, ſcruples, &c.

For the ſupport of this lecture, he aſſigned the rent of his houſe in Crooked-lane to ſome learned divine within the bills of mortality, to be elected for a term not exceeding three years, by the late archbiſhop Tenniſon, and others. But the fund proving precarious, the ſalary was ill paid: to remedy which inconvenience, the ſaid archbiſhop procured a yearly ſtipend of 50 pounds, for ever, to be paid quarterly; charged on a farm in the pariſh of Brill, in the county of Bucks.

To this appointment we are indebted for many elaborate defences both of natural and revealed religion. A collection of theſe ſermons from the year 1691, to 1732, was printed in 1739, under the title of "A defence of natural and revealed religion," in 3 vols. fol.; and thoſe of ſeveral of the preachers have been printed and publiſhed in diſtinct volumes. An abridgment of theſe lectures in 4 vols. 8vo. was publiſhed by the Rev. Mr. Gilbert Burnet, vicar of Coggeſhall, in Eſſex, who died in 1746.

BOYLING. See **Boiling**.

BOYLSTON, in *Geography*, a townſhip of Worceſter county, in the ſtate of Maſſachuſetts, America, 7 miles N.E. of Worceſter, and 42 N.W. of Boſton. It was incorporated in 1786, and contains by ſurvey 14,396 acres of land, of rich ſoil and well watered, and 1058 inhabitants.

BOYNE, the name of a conſiderable river in Ireland, ſuppoſed to be the *Bubinda* of Ptolemy. It takes its riſe in the bog of Allen, in the county of Kildare, and having ſeparated that county from the King's county, and the ſouthern part of Meath for ſeveral miles, it enters the latter county at Clonard, and flowing N.W. divides it nearly into two equal parts, forming the general civil diviſion of the county, and conſtituting a boundary to every barony touching its banks. The ſcenery of this river has been much celebrated, and there are few ſituations adapted to the purpoſe of mill machinery that are not occupied. In its courſe within the county of Meath alone, there are ſix extenſive boulting mills, beſides ſeveral griſt and cloth mills; and one for the manufactory of cotton was erecting in 1802. The Boyne navigation, between Drogheda and Navan, runs along the courſe of the river, and has conſiderably increaſed the trade of both thoſe towns. At Navan, it receives the Blackwater, and having paſſed by Slaine and Drogheda, it flows into the Iriſh ſea, a few miles below the latter town, to which it is navigable. The fiſhery of this river is valuable, and the ſalmon in particular is highly eſteemed. The Boyne, however, is not ſo noted for any circumſtance as for the victory gained by William III. over that infatuated prince James II. on the 1ſt of July, 1690. The place where the battle was fought is between Drogheda and Slaine, and is marked out by an obeliſk, founded on a rock, which riſes boldly from the river. The advantage of ſituation was in favour of James's army; and if he had not himſelf fled before the battle was decided, the event might have been very different. The brave duke Schomberg loſt his life on this occaſion, and William was often in great danger. It was long cuſtomary to celebrate the anniverſary of the day on which this battle was gained; but as it ſerved no purpoſe but that of perpetuating party animoſity, the obſervance begins to be neglected; and it is to be hoped that the different ſects will become ſo united in attachment to their common country, as almoſt to forget that they were ever enemies. Thomſon's Meath, &c.

Boyne, a town of France, in the department of the Loiret, and chief place of a canton, in the diſtrict of Pithiviers; 2 leagues S. E. of Pithiviers, and 7 N. E. of Orleans.

BOYSE, or **Bois, John**, in *Biography*. See **Bois**.

Boyse, Joseph, a proteſtant diſſenting miniſter, was born at Leeds in Yorkſhire, in January, 1659-60. After early inſtruction under the care of his parents, he received the firſt part of his education for the miniſtry at the private academy of the Rev. Mr. Frankland, near Kendal, in Weſtmoreland, and completed it under the tuition of the Rev. Mr. Edward Veal, who kept a private academy at Stepney, near London. Having continued in theſe ſeminaries five years, and availed himſelf of the opportunities which he enjoyed in the latter ſituation of attending on the preaching of many able divines, both conformiſts and non-conformiſts, he entered on the exerciſe of his miniſtry about the year 1680. In 1683, finding that he could not diſcharge the duties of his function in England without moleſtation, he accepted an invitation to be joint-paſtor with Mr. (afterwards Dr.) Daniel Williams, in Dublin; and had afterwards for his coadjutor the Rev. Mr. Thomas Emlyn, ſo well known for his writings and his ſufferings. This connection ſubſiſted for more than ten years with mutual friendſhip and uninterrupted harmony; but it was at length diſſolved in conſequence of Mr. Emlyn's ſentiments concerning the doctrine of the Trinity. On this occaſion the zeal of Mr. Boyſe for the orthodox led him to take ſome ſteps that were thought injurious to his former colleague, and inconſiſtent with the friendſhip that had ſubſiſted between them; though he diſapproved the proſecution which Mr. Emlyn ſuffered, and behaved towards him with a greater degree of kindneſs than any of the other diſſenting miniſters of Dublin. The latter years of Mr. Boyſe's life were embittered by bodily diſorders and ſtraightened circumſtances. His funeral ſermon was preached in December, 1728; but the preciſe time of his death is not known. He was conſidered as a pious, learned, and uſeful divine; aſſiduous in the exerciſe of his miniſtry, and in his conduct generally eſteemed. He had a principal concern in promoting the act of toleration in Ireland. His works were publiſhed in 1728, in 2 vols. fol. The *firſt* contains 71 ſermons, 6 diſſertations on the doctrine of juſtification, and a paraphraſe on thoſe paſſages of the N. T. which chiefly relate to that doctrine. The *ſecond* volume contains ſeveral pieces, of which the principal is a "Vindication of the true deity of our bleſſed Saviour," in anſwer to Mr. Emlyn's "Humble inquiry into the Scripture account of Jeſus Chriſt, &c." As Mr. Boyſe's anſwer was publiſhed at the time when Mr. Emlyn was under proſecution for his ſentiments, his conduct did not eſcape cenſure; and was thought not to be candid, liberal, and ingenuous. Biog. Brit.

Boyse, Samuel, the ſon of the former, was born in 1708, and having received the rudiments of his education in a private ſchool at Dublin, was ſent, at the age of 18 years, to the univerſity of Glaſgow, probably with a view to the office of a miniſter. Before he had attained his 20th year, he imprudently married; and this connection, in addition to the natural extravagance of his temper, involved him in pecuniary difficulties, which obliged him to quit the univerſity before he had finiſhed his ſtudies, and to ſeek relief for himſelf, his wife, her ſiſter, and family, from his father at Dublin. Notwithſtanding the aſſiſtance he received, very much to the injury of his father's circumſtances, his own conduct, which was marked by indolence and diſſipation, and that of his wife, who was diſſolute and vicious, contributed to increaſe his diſtreſs, and to accelerate his ruin. After the death of his father, all his reſources failed, and he was under a neceſſity of repairing to Edinburgh, where his poetical talents procured for him a conſiderable degree of patronage. In 1731, he publiſhed a volume of poems, to which are annexed a tranſlation of "The tablature of Cebes;" and "A letter upon liberty;" which had been printed in the Dublin journal, in 1726. This publication gained him reputation, and recommended him to the patronage of the counteſs of Eglinton, to whom it was addreſſed. Upon the death of the viſcounteſs Stormont, he wrote an elegy, entitled, "The tears of the muſes," for which he received a handſome preſent from her huſband, lord Stormont. Theſe tokens of favour, on the part of his lordſhip, and of the counteſs of Eglinton, ſerved to procure for him the patronage of the ducheſs of Gordon, who employed her intereſt in obtaining a place for him in the cuſtoms at Edinburgh, but he loſt the intended benefit by his own negligence. Having reduced himſelf by his own imprudence and indolence to extreme poverty and diſtreſs, he was under a neceſſity of leaving Edinburgh; and with recommendatory letters to Mr. Pope and ſir Peter King, then lord chancellor of England, as well as to other perſons of rank, faſhion, and influence, obtained from the ducheſs of Gordon, and from lord Stormont, he removed to London. But his own indiſcretion defeated the kind deſign of theſe recommendations, and he again experienced the diſtreſs of indigence, without making any attempt to extricate himſelf, beſides writing a variety of mendicant letters. Theſe ſerved to procure him a temporary ſupply, which he ſoon expended by the moſt unaccountable and inexcuſable extravagance. About the year 1740, his penury and wretchedneſs were ſo extreme, that he pawned his apparel, and even his bed-cloaths, and confined himſelf in his lodgings and his bed, with no other covering beſides a blanket. Wrapped only with this covering he ſat up in bed, having cut a hole through it large enough to receive his arm; and placing the paper on his knee, he ſcribbled in the beſt manner he could the verſes he was obliged to make. When he was under a neceſſity of appearing abroad, he occaſionally ſupplied the want of a ſhirt by ſlips of white paper round his wriſts and neck. In this ſtate he remained for ſeveral weeks, without any other ſubſiſtence except what he could obtain by writing verſes for the magazines, and from benefactions procured by the moſt abject ſupplications, and by the meaneſt arts of deceit. When he was employed in tranſlating from the French, it was his conſtant practice, after ſending a ſheet to the preſs, to pawn the original, and to repeat this as often as it was redeemed during the courſe of his work. After paſſing through various ſcenes of a wretchedneſs that is ſcarcely paralleled in the records of human miſery, in the viciſſitudes of ſpunging houſes, garrets, and ale-houſes, he reſided at Reading, in 1745, where, having loſt his wife, he was employed in compiling an hiſtorical work, entitled, "An hiſtorical review of the tranſactions of Europe, from the commencement of the war with Spain in 1739, to the inſurrection in Scotland in 1745, &c." and publiſhed in 1747, in 2 vols. 8vo. This work, for which the author was paid at a very low rate, is not deſtitute of merit, and contains much uſeful information reſpecting the hiſtory of that period. After his return from Reading, he married a ſecond wife of low condition, but he aſſumed a more decent behaviour, and ſome hopes were entertained of his reformation. He was employed by a bookſeller to tranſlate Fenelon's "Demonſtration of the being of a God." At this time his appearance was very different from that to which he had been accuſtomed, and he ſeemed to pay ſome regard to his character. Towards the cloſe of his life, and during a lingering illneſs which preceded his diſſolution, the principles which he had imbibed, contraſted againſt the licentiouſneſs and profligacy of his conduct, produced a degree of remorſe and ſelf-reproach, which he could not evade or ſuppreſs. So deep, indeed, and ſo permanent were the impreſſions of his good education, that his whole life was a kind of conflict between his vicious inclinations, and his ſober reaſon. It was, as it is ſaid, from the experience of this mental ſtruggle, that he wrote his poem, entitled, "The Recantation." He died in indigence and obſcurity in London, in the month of May, 1749, and was buried at the expence of the pariſh. Few inſtances occur, in which diſtinguiſhed talents have been more lamentably perverted, than in the caſe of Mr. Boyſe. Beſides his genius for poetry, he poſſeſſed a taſte for painting, muſic, and heraldry: and if his powers had been diligently cultivated and exerciſed, he might have acquired a higher degree of excellence than he ever attained; and he would certainly have eſcaped the ignominy and wretchedneſs, which were the conſequences of his miſconduct. His poetical effuſions, if they were collected from the periodical works in which they were inſerted, would make ſeveral volumes. Two volumes were publiſhed in London during his life. The moſt celebrated of his poetical productions was his religious poem, entitled, "Deity," and publiſhed about the year 1741. This poem received the public commendation of two very different writers, *viz.* Hervey, in his "Meditations," and Fielding, in his "Tom Jones;" and it was ſo popular, as to have paſſed through three editions in 1752. Of this piece, Mr. Boyſe ſaid, that Mr. Pope, upon being aſked if he was the author of it, diſclaimed the work, but at the ſame time acknowledged, that there were many lines in it, of which he ſhould not be aſhamed. The beſt of Mr. Boyſe's productions are admitted into Dr. Anderſon's collection of the poets of Great Britain, printed at Edinburgh. In Ogle's Canterbury tales of Chaucer modernized, ſeveral appear under Mr. Boyſe's name, and are executed with ſpirit. His ode, entitled "Albion's Triumph," was written on occaſion of the battle of Dettingen in 1743, and publiſhed without his name. Cibber's Lives of the Poets, vol. v. Biog. Brit.

BOYSERSTEIG, in *Geography*, a calcareous mountain of Germany, near Stutgard, the capital of the duchy of Wurtemberg.

BOYUANA, in *Zoology*, the name of an American kind of ſerpent, of a long and ſlender form, the colour entirely black. It is related of the boyuana, that it has exactly the ſmell of a fox, but ſo ſtrong, that no one can endure to be near it. The particular ſpecies, or even genus, is uncertain. Several of the ſerpent race have an offenſive ſcent; that of ſome of the boa tribe is known to be intolerable, when they have ſeized upon their prey, and begin to anoint it with their ſaliva, preparatory to ſwallowing it.

BOZE, CLAUDE GROS DE, in *Biography*, an eminent antiquary, was born at Lyons, in 1680, and after firſt applying himſelf to juriſprudence, devoted his whole attention to antiquities and medals. In this ſtudy he was encouraged by the chancellor Pontchartrain, Bignon, Vaillant, and Hardouin, who became attached to him on account of both his amiable character and extenſive erudition. In

1705, he was admitted into the academy of inſcriptions and belles lettres, and in the following year appointed perpetual ſecretary. He became a member of the French academy in 1715; and in 1719, he was appointed keeper of the royal cabinet of medals, the treaſures of which he augmented by his journey to Holland in the enſuing year. Upon his return to Paris, he devoted himſelf wholly to his academical and official duties, except that he contributed alſo ſome occaſional papers to the "Journal des Scavans." He died, much eſteemed for the gentleneſs and politeneſs of his manners, in 1754.

His publications are, the 15 firſt volumes of the "Memoirs of the Academy of Inſcriptions, &c." to which he added the hiſtorical eulogies of its members, publiſhed ſeparately in 2 vols. 12mo., and much valued as elegant and judicious compoſitions, particularly the latter of them; the ſecond edition of the "Medallic hiſtory of Lewis XIV." brought down to that king's death, 1723, fol.; "The hiſtory of the emperor Tetricus, illuſtrated by Medals;" and ſeveral diſſertations on medals and other ſubjects of antiquity, in the academical memoirs. A catalogue of his valuable library was publiſhed in 1745, and is highly prized by bibliographers. Another was publiſhed after his death, Paris, 1753, 8vo. Moreri. Nouv. Dict. Hiſtor.

Boze, in *Geography*, an iſland and river in the iſland of Sardinia. The town is on the ſouth ſide of the river, which falls into the ocean on the weſt; and the iſland of this name lies off the weſt to the ſouth, between the mouth of that river and another ſituate to the ſouth of it.

BOZEN. See Bolzano.

BOZENTIN, a town of Poland, in the palatinate of Cracow, ſeated at the foot of Kaleberg mountain, and ſurrounded with a wall and rampart.

BOZIN, Bosing, Basineck, Bazinga, or Bazinium, a ſmall, but handſome, free royal city of Lower Hungary, in the upper outward diſtrict, ſeated on a riſing ground. The inhabitants are induſtriouſly employed in the cultivation of vineyards, trade, and handicrafts. In 1605, 1620, and 1655, this place was laid in aſhes.

BOZOCK, or Bzowik, a ſmall town of Hungary, with a caſtle, in a diſtrict of the ſame name.

BOZOULS, a town of France, in the department of the Aveyron, and chief place of a canton, in the diſtrict of Rodés, or Rhodez, and 10 miles N.E. of it. The town contains 2,306, and the canton 6,427 inhabitants; the territory comprehends 237½ kiliometres, and 12 communes.

BOZRAH, in *Ancient Geography*. See Bostra.

Bozrah, in *Geography*, a town of America, in New-London county, and ſtate of Connecticut; 36 miles E. from Hartford.

BOZZASOTRA, Anthony, in *Biography*, a celebrated profeſſor of medicine in the univerſity of Naples, his native country, flouriſhed the early part of the 16th century. His works are "Quæſituus de calido innato," Neapoli, 1542, 4to. "De veneſectione in uterum gerenti, adverſus negantes hujuſmodi auxilium pro cautione abortûs," Romæ, 1545, 4to. The author ſhews that the prohibition of Hippocrates, to the bleeding of pregnant women, aroſe from the rude cuſtom of bleeding ad deliquium; but that blood might be drawn in ſmall quantities from women in that ſtate, not only ſafely, but with advantage. "Tractatus quatuordecim medendi methodi, ex Galeno," Neapoli, 1549, 8vo. He died Jan. 15. 1557. Haller, Bib. Med. Eloy. Dict. Hiſt.

BOZZOLO, in *Geography*, a town and ſmall principality of Italy, in the duchy of Guaſtella, adjoining to the Cremoneſe, formerly belonging to the duchy of Mantua, from which it was ſeparated. The town was fortified in 1734. It is ſituate 15 miles W. of Mantua, and 20 E. of Cremona.

BRA, Henry de, in *Biography*, commonly called *Henry a Bra*, a phyſician of conſiderable eminence, born at Dockum, in Weſt Frieſland, the 25th of September, 1555, was initiated into the ſtudy of medicine by his father, who was penſionary phyſician to the town. To improve him in knowledge his father ſent him to viſit the different univerſities in France, Italy, and Germany. After ſpending eight years, he returned by Baſle, where he took his degree of doctor in medicine, under John Bauhine, the elder. He now went to Kempen, where he practiſed about eight years, but was at length invited to Zutphen, and made penſionary phyſician, and there continued to the end of his days. His works, which were in requeſt in his time, are "Medicamentorum ſimplicium et facile parabilium ad icterum, et hydropem, catalogus, et quomodo iis utendum," Leid. 1590, 8vo. "De curandis venenis per medicamenta ſimplicia, et facile parabilia," Aruheim, 1603, 8vo. with others of a ſimilar kind. "De novo quodam morbi genere, Friſiis et Weſtphaliæ peculiari," publiſhed in the works of Peter Foreſtus. Haller, Bib. Med. Eloy. Dict. Hiſt.

Bra, in *Geography*, a town of Italy, in the principality of Piedmont, including 3 pariſh churches; 10 miles S.E. of Carmagnola, and 2 N.W. of Cheraſco.

BRAAN, a river of Scotland, which runs into the Tay, near Dunkeld, in the county of Perth.

BRAAWICKEN, or Bravicken, a gulf of Eaſt Gothland, on the weſt ſide of the Baltic ſea, about 30 leagues S.W. from Stockholm, into which the river Motala diſcharges itſelf near the town of Nordkioping.

BRABANCIONES, in *Middle Age Writers*, a kind of Netherland ſoldiery, infamous for rapine, being little better than commiſſioned banditti, who hired themſelves to fight for any that could pay them beſt.

The word is variouſly written by the hiſtorians of thoſe days; all given them from the country of Brabant, which was the chief nurſery of thoſe troops. They are alſo frequently confounded with the *Routiers, Roturiers, Ruptarii, Ruterarii, Coteraux,* &c. Daniel. Hiſt. de la Mil. Franc. liv. iii. chap. 8.

Towards the cloſe of the 12th century, when the government in all the ſtates of Europe was relaxed, and it was almoſt impoſſible to enforce any general execution of the laws, troops of banditti under theſe denominations were emboldened to diſturb the public peace, to infeſt the highways, to pillage the open country, and to brave all the efforts of the civil magiſtrate, and even the excommunications of the church, which were fulminated againſt them. Some of theſe troops were occaſionally enliſted in the ſervice of one prince or baron, and others in that of another; they often acted in an independent manner, under leaders of their own; the peaceable and induſtrious inhabitants, reduced to poverty by their ravages, were frequently obliged to betake themſelves to a like diſorderly courſe of life; and a continual inteſtine war, pernicious to induſtry, as well as to the execution of juſtice, was thus carried on in the bowels of every kingdom. Theſe mercenary ruffians formed a kind of ſociety or government among themſelves, which ſet at defiance the reſt of mankind. The greateſt monarchs were not aſhamed, on urgent occaſions, to have recourſe to their aſſiſtance; and as their habits of war and depredation had given them experience, hardineſs, and courage, they generally compoſed the moſt formidable part of thoſe armies, which decided the political quarrels of princes. Accordingly Henry II. enliſted numerous troops of them in his ſervice; and the ſituation of his affairs was ſuch as to render even ſuch banditti the only forces on whoſe fidelity he could repoſe any confidence. We read alſo of ſoldiers under this and ſimilar denominations in the ſubſequent reigns of Richard I. and John. Hume's Hiſt. vol. i. and vol. ii.

BRABANCON, in *Geography*, a town, with the title of principality, in the county of Hainaut; 4 leagues E. of Maubeuge.

BRABANDERKOEG, a ſmall iſland of Denmark, in the duchy of Sleſwick, and prefecture of Huſum, called alſo Nordſtrand, which ſee.

BRABANT, Duchy of, a province of the Netherlands, bounded on the north by Holland and Guelderland, on the eaſt by Guelderland and the principality of Liege, on the ſouth by Namur and Hainaut, and on the weſt by Flanders and Zealand. The circumference is eſtimated at about 80 leagues, and it contains twenty-ſix walled towns, beſides ſeveral others of inferior importance; the principal cities are Louvain, Antwerp, and Bruſſels. It was firſt erected into a duchy in the 7th century, and formerly belonged to the Frankiſh monarchy; but it afterwards became a fief of the German empire. The laſt duke of Brabant, of the race of Charlemagne, was Otto, on whoſe death, in 1005, it came to Lambert I. count of Louvain, who married the ſiſter and heireſs of Otto. By his poſterity it deſcended to Philip II. duke of Burgundy; and from him in the line of his family to the emperor Charles V., and by him to Philip II. king of Spain. In the 17th century the republic of the United Netherlands took poſſeſſion of the northern part of the duchy of Brabant, which it retained at the peace of Weſtphalia. This comprehended the quarter of Bois-le-Duc, (which ſee,) and a part of the quarter of Antwerp, and was called Dutch Brabant. Charles III. afterwards known by the title of the emperor Charles VI., after the battle of Ramillies, in 1706, took poſſeſſion of the Auſtrian part of this duchy, conſiſting of the town and quarter of Louvain, thoſe of Bruſſels and thoſe of Antwerp. A ſmall part towards the ſouth was known by the name of Walloon Brabant. When the French paſſed the Rhine they eſtabliſhed themſelves in Brabant; and by the new partition of their territories and conqueſts, in conſequence of the third article of the treaty of Campo Formio, in 1797, aud the ſecond of the treaty of Luneville, in 1801, which ceded the Auſtrian Netherlands to the French, the eaſtern part of Brabant was formed into the department of Deux Nethes, and the ſouthern part into that of Dyle. The air of Brabant is good, and its ſoil is fertile. It produces a great quantity of flax, and is watered by ſeveral rivers, of which the chief are the Dommel and the Demer, which, after receiving the ſmaller rivers of Ghute, Dyle, Seene, and Nethe, takes the name of Rupel, and diſcharges itſelf into the Scheld. The religion of this country is the Roman catholic. Mr. George Foſter, who travelled through this country in 1790, gives a very unfavourable account of it. See his Travels, vol. iii. In no place, he ſays, has ignorance ever eſtabliſhed her dominion ſo firmly, nor diffuſed ſo palpable a darkneſs, as over the minds of the Brabanters; and no where has the iron yoke of implicit faith ſo deeply degraded the human underſtanding. Never, he adds, ſince they were deluged with blood by Philip and Alva, have theſe provinces attracted the notice of mankind, except when foreign armies made them the theatre of war, or when, like an abſolute property, they were transferred from one princely family to another. Nothing can be a greater proof of the ſtupidity and inſenſibility to which the people were ſunk, than the indifference ſhewn by the Brabanters, and the oppoſition made by the Flemings, to the deſign of the emperor Joſeph II. to open the navigation of the Scheld. Indeed the picture which he gives of the decayed ſtate of their manufactures, of the wealth and power of the church, of the inſolent ſpirit of the nobles, and of the ſuperſtition which prevails among all ranks, is ſufficient to convince us that the inhabitants of theſe countries were ſo exceedingly degraded by civil and religious tyranny, that they were become totally inſenſible to every thing that can dignify human nature. Of the people, however, he obſerves, that their good qualities are their own, but that their faults are derived from their teachers. They are remarkably phlegmatic, but humane, good natured, and friendly; even amid the violence of paſſion, they are neither cruel nor implacable. The meaſures which Joſeph II. concerted, however arbitrary in their firſt appearance, imprudent in their arrangement, and precipitate in their execution, were deſigned for reſtraining the power of the inſolent prieſts, and for aboliſhing the groſſer abſurdities of popery. But the inſurrections occaſioned by them, and the revolution in which they terminated, were attended with conſequences which the people had reaſon to lament. By throwing off their allegiance to the emperor, they fell under a heavier yoke, and groaned under the moſt intolerable of all deſpotiſm, that of an abſolute ariſtocracy. How far their condition has been improved ſince their country has been made a part of Belgium, by the extenſion of the French conqueſts, time muſt determine, and their own experience may already in ſome meaſure be able to teſtify. See Netherlands.

BRABEIUM, in *Botany*, from βραϐεῖον, a *ſceptre*, Lin. gen. 160. Reich. 1262. Schreb. 1580. Mant. 137, 332. Juſſieu 79. Claſs, *polygamia monœcia*. Species plantarum & ſyſtema naturæ. Ed. 12...*trandria monogynia*. Nat. Order not determined by Linnæus. *Proteæ* Juſſieu. Gen. Char. *Cal.* ament pubeſcent, with ovate, obtuſe, three-flowered ſcales. *Cor.* monopetalous, deeply divided into four oblong, obtuſe ſegments, rolled back at top. *Stam.* filaments four, inſerted into the baſe of the ſegments; anthers oblong, attached to the inner ſide of each filament, ſo as ſcarcely to reach its ſummit. *Piſt.* germ very ſmall, villoſe, ſtyle filiform, longer than the ſtamens; Stigma ſimple, Martyn (two upright and oblong, Lin. La Mark, and Boſc) *Per.* a dry drupe, ſomewhat pear-ſhaped, villoſe. The male flowers on the ſame tree agree with the above, with the exception of an abortive piſtil. *Seed*, nut globular.

Eſſen. Char. Scale of the ament. *Cor.* with four revolute ſegments. *Stam.* four. *Piſt.* one. *Drupe*, ſomewhat pear-ſhaped. *Seed* globular.

Species. B. *Stellulifolium*, (Syſt. Nat.) *Stellatifolium*, (ſp. plant.) Breyn. Cent. 1. pl. 1. Pluk. 47. pl. 265. La Mark, pl. 847. African almond. A native of the country about the Cape of Good Hope, where it grows to a tree of a moderate ſize, but in Europe it ſeldom grows above eight or nine feet high. *Stem* ſtraight, ſoft, full of pith, covered with a brown bark, throwing out horizontal branches at each joint, which gradually diminiſh from the bottom to the top ſo as to form a ſort of pyramid. *Leaves* lanceolate, of a deep green on their upper, and a pale ruſſet colour on their under ſide, reticularly veined, with a few blunt ſerratures at their edges, and growing in whorls on ſhort peduncles, round the joints or knots of the branches, from five to ſeven in a whorl. *Aments* axillary, growing alſo in whorls, a little ſhorter than the leaves. The fruit is called, at the Cape of Good Hope, the wild cheſnut, and is greedily eaten by the wild boars.

The foregoing generic character and deſcription have been drawn up from a careful compariſon of Linnæus, Martyn, La Mark, and Boſc, who all agree in calling the brabeium an amentaceous tree. But Linnæus muſt have uſed the term in a lax and improper ſenſe; he would otherwiſe have placed the genus in his natural order of amentaceæ, and not among thoſe whoſe natural character he deemed dubious. When La Mark wrote his deſcription in the Encyclopedie Methodique, he had in his poſſeſſion only a dried ſpecimen without flowers, brought to Europe by Sonnerat; he conſequently deſcribed the fructification from preceding authors. Where he obtained the figure publiſhed afterwards, and how he would now deſcribe the plant, is not known, the letter-preſs to that part of the work not being yet publiſhed; but certain it is that the fructification, as it is there delineated, has not the appearance of an ament. It correſponds much better with the following natural character by Juſſieu. (The corolla of other authors.) *Cal.* ſmall, four-cleft, at firſt connivent, afterwards revolute, the ſegments bearing the ſtamens at their baſe. *Stamens,* four, anthers oblong, attached to the inner part of the filaments. *Stigmas,* one or two. *Drupe,* villoſe, one-ſeeded. *Leaves* (of the Theophraſta) nearly in whorls; flowers in axillary ſpikes, faſcicled, the faſcicles conſiſting of three or more flowers connected with a ſingle bractea, (the ſcale of the ament, of other authors.) The calyx ſometimes five-cleft, with five ſtamens, and a greater number of maſculine flowers.

Whether what Juſſieu calls B. *theophraſta* be a new ſpecies, we have not at preſent the means of aſcertaining; but the infloreſcence in La Mark's figure we ſhould rather call a raceme than a ſpike.

The *brabyla capenſis,* Mantiſſa, 1,137, is judged by profeſſor Martyn to be probably the ſame tree bearing hermaphrodite flowers. La Mark pronounces it to be ſo without heſitation. Boſc makes no mention of it, either under brabeium, or in a ſeparate article. Linnæus ſays, that though it reſembles the brabeium, its fructification is altogether different. His deſcription of it in Mant. 1. is as follows: *Branches,* rigid, purpliſh, ſtriated, ſubvilloſe. *Leaves,* ſeven in a whorl, petioled, lanceolate, rather rigid, a hand's breadth long, ſmooth above, reticulated underneath. *Petioles,* erect. pubeſcent. *Aments,* oblong, cylindric, petioled, round, erect, lateral, often two within each leaf, ſhorter than the leaves, rather rigid, two inches long, imbricate. *Scales,* ovate, acute, pubeſcent, many-flowered. *Corollule,* funnel ſhaped, five-cleft. *Stamens,* five. *Style,* one.

Propagation and Culture. This tree is propagated in Europe only by layers, and that with difficulty. The layers ſhould be made of the former year's ſhoots, and ſlit at a joint, as is practiſed in laying carnations. The beſt time is in April, when the plants are beginning to ſhoot; but they will often be two years before they produce roots ſtrong enough to be taken from the old plants. They muſt have little water given them, eſpecially in winter. The plants muſt be placed in a green-houſe in winter, but in ſummer ſhould be ſet abroad in a ſheltered ſituation. See Martyn's Miller's Dict. The brabeium does not occur in the Hortus Kewenſis.

BRABEUTES, or Brabeuta, formed from βραβειον, *prize,* or *reward,* in *Antiquity,* an officer who preſided at the public games, and decreed the prizes to the victors. The Latins called him *deſignator,* and *munerarius.* The generality of writers confound the brabeutes with the agonotheta, between whom there however appears to have been this difference, that the former preſided at the gymnic combats, the latter at the ſacred ones. The number of brabeutæ was not fixed; ſometimes there was only one, but more commonly there were nine or ten.

BRABONIACUM, in *Ancient Geography,* a place of Britain, mentioned in the Notitia Imperii, and ſuppoſed by Mr. Horſley to be the ſame with Bremetonacis.

BRABORG, in *Geography,* a town of Sweden, in Eaſt Gothland; 24 miles E. of Nordkioping.

BRABYLA, in *Botany.* See Brabeium.

BRAC, or Calao d'Afrique, of Buffon. in *Ornithology,* the African Hornbill; *Buceros Africanus* of Gmelin.

BRACARA Augusta, in *Ancient Geography, Braga,* a town of Spain, in the territory of the Callaici, ſituate above Nebia, and occupying the rank of "Conventus." See Braga.

BRACCAS, in *Geography,* an iſland of America, near that of Cuba; one of thoſe called Caymans.

BRACCATA, in *Entomology,* a ſpecies of Vespa, of a black colour: the thorax without ſpots; lip ſilvery; baſe of the antennæ in front, and the fore legs yellow; thighs above black. Linn. Inhabits Europe.

Braccata, a ſpecies of Tenthredo, of a black colour; thighs rufous; baſe of the four poſterior ſhanks, and three laſt joints but one of the antennæ white. Linn. A native of Europe.

BRACCATUS, an European ſpecies of Ichneumon, of a black colour, with the mouth, antennæ, and thighs at the baſe yellow; abdomen ferruginous, and black at the baſe; four anterior legs yellow. Linn. &c.

BRACCIANO, in *Geography,* a ſmall town of Italy, in the ſtate of the church, and patrimony of St. Peter, and capital of a duchy of the ſame name, in which are warm medicinal baths. The duchy ſurrounds a lake, called "Lago di Bracciano." The town is ſituated at the diſtance of 2 leagues from the Mediterranean, and 15 miles N.W. from Rome.

BRACCIO, *Ital.* the *arm,* in *Muſic,* as Viola da braccio, a tenor-viol, that reſts on the ſhoulder, to diſtinguiſh it from the baſe-viol, which reſts on the leg. See Viol di Gamba.

Braccio *Di Mania,* called alſo *Tzakonia,* in *Geography,* a diſtrict of the Morea in European Turkey, comprehending the ancient Arcadia and Laconia.

BRACCIOLINI, Francis, in *Biography,* an Italian poet of noble extraction, was born at Piſtoia, in 1566, and admitted into the academy of Florence, where he devoted himſelf to the purſuits of literature. Having accompanied the cardinal Maffeo Barberini to France, he returned after the death of Clement VIII. to his own country; but upon the acceſſion of Barberini to the popedom, under the title of Urban VIII. he re-viſited Rome, and became joint ſecretary with the pope's brother, cardinal Antonio. He was alſo allowed the honour of taking a ſurname from the arms of the Barberini family, which were "Bees," and from this circumſtance was denominated Bracciolini dell' Api. During his continuance at Rome, he frequented the moſt illuſtrious academies, and obtained great reputation for his literature, but was reproached for his ſordid avarice. After the death of Urban VIII. he retired to his native country, where he died in 1645. Bracciolini was a copious writer in various kinds of poetry, epic, dramatic, paſtoral, lyric, and burleſque. The moſt noted of his poems is his mock-heroic, entitled "Scherno degli Dei," ridiculing the heathen mythology; which, though confeſſedly inferior to Taſſoni's "Secchia rapita," diſputes with it priority of date. Of his heroic poems, the moſt celebrated is the "Croce Racquiſtata," Paris, 1605, 12mo. ranked by ſome next to the great works of Arioſto and Taſſo. He celebrated the elevation of his patron Urban VIII. in 23 books, and he muſt therefore have written verſes with great facility. His dramatic paſtoral, entitled "L'Amoroſo ſdegno," is eſteemed one of the beſt productions of that age; and ſome of his tragedies gained applauſe; particularly his "Evandro." Tiraboſchi. Gen. Biog.

Bracciolini, Poggio, one of the revivers of literature in Italy in the 15th century, was the ſon of Guccio Bracciolini, and born in 1380, at Terranuova, a ſmall town of the republic of Florence, not far from Arezzo. Deriving from his father no hereditary advantages of rank or fortune, he ſought emolument and diſtinction in the courſe of literary purſuits. Having acquired a competent knowledge of the Latin and Greek languages at Florence, where his ſtudies were directed by Manuel Cryſoloras, he removed to Rome about the year 1402; and here his literary reputation introduced him to the notice of Boniface IX. who took him into his ſervice, and promoted him to the office of writer of the apoſtolic letters. At the period immediately preceding the admiſſion of Poggio into the pontifical chancery, the Italian ſtates had been convulſed by war and faction; but a treaty having been concluded, juſt before his arrival, between Boniface and the Florentine republic, the Roman court, relieved from its diſtraction and anxiety, was become a ſcene of luxury and diſſipation. Poggio, however, reſiſted the temptations which preſented themſelves to his lively fancy and ardent conſtitution; and as the emoluments of his office afforded only ſcanty means of gratification, he devoted himſelf the more aſſiduouſly to the proſecution of his ſtudies, and to the cultivation of an acquaintance with thoſe whoſe converſation might lead to the improvement of his mind. Literary purſuits were now become faſhionable, and the character of the ſcholar was often found united with that of the man of the world. To this circumſtance it is natural to aſcribe the union of learning, politeneſs, and knowledge of the human heart, which ſhines ſo conſpicuouſly in the writings of Poggio. In 1404 he ſuſtained a conſiderable loſs by the death of his patron, Boniface; but his diſtinguiſhed merit recommended him to the favourable notice of the ſucceſſor to the papal ſee, Innocent VII.; who continued him in his office, and treated him with particular kindneſs and reſpect. During the diſtractions of the Roman court, which ſucceeded the death of Innocent in 1406, Poggio exchanged the intrigues and diſſenſions of the pontifical palace for the tranquil delights of friendſhip, which he enjoyed at Florence in the ſociety of his literary acquaintance, and particularly in the patronage and cordial eſteem of the celebrated Niccolo Niccoli. He ſeems, however, to have retained his ſituation in the pontifical chancery; and having acted as apoſtolical ſcribe to Alexander V. he occupied the ſame office in the houſehold of John XXII. that pontiff's ſucceſſor. At the council of Conſtance, in 1415, the death of Manuel Cryſoloras, the inſtructor of his youth, afforded him an opportunity of celebrating his praiſes in a funeral oration, and of dedicating to his memory an appropriate and elegant Latin epitaph. Upon the depoſition of John at this council, and the conſequent diſperſion of the pontifical houſehold, Poggio remained at Conſtance, and employed his intervals of leiſure in ſtudying the Hebrew language, under the direction of a Jew who had been converted to the Chriſtian faith. But in this language he ſeems to have made no great progreſs; nor, indeed, was he deſirous of providing himſelf, by a knowledge of the oriental tongues, with the weapons of religious controverſy. As he was not diſpoſed to call in queſtion the prevailing creed, he was inclined to think that St. Jerome's tranſlation of the Jewiſh Scriptures was amply ſufficient for all the purpoſes of his Chriſtian faith. Biblical ſtudies ſeem not to have ſuited his taſte and inclination; and therefore his proficiency in them was not very conſiderable. The vigour of his mind might likewiſe have ſuffered ſome relaxation from the precariouſneſs of his ſituation, and the gloomy and diſcouraging proſpects which preſented themſelves with regard to his future preferment. Finding no amuſement in varying or extending his literary purſuits, he altogether ſuſpended his ſtudies; and in the ſpring of the year 1416, he availed himſelf of the leiſure afforded him, by the termination of his functions as ſecretary to the depoſed pontiff, to make an excurſion to the baths of Baden. On his return to Conſtance he was preſent at the trial of Jerome of Prague; and of this trial and the laſt end of Jerome he gave a very circumſtantial and intereſting account, in a letter to his friend Leonardo Aretius. "He ſtood undaunted and intrepid," ſays Poggio, "not merely contemning, but, like another Cato, longing for death. He was a man worthy to be had in everlaſting remembrance. I do not commend him for entertaining ſentiments hoſtile to the conſtitution of the church; but I admire his learning, his extenſive knowledge, the ſuavity of his eloquence, and his ability in reply. But I am afraid that all theſe endowments were beſtowed on him by nature, in order to effect his deſtruction." He thus concludes; "He may have been heretical in his notions, and obſtinate in perſevering in them, but he certainly died like a philoſopher. I have rehearſed a long ſtory, as I wiſhed to employ my leiſure, in relating a tranſaction which ſurpaſſes the events of ancient hiſtory. For neither did Mutius ſuffer his hand to be burnt ſo patiently as Jerome endured the burning of his whole body; nor did Socrates drink the hemlock as cheerfully as Jerome ſubmitted to the fire." The feeling manner in which he deſcribes the trial and execution of Jerome, evinces a heart, which daily intercourſe with bigotted believers and licentious hypocrites could not deaden to the impulſes of humanity. The manifeſt intereſt which he took in the fate of a man, who was held up by the church as an object of unqualified abhorrence, awakened the fears of Leonardo on his account; and he adviſed him to exerciſe a greater degree of caution.

During the vacancy of the pontifical throne, Poggio improved his leiſure by an expedition of no ſmall importance to the intereſts of literature. Having received information that many ancient MSS. of claſſic authors were ſcattered in various monaſteries, and other repoſitories in the neighbourhood of Conſtance, he determined to reſcue them from the hands of thoſe who, ignorant of their value, were ſuffering them to periſh. In the monaſtery of St. Gall he found, among other MSS., a complete copy of Quintilian, buried in rubbiſh and duſt; and alſo the three firſt and one half of the fourth books of the Argonautics of Valerius Flaccus, and Aſconius Pedianus's comment on eight of Cicero's orations. In a monaſtery of the monks of Clugny, in the town of Langres, he found a copy of Cicero's oration for Cæcina; and in his other reſearches he diſcovered the following orations of the ſame author, the loſs of which had been long deplored by the learned: *viz.* "De lege Agraria contra Rullum, lib. i. et lib. ii." "Contra legem Agrariam ad populum;" and "In L. Piſonem." A copy of theſe orations is preſerved in the abbey of Sta. Maria at Florence, with a memorandum aſcribing the diſcovery of this and alſo of three others, *viz.* "Pro C. Rabirio Piſone;" "Pro C. Rabirio perduellionis reo;" and "Pro Roſcio comædo," to Poggio; but the three laſt are torn from the volume. To him alſo, in concurrence with Bartolomeo di Montepelciano, we are indebted for reſtoring to light the poem of Silius Italicus, Lactantius's treatiſe, "De ira Dei et opificio hominis," Vegetius "De Re militari," Nonius Marcellus, Ammianus Marcellinus, Lucretius, Columella, and Tertullian. Poggio likewiſe added to the eight comedies of Plautus, known before his time, twelve more; and by the aſſiduity of his own reſearches, and thoſe of others employed by him, he diſcovered a fragment of Aulus Gellius, a copy of Julius Frontinus, "De aqueductis," and eight books of Firmicus's treatiſe on the mathematics. From Cologne he procured the fifteenth book of Petronius Arbiter; and to his exertions we owe the entire work of Columella, the preſervation of Calpurnius's Bucolic, and the recovery of the works of Manilius, Lucius Septimius, Caper, Eutychius, and Probus.

After the depoſition of John XXII. Poggio remained for ſome time in ſuſpence with regard to his future deſtination; and it does not appear that he held any office under Martin V. who was elected to the papal ſee, although, after the diſſolution of the council of Conſtance in 1418, he travelled in the ſuite of the new pontiff to Mantua. At this time he paid a viſit to England, in conſequence of an invitation from Beaufort, biſhop of Wincheſter; but diſappointed in his expectations of preferment, adequate to his views and wiſhes, he impatiently waited a favourable opportunity of returning to his native country.

At length, viz. in 1420, when the diſſenſions reſpecting the pontificate were finally ſettled, and Martin V. was recognized as the true ſucceſſor to the papal throne, Poggio arrived at Rome, and accepted the office of ſecretary, to which he was recommended by the cardinal St. Euſebius. A quarrel having taken place between his two friends Leonardo Aretino and Niccolo Niccoli, he interpoſed as mediator, and ſucceeded in accompliſhing a reconciliation. In 1429 he availed himſelf of an interval of tranquillity, in preſenting to public notice his firſt literary production, which was a "Dialogue on Avarice," and which ſeems to have poſſeſſed conſiderable merit. In this dialogue he took occaſion very ſeverely to ſatirize thoſe Franciſcan friars, who were diſtinguiſhed by the title of "Fratres Obſervantiæ," a new order founded by Bernardo of Siena. This was followed, at a more advanced period of life, by a "Dialogue on Hypocriſy," a compoſition which abounds in the keen ſarcaſms of poliſhed wit, and in acute obſervations on the human character. In both theſe dialogues he boldly expreſſes the contempt he entertained for thoſe eccleſiaſtics, who adopted the religious habit as a convenient cloak for the concealment of indolence or luxury; and who, by the mere appearance of extraordinary ſanctity, endeavoured to attain that wordly honour which at the ſame time they affected to deſpiſe. The freedom with which he expoſed the vices not merely of individuals, but of whole claſſes of religious hypocrites, manifeſted a great degree of virtuous reſolution, and merited no mean praiſe. After the acceſſion of Eugenius IV. to the papal throne, a conteſt occurred between him and the council of Baſil, which terminated in the depoſition of the pontiff, and his flight to Florence; and Poggio, in attempting to follow him thither, was captured, and for ſome time detained in confinement. However, by the payment of a ranſom, which his pecuniary circumſtances rendered very oppreſſive, he was ſet free, and finally accompliſhed his retreat to Florence. During his reſidence in this city, he had an opportunity of teſtifying his ardent attachment to the houſe of Medicis, by entering into a literary conteſt, or rather a kind of lampoon war, with Filelfo, an avowed enemy of that family, in which they ſeem to have vied with each other in inventing falſehoods of the moſt atrocious kind, and in diſgracing their pages by the moſt malevolent and indecent calumnies. This conteſt between two of the moſt learned men of the age was conducted in a manner, which, however it might have contributed to the amuſement of their contemporaries, entails laſting diſgrace on both parties, in the judgment of poſterity. Poggio, ſoon after the termination of this conteſt, determined to fix his permanent reſidence in the Tuſcan territory, and with this view he purchaſed a villa in the pleaſant diſtrict of Valdarno. The Tuſcan government favoured his purpoſes of retirement, and paſſed a public act, which exempted him and his children from the payment of all public taxes. Poggio's fortune was inconſiderable; but he contrived to render his humble manſion an object of attention to the lovers of the liberal arts, by the treaſures of his library, and by a ſmall collection of ſtatues, which he diſpoſed in ſuch a manner as to conſtitute a principal ornament of his garden, and the appropriate furniture of an apartment which he intended to dedicate to literary converſation. His attention ſeems to have been long engaged by the ſtudy of ancient ſculpture; nor was he leſs aſſiduous in reſcuing its relics from obſcurity, than in ſearching for the beſt writers of antiquity. With this view he made a diligent ſurvey of the ruins of ancient Rome, and inſerted in the proemium to his dialogue, "De Varietate Fortunæ," a catalogue of the relics of Roman architecture, which has been introduced by Mr. Gibbon in the 71ſt chapter of his "Decline and Fall of the Roman Empire." Poggio's reſearches extended beyond the precincts of Rome, and his zeal for the reſtoration of the monuments of ancient ſculpture induced him to viſit Crypta, Ferrata, Tuſculum, Ferentinum, Alba, Arpinum, Alatrinum, and Tiburtum; and by means of friends he directed his reſearches to Rhodes, Greece, and other countries. Whilſt he was occupied in collecting ornaments for his rural reſidence, he was employed at the requeſt of a friend, Scipio of Ferrara, in compoſing a diſſertation on the comparative merits of Cæſar and Scipio; which he cloſes with the following general ſtatement of his opinion, "that the youth of Scipio was diſtinguiſhed by the pureſt morals, whilſt the early years of Cæſar were rendered infamous by his vices; that the former, inſpired with the ſpirit of patriotiſm, by his ſplendid military achievements reſcued his country from deſtruction; and that the latter, prompted by ambition, too ſucceſsfully exerted his extraordinary talents to effect the ſubverſion of the commonwealth: that conſequently, whilſt Scipio was by no means inferior to Cæſar in the fame of his military exploits, he was greatly his ſuperior in virtue, which alone conſtitutes the character of a truly great man." Soon after the termination of a controverſy which this publication occaſioned, an event occurred which, in all the circumſtances that attended it, reflects no great honour on the character of Poggio. At the age of 55, he married a young lady of a wealthy and honourable family in her 18th year; and to this alliance he ſacrificed a miſtreſs, by whom he had had 12 ſons and 2 daughters, and, moreover, ſet aſide a bull of legitimacy which he had procured for them, in order that they might be enabled to inherit his fortune. Not long after this event, in 1437, his friend Niccolo Niccoli died, and Poggio compoſed and publiſhed his funeral eulogium, in which are ſeveral traces of eloquence and pathos. Although Poggio devoted much of his attention to domeſtic duties, and to the improvement of his Tuſcan villa, he found leiſure to renew his diſgraceful literary conteſt with Filelfo; and to compoſe a work, which redounded much more to his honour, entitled "A Dialogue on Nobility," and publiſhed in 1440. This was followed by his "Dialogue on the unhappineſs of Princes," in which he dwells with ſo much energy on the vices of exalted rank, as to afford room for ſuſpicion, that reſentment and indignation had at leaſt as much influence in its compoſition as the ſuggeſtions of philoſophy. However the effuſions of moroſeneſs that occur in this dialogue are interſperſed with precepts of ſound morality, and the hiſtoric details with which it abounds are both entertaining and inſtructive.

In 1444 he loſt Leonardo, the ſole ſurviving companion of his youthful years; and on this occaſion he publiſhed a funeral oration, which was at once dignified and pathetic.

Poggio, though he had held the office of apoſtolic ſecretary under ſeven pontiffs, had never been promoted to any of the ſuperior departments of the Roman chancery. But when Nicolas V. aſcended the pontifical throne, his proſpects were brightened; and he indulged the hope of ſpending the remainder of his days in a ſtate of independence, if not of affluence. With a view of improving his intereſt with the new pontiff, he addreſſed to him a congratulatory oration, which was recompenſed by very liberal preſents. This was ſucceeded by a dedicatory epiſtle, introducing to his patronage a dialogue "On the viciſſitudes of fortune," the moſt intereſting of Poggio's works, and inculcating maxims of ſublime philoſophy, enforced by a detail of ſplendid and ſtriking events. Confiding in the pontiff, he alſo publiſhed the dialogue "On hypocriſy," already mentioned. At the requeſt, and under the patronage of Nicolas, he alſo contributed to the illuſtration of Grecian literature, by a Latin tranſlation of the works of Diodorus Siculus, and the Cyropœdia of Xenophon. During the plague, which raged in various parts of Italy in 1450, Poggio viſited the place of his nativity; and availing himſelf of this interval of relaxation from the duties of his office, he publiſhed his "Liber Facetiarum," or collection of jocoſe tales, containing anecdotes of ſeveral eminent perſons who flouriſhed during the 14th and 15th centuries. This work acquired a conſiderable degree of popularity, and was read, not only in the native country of its author, but alſo in France, Spain, Germany, and Britain. In 1451 he dedicated to the cardinal, Proſpero Colonna, his "Hiſtoria diſceptativa convivialis." In 1453 Poggio was elevated to the chancellorſhip of Florence; and, at the ſame time, he was choſen one of the "Priori degli arti," or preſidents of the trading companies. Theſe offices he held till his death, which happened on the 30th of October, 1459. Notwithſtanding the multiplicity of his buſineſs, and the advances of age, he proſecuted his ſtudies with his accuſtomed ardour; and publiſhed a dialogue "De miſeriâ humanæ conditionis," and a verſion of Lucian's "Aſs," with a view of eſtabliſhing a point of literary hiſtory, which ſeems to have been till that time unknown, namely, that Apuleius was indebted to Lucian for the ſtamina of his "Aſinus aureus." The laſt literary work in which he engaged, was his "Hiſtory of Florence," divided into eight books, and comprehending the events in which the Florentines were concerned from the year 1350, to the peace of Naples in 1455. This hiſtory was tranſlated into Italian by Jacopo, the ſon of Poggio; but the original was publiſhed by Recanati, and has been republiſhed in the collections of Grævius and Muratori. Poggio concluded his career in the poſſeſſion of univerſal reſpect, and in the tranquil enjoyment of ſocial and domeſtic comforts. His remains were interred with ſolemn magnificence in the church of Santa Croce at Florence; and his fellow citizens teſtified their reſpect for his talents and virtues, by erecting a ſtatue to his memory on the front of the church of Santa Maria del Fiore. As the citizen of a free ſtate, which he deemed a high honour, he improved every opportunity that occurred for increaſing and diſplaying the glory of the Tuſcan republic. Although he was honoured by the favour of the great, he never ſacrificed his independence at the ſhrine of power, but uniformly maintained the ingenuous ſentiments of freedom. The licentiouſneſs which diſgraced the early period of his life, and the indecent levity which occurs in ſome of his writings, were rather the vices of the times than of the man; nor did they deprive him of the countenance of the greateſt eccleſiaſtical dignitaries, or cauſe him to forfeit the favour of the pious Eugenius, or of the moral and accompliſhed Nicolas V. To thoſe with whom he maintained a perſonal intercourſe, he recommended himſelf by the urbanity of his manners, the ſtrength of his judgment, and the ſportiveneſs of his wit. As a ſcholar, Poggio is entitled to diſtinguiſhed praiſe. By aſſiduous ſtudy, he became a conſiderable proficient in the Greek language, and intimately converſant with the works of the Roman claſſic authors. In ſelecting as his exemplar in Latin compoſition, the ſtyle of Cicero, he manifeſted the diſcernment of true taſte. When compared with the works of his immediate predeceſſors, the writings of Poggio are truly aſtoniſhing. "Riſing to a degree of elegance, to be ſought for in vain in the rugged Latinity of Petrarca and Coluccio Salutati, he prepared the way for the correctneſs of Politiano, and of the other eminent ſcholars whoſe gratitude has reflected ſuch ſplendid luſtre on the character of Lorenzo de' Medici." Shepherd's life of Poggio Bracciolini. 4to. 1802.

BRACE is commonly taken for a couple, or pair; and in this ſenſe is applied by huntſmen to ſeveral beaſts of game, as a brace of bucks, foxes, hares, &c.—They alſo ſay, a brace of greyhounds.

Brace, in *Architecture*, denotes a piece of timber framed in with bevel-joints; ſerving to keep the building from ſwerving either way. When a brace is framed into a king-piece, or principal rafter, it is called by ſome a *ſtrut*.

Brace, **Bracchio**, or **Brasse**, in *Menſuration*, denotes a foreign long meaſure, anſwering to our FATHOM.

Brace is alſo uſed for a meaſure taken from the length of the arm when extended, and is uſed in divers cities of Italy, in lieu of the foot or yard. Its length is various; the brace of Bergamo, according to Scamozzi, is nineteen Paris royal inches, and a half; according to M. Petit, ſixteen inches two-thirds; the brace of Bologna is fourteen inches; that of Breſſe, ſeventeen inches ſeven lines and a half, according to Scamozzi; and according to M. Petit, ſeventeen inches five lines; the Mantuan brace is ſeventeen inches four lines; that of Milan, twenty-two inches; thoſe of Parma, twenty inches one-third; of Sienna, twenty-one inches two-thirds; of Florence, twenty inches two-thirds, according to Maggi; twenty-one inches four lines and a half, according to Lorini; twenty-two inches two thirds, according to Scamozzi, and twenty-one inches one-third, according to Picart.

Brace, in *Writing*, a term uſed to ſignify a crooked line, (as }) made at the end of two or more articles in an account, the amount of which is uſually placed in the centre of the brace. It is alſo uſed in printing, to encloſe an entire paſſage, as in a triplet, &c.

Brace *the yards, to,* in *Sea-Language*, ſignifies to move them, by means of the braces, to any direction required. To *brace about*, is to brace the yards round for a contrary tack. To *brace ſharp* is to brace the yards in a poſition, in which they will make the leaſt poſſible angle with the keel, for the ſhip to have head-way. To *brace to*, is to eaſe off the lee-braces, and round in the weather braces, to aſſiſt the motion of the ſhip's head in tacking. See the next article.

Brace, a rope at each extremity of all the yards of a ſhip, except the mizen yard, which is provided with ropes called *vangs*, for the purpoſe of bringing the yard in a proper poſition, that the ſail may be full, whether the ſhip is ſailing by, or large. All braces ought, if poſſible, to lead aft, for the greater ſecurity of the maſts; in ſhips, therefore, the braces of the yards belonging to the fore and main-maſts, lead aft; but in ſquare rigged veſſels with two maſts, thoſe, only, of the yards belonging to the fore-maſt, lead aft. The braces of the yards of the after-maſt of a ſquare rigged veſſel, lead forward. The braces of the principal yards are double, being reeved through blocks, at the ends of the yards, or at pendants ſeized to the yard-arm. The braces of the top-gallant, and ſprit-ſail top-ſail yards, are ſingle.

BRACED, in *Heraldry*, is uſed in ſpeaking of chevronels which are intermingled. He bears azure a chief or, and three chevronels *braced*, in the baſe of the eſcutcheon, by the name of *Fitz Hugh*. See Brazed.

BRACELET, an ornament uſually worn round the wriſt. The word is French, *bracelet;* which Menage derives further from *braceletum*, a diminutive of *bracile*, a word occurring in writers of the Juſtinian age; all formed from the Latin *brachium*, *arm*. It amounts to the ſame with what was called by the ancients, *armilla*, *brachiale*, *occabus;* in the middle age, *boga*, *bauga*, *armiſpatha*.

Among the ancient Romans, the men as well as the women, wore bracelets; but the latter, it is to be obſerved, never wore them till they were betrothed.

In the times to which the Scripture hiſtory refers us, the bracelet ſeems to have been an enſign of royalty; and this accounts for Saul's wearing this ornament at the time of his death, and alſo for the Amalekite's bringing the bracelet which he found on Saul's arm, together with his crown, to David. 2 Sam. i. 10. It is well known, that the bracelet has been in much later times uſed in the Eaſt as a badge of power. D'Herbelot informs us, that when the caliph Caiem Bemrillah granted the inveſtiture of certain dominions to an eaſtern prince, which his predeceſſors had poſſeſſed, and among the reſt of the city of Bagdad itſelf, this ceremony of inveſtiture was performed by the caliph's ſending him letters patent, a crown, a chain, and bracelets. Although Grotius, referring to Num. xxxi. 50. obſerves, that the bracelet was an ornament uſed by the men as well as women of thoſe nations; yet it does not ſeem to have been ſo common as ſome writers have ſuppoſed; for though the word bracelet frequently occurs in our tranſlation, the original word in this text is found only in two other places; and as the children of Iſrael found one or more of theſe bracelets among the ſpoils of Midian, ſo they killed, at the ſame time, five of their kings. Num. xxxi. 8. In the other paſſage, Iſ. iii. 20. mention is made of female ornaments; but allowing the word to be the ſame, might not the women of that age wear an ornament which, from its likeneſs to one of the enſigns of royalty, might be called by the ſame name. We read in Gen. xxiv. 22. that the bracelets of Rebekah weighed ten ſhekels, or about five ounces; a weight which ſome have thought to be very extraordinary. But Sir John Chardin aſſures us, that ornaments as heavy, and even heavier, were worn by women of the Eaſt when he was there. He ſays, with a reference to the ornaments of Rebekah, that "the women wear rings and bracelets of as great weight, through all Aſia, and ſuch as are much heavier. They are rather manacles than bracelets. There are ſome as large as the finger; the women wear ſeveral of them, one above the other, in ſuch a manner as ſometimes to have the arm covered with them from the wriſt to the elbow. Poor people wear as many of glaſs, or horn. They hardly ever take them off; they are their riches."

Bracelets were at firſt properly military ornaments, or rewards, frequently conferred among the ancients, by generals and princes, on thoſe who behaved gallantly in fight. They became afterwards arbitrary decorations, aſſumed at pleaſure; and are ſometimes ſaid to have been worn for health as well as ornament; and particularly as amulets, to break the force of charms and faſcinations. Among the Romans we meet with divers ſpecies and denominations of bracelets; as the *brachiale*, which covered the whole length of the arm; the *dextrale*, or *dextrocherium*, only the wriſt, and that only of the right arm; *viria*, or *viriola*, peculiar to the male ſex; *ſpinther*, to the women, being worn on the left arm; *verua*, uſed as an amulet; *amphidion*, worn either on the arm, or about the neck; *calbeum*, or *galbeum*, worn by generals in their triumphs. Pitiſc. Lex. Ant. tom. i. & ii. Du-Cange. Gloſſ. Lat. tom. i. & ii. Kennet. Rom. Ant. Not. P. II. lib. iv. cap. 16.

Bartholin has a treatiſe on the bracelets of the ancients. The northern people uſed alſo to ſwear on their bracelets, to render contracts more inviolable.

Bracelets are ſtill much uſed by the ſavages of Africa and America, made of metal, glaſs-beads, ſhells, and the like. In civilized countries they form a common part of the ornament of the ladies.

Bracelet is alſo uſed, in *Anatomy*, to denote the circular ligament which inveſts the *carpus*, called alſo *ligamentum annulare*.

Bracelets, in ſome *Ancient Law Books*, denote beagles, or hounds of the ſmaller kind.

BRACES, in *Geography*, are two ſand-banks lying acroſs the entrance into the channels for the river Hughly, at the bottom of the bay of Bengal.

Braces, in *Ship-building*, that ſecurity to the rudder which is fixed to the ſtern-poſt, and bottom of the ſhip, and to which the rudder is hung.

Braces of *a coach*, denote the thick and ſtrong ſtraps of leather on which it hangs.

BRACHERIUM, or Bracheriolum, a kind of ſteel bandage worn about the hips, and uſed for the retention and cure of ruptures. Du-Cange Gloſſ. Lat.

BRACHIÆUS, or Brachialis, *internus*, *muſculus*, in *Anatomy*, is the deeper ſituated flexor of the elbow joint. It ariſes fleſhy from the middle of the os brachii, and from all the lower and fore part of the bone. It paſſes over the joint, and adheres firmly to the ligament. It is inſerted by a ſtrong ſhort tendon into the coronoid proceſs of the ulna. Its uſe is to bend the fore arm, and to prevent the capſule of the joint from being pinched.

BRACHIAL *nerves*. See Nerves.

BRACHIALIS, *coraco*. See Coraco-Brachialis.

BRACHIATE, in *Botany*, a term applied to branches when they grow oppoſite to each other, one on each ſide of the ſtem, and when each pair points in a different direction, ſo as to make a right angle with the pair above or below it.

BRACHIOBOLUS, a name given by Allioni to a genus of plants formed for ſuch ſpecies of ſiſymbrium as have a ſhort ſilique. It correſponds with Haller's radicula. See Sisymbrium.

BRACHION, in *Ancient Geography*, *Gerba*, an iſland in the Mediterranean ſea, ſituate on the coaſt of Africa, 11 leagues S. E. of Tacapé. Scylax.

BRACHIONUS, in *Zoology*, a genus of *Vermes infuſoriæ*, having the body contractile, covered with a ſhell, and furniſhed with ciliate rotatory organs at the head. The ſpecies of this genus Linnæus includes in his genus *Vorticella*, from which they are diſtinguiſhed by modern naturaliſts by the ſhelly covering of the body; the vorticellæ being deſtitute of a ſhell.

The ſpecies of this genus are urceolaris, patella, ſtriatus, cirratus, tripus, uncinatus, mucronatus, cernuus, calyciflorus, tubifex, quadridentatus, and patina.

BRACHITÆ, in *Eccleſiaſtical Hiſtory*, a branch of Manichees, who appeared in the third century.

BRACHIUM, the *arm*, in *Anatomy*, is that part of the upper extremity which intervenes between the joints of the ſhoulder and elbow.

Brachium, in *Botany*, a term employed by Linnæus as a meaſure of plants. It denotes the diſtance from the arm-pit to the baſe of the middle finger in a middle ſized man, and is about 24 inches.

Brachium, *moventium ſecundus*, in *Anatomy*, a name given by Veſalius, and other of the old writers, to the muſcle now generally called *deltoides*.

Brachium *movens quartus*, the name by which Veſalius calls the muſcle now generally known under the name of *latiſſimus dorſi*. Fallopius, and many others, have alſo called it *quartus humeri*.

BRACHII *tertius*, a name given by Veſalius and others to a muſcle ſince called, from its ſhape, *teres major*, and *rotundus major*.

BRACHIURE, in *Zoology*, an epithet given by the French naturaliſts to many animals that have ſhort wings, the word being derived from the Greek as in Brachytera, &c.

BRACHLERCHE, Frisch, in *Ornithology*, Alauda Campestris, the meadow lark.

BRACHMANS, a branch of the ancient Gymnoſophiſts, or philoſophers of India, remarkable for the ſeverity of their lives and manners. See Gymnosophists.

The Greeks uſually give them the name Gymnoſophiſts; but among ancient authors, both Greek and Latin, we find different accounts of theſe Indian ſages. Ptolemy conſiders them as diſtinct from the Gymnoſophiſts; and he places the Brachmans, whom he calls Magi, in a ſouthern diſtrict of India, between the rivers Solenus and Chaberus, not far from the ſea; whereas he aſſigns to the Gymnoſophiſts a ſituation in the north-eaſtern part of that country, near the weſtern bank of the Ganges. On the other hand, Megaſthenes, cited by Strabo, (Geog. tom. ii. p. 1038.) aſſerts, that the Gymnoſophiſts were divided into two branches or ſects, viz. the Brachmans and the Germanes. Diodorus Siculus, in one place, repreſents the philoſophers of India, who were the Brachmans of Megaſthenes, as equivalent to the prieſts of other nations; but, in another paſſage, he conſiders them as a ſeparate nation, ſect, or body of men, ſettled in one particular part of India. Arrian (De Exped. Alexand.) fixes the Brachmans among the Malli and the Muſicani; and Pliny (Nat. Hiſt. l. 6. c. 17.) ſays the appellation Brachman was applied to many nations, and intimates, that it did not denote a diſtinct claſs or order in ſociety. Porphyry (De abſtin. l. 4.) affirms, that the Gymnoſophiſts were divided into two ſects, the Brachmans and the Samaneans; and that of the Brachmans, ſome lived in a mountainous tract, and others about the Ganges. Arrian, Apuleius, Clemens Alexandrinus, and Plutarch, differ in ſeveral particulars relating to theſe Indian ſages; though they all ſeem to agree in celebrating their love of divine wiſdom, their knowledge, their abſtemious way of life, their ſingular temperance, and their contempt of all the good, as well as evil things of this world, ſo much deſired or dreaded by the bulk of mankind. Upon the whole, it ſeems to be evident from various records, concerning the ancient Brachmans, that they were not ſo much a diſtinct nation, or particular claſs of philoſophers, as a tribe or body of men, or rather a numerous family, deſcended from one common anceſtor, who exiſted at ſome remote period, and who was different from the progenitors of the people among whom they lived. They deduced their origin from Brahma, the firſt of the three beings whom God created, and whom he afterwards employed as his agents in forming the world. Some have ſuppoſed that this Brahma was the ſupreme being: but others have rejected this ſuppoſition as abſurd and incredible. It has been a generally received opinion among ſome of the beſt Jewiſh writers, adopted by Shareſtani, an Arabian author of great repute, and ſanctioned by the authority of the learned Dr. Hyde (De rel. vet. Perſarum, p. 31, 32.), who has offered ſome ingenious conjectures in defence of this notion, that the progenitor of the Brachmans was the patriarch Abraham, whom in their language they call *brachma*, or *brama*.

Poſtellus (In comment. ad Jezir.) takes theſe Brachmans to have been deſcended from Abraham by his wife Keturah, whence he calls them *Abrachmans*; and believes that the true religion prevailed long among them; and, indeed, from the accounts given of them by the ancients, it ſeems to appear, that they acknowledged one ſupreme being, and a future ſtate of rewards and puniſhments. It alſo farther appears, that ſome of them worſhipped this ſupreme being with great fervency and adoration, ſpending the greateſt part of the day and night in ſinging hymns in honour of the deity, praying and faſting almoſt inceſſantly, and deſpiſing every thing in this world for his ſake. Hence, ſome have derived their name from the Hebrew *barach*, to *bleſs* or *pray*, becauſe this was their principal occupation. Moſt of them lived in ſolitude, without marrying, or poſſeſſing any eſtates; and from this circumſtance of their retiring into the country and living in deſerts, F. Thomaſin deduces the original of the appellation by which they are diſtinguiſhed; ſuppoſing it to have been derived from the Hebrew *barach*, to *fly* or *eſcape*. Theſe Brachmans, according to the accounts of Arrian and Porphyry, were held in great veneration in their own country, enjoying perfect liberty and total exemption from taxes, and officiating, not only as the prieſts of the Indians, but likewiſe as the principal counſellors of their princes. Thus they ſerved their country, both in a civil and religious capacity, as the Magi did among the Perſians. They aſſiſted at the public ſacrifices; and if any perſon deſired to ſacrifice in private, one of them muſt be preſent, otherwiſe the Indians were perſuaded they would not be acceptable to the Gods. It was their peculiar province to conſult the ſtars, and to practiſe divination. According to Strabo's account, they believed that the world had a beginning, and that it will have an end; that its form is circular; that it was created by God, who preſides over, and fills it with his majeſty; and that water is the principle of all things. With regard to the immortality of the ſoul, and the future puniſhment of the wicked, they followed the doctrine of Plato; intermixing it, like that philoſopher, with ſome fictions, in order to expreſs or deſcribe thoſe puniſhments. The Brachmans are celebrated all over the ancient world for their wiſdom, the auſterity of their lives, and their invincible fortitude and patience. Their food conſiſted altogether of herbs, roots and fruits, and their drink was water. They wholly abſtained from the fleſh of animals, and thought themſelves defiled by touching them: they thought it highly criminal to deprive the moſt inconſiderable animal of life; and as they held the doctrine of the Metempſychoſis, they ſuppoſed that the ſouls of men tranſmigrated into thoſe of brute animals. Pythagoras is ſaid to have ſtudied their doctrine and manners, and to have received his notion of the tranſmigration of ſouls, or Metempſychoſis, from them. Perſuaded that it is below the dignity of a man to wait calmly for death, when he finds himſelf oppreſſed by age or ſickneſs, they earneſtly wiſh for the moment when the ſoul ſhall leave the body, and hold it to be glorious and laudable to preclude the approach of their laſt hour, and to burn themſelves alive. Among them, no honours were paid to thoſe who died merely of old age; and they conceived, that their funeral pile, and the fire that was to reduce them to aſhes, would be polluted if they did not move to it with a firm and quick ſtep, and aſcend it with fortitude and animation. Cicero, in his Tuſculan Queſtions, (l. v. n. 78.) expreſſes his admiration of the invincible patience, not only of the Indian ſages, but alſo of the women of that country, who uſed to contend for the honour of dying with their common huſband. This privilege was reſerved for that wife to whom the huſband was moſt affectionately attached; and it was decided in her favour by the ſentence of perſons appointed for that purpoſe, who never pronounced judgment till they had made a ſtrict examination, and heard the allegations on all ſides. The wife, who was ultimately preferred, ran to meet death, and aſcended the funeral pile with incredible firmneſs and joy: whilſt the ſurviving wives withdrew with the moſt depreſſing regret and ſorrow, and with their eyes bathed in tears. Some of the Brachmans, however, lived in cities, and aſſociated with their own ſpecies; and ſo far from conſidering ſuicide, or a premature ſurrender of themſelves to death, as a virtuous and brave action, they looked upon it as a weakneſs in man not to wait patiently the ſtroke of death, and as a crime to anticipate the will of the Gods. The Brachmans were all of one tribe; and in this reſpect, they differed from the Gymnoſophiſts, and particularly from the Samanæans, who might have belonged to any family or Indian tribe. They formed the firſt and principal of the four caſts that ſubſiſted from time immemorial among the Hindoos, and that were ſuppoſed to be derived from Brama. See Cast.

In ancient times it ſhould ſeem, that the Brachmans were not hereditary, or a diſtinct Levitical tribe; but that any member of the other caſts might enter into this order, which was of courſe deemed inferior to the chief ſecular or military caſt. But in latter times the caſe has been very different; for the meaneſt Bramin will not now condeſcend to eat with his ſovereign. The Brachmans from the time of their birth were put under guardians; and as they grew up, had a ſucceſſion of inſtructors. They were in a ſtate of pupillage till 36 years of age; after which they were allowed to live more at large, to wear fine linen and gold rings, to live upon the fleſh of animals not employed in labour, and to marry as many wives as they pleaſed. Others of them ſubmitted, through their whole lives, to a ſtricter diſcipline, and paſſed their days upon the banks of the Ganges, with no other food beſides fruits, herbs, and milk. The rigours practiſed by the Brachmans are almoſt incredible, and would hardly be believed, if they were not atteſted by the beſt authority, and by the reports of modern travellers concerning the cruelties, penalties, and even tortures, which are commonly practiſed without ſcruple by the Indian Bramins. Pliny relates, (N. H. l. vii. c. 2.) that ſome have ſtood with their eyes ſtedfaſtly fixed upon the ſun from morning to night, and that others have remained, in one and the ſame painful poſture, upon the burning ſands, for whole days. For a further account of the tenets and practices of the ancient Brachmans, ſee Gymnosophists and Samanæans.

Among thoſe Brachmans, that are mentioned with particular reſpect by the Greek writers, who treat of the time when Alexander viſited India, and particularly by Strabo, (Geog. l. xv.) are Mandanis and Calanus. The former is celebrated for the boldneſs with which he cenſured the intemperance and licentiouſneſs of Alexander and his army, in a conference which he held with Oneſicritus. The latter, when he ſaw Alexander's meſſengers clothed with fine linen garments and elegantly adorned, laughed at their effeminacy, and requeſted them, if they wiſhed to hold any conference with the Brachmans, to lay aſide their ornaments, and, like them, recline naked upon the rocks. Of him, it is alſo related, that when he found the infirmities of age coming upon him, he devoted himſelf to voluntary death, and aſcending the funeral pile, ſaid, "Happy hour of departure from life, in which, as it happened to Hercules, after the mortal body is burned, the ſoul ſhall go forth into light!"

The modern Bramins of Hindooſtan derive their name from the ancient Brachmans, and pretend to derive their doctrine and practice from the ſame origin. In ſeveral particulars, the reſemblance is manifeſt; and although much inferior, both as philoſophers and men of learning, to the reputation of their anceſtors, as prieſts their religious doctrines are ſtill followed by the whole nation, and as preceptors they are the ſource of the greateſt part of the knowledge which exiſts in Hindooſtan. However, ſir William Jones, and ſeveral other intelligent authors on that ſubject, caution us againſt confounding the ancient Brachmans with the modern Bramins. The religion of Bouddha, (ſee Boodh and Birman *empire*,) ſtill retained by the Birmans and other adjacent nations, it is ſaid, was the real ancient ſyſtem of Hindooſtan; but the artful Bramins have introduced into it many innovations, in order to increaſe their own power and influence. If the conjectures of ſir William Jones, relative to the inſcriptions found at Mongueer, and on the pillar at Buddal, (Aſiat. Reſearches, vol. i. p. 123, &c. 8vo.) be well founded, it appears that the governing power on the banks of the Ganges, as late as about the time of the birth of Chriſt, belonged to the ſect of Bouddha. Although the Bramins had then introduced themſelves into Hindooſtan, and had obtained lands and even the rank of prime miniſter to the great Rajah; they had not perſuaded him to change his religion, a change which, when accompliſhed (ſays Dr. Buchanan, Aſiatic Reſ. vol. vi. p. 165.) proved equally deſtructive to the prince, and to the people. He adds, "however idle and ridiculous the legends and notions of the worſhippers of Bouddha may be, they have been in a great meaſure adopted by the Brahmens, but with all their defects monſtrouſly aggravated; rajahs and heroes are converted into gods, and impoſſibilities are heaped upon improbabilities. No uſeful ſcience have the Brahmens diffuſed among their followers; hiſtory they have totally aboliſhed; morality they have depreſſed to the utmoſt; and the dignity and power of the altar they have erected on the ruins of the ſtate, and the rights of the ſubject. Even the laws attributed to Menu, which, under the form in uſe among the Burmas, are not ill ſuited for the purpoſe of an abſolute monarchy, under the hands of the Brahmens have become the moſt abominable and degrading ſyſtem of oppreſſion, ever invented by the craft of deſigning men." From the account which Mr. William Chambers has given of the ſculpture and ruins at Mavalipuram, (Aſiat. Reſ. vol. i. p. 160, 161.) we have very good reaſon for believing, that the worſhip of Bouddha once extended over all India, and that it was not rooted out by the Bramins in the Deccan ſo late as the 9th, or even the 12th century of the chriſtian æra. Dr. Buchanan obſerves, (Aſ. Reſ. vol. vi. p. 163.) that this opinion of the late introduction of the ſuperſtition now prevailing in Hindooſtan is not contradicted by the almoſt ſingular remain of the Hindoo hiſtory; the only one which has eſcaped the deſtructive reſearch of the cunning Bramin; *i. e.* the hiſtory of Caſhmere, preſented to the ſultan Akber on his firſt entrance into that kingdom. We are told, (Ayeen Akbery, ii. 173.) that the Sultan cauſed this book to be tranſlated, and of this tranſlation Abul Fazil has given an abridgment. This informs us, that when Caſhmere was freed from an inundation, by which it had been covered, a certain Kuſhup brought the Bramins to inhabit the new land; that, after a long time, a general aſſembly of the inhabitants was called, who elected a man celebrated for his virtue to be their king; and that from thenceforward monarchy was eſtabliſhed in that delightful region. The name of the firſt ſucceſſor to this king, that is mentioned, is Owngund, contemporary with Kiſhen; referred by Dr. Buchanan to the year before Mahommed 870, or B.C. 248. Theſe Bramins, whom Kuſhup brought to Caſhmere, could not, our author apprehends, be the Bramin ſect of prieſts, as they cultivated the earth, and were the the only inhabitants of the country; but they muſt have been one of the Brachman nations, ſeveral of which, according to Pliny, were diſperſed over India; and theſe again, he conjectures, are the ſame with the Biamma of the Răhāns, ſuppoſed by them to have been the firſt inhabitants of the earth. "That this muſt be the meaning of the hiſtory of Caſhmere (he ſays) ſeems plain; as we are told, rajah Jennek, the 45th prince, and who, according to my theory, muſt have lived about the year of Chriſt 202, eſtabliſhed in his reign the Brahmeny rites. His ſucceſſor Jelowk, the moſt powerful of the princes of Caſhmere, tolerated the doctrine of Bowdh; and in that delightful valley it was not till the reign of Nerkh, the 59th prince, A. D. 342, that the Brahmens got the better of the followers of Bowdh, and burned down their temples." In proceſs of time, as the Răhāns, or prieſts of Godama in the Birman empire, were entirely prohibited the ſtudy of aſtrology, and as the people were much addicted to all kinds of divination, the Bramins availed themſelves of their credulity, and eſtabliſhed themſelves in conſiderable numbers all over India, beyond the Ganges. It does not ſeem, however, that they have any concern in the religion of theſe countries; but they are merely employed about the courts, and in the houſes of the great, as the Chaldeans were about the kings of Perſia, as ſooth-ſayers and wiſe men. They annually compoſe almanacks; they perform incantations, under the throne of the king, before an audience is given on ſolemn occaſions; they are conſulted in all matters of importance, for determining the fortunate hour or ſeaſon in which theſe ought to be undertaken; and they beſtow on their protectors, amulets, charms, and ſuch trifles. By ſuch means the Bramins have rendered themſelves important and uſeful in the Birman empire, and have obtained many privileges, confirmed even by the written law of the kingdom. However, their introduction into the Birman kingdom is a very recent event. The knowledge of the Birman Bramins is chiefly confined to aſtrology, and it is ſaid, that they are very ignorant of aſtronomy; in ſo much that, when they attempt to calculate eclipſes, they do not pretend to aſcertain either the hour of their commencement, or the extent of the obſcuration. It is alſo aſſerted that the Bramins of Hindooſtan are not much farther advanced in ſcience than thoſe of Amarapura, notwithſtanding the improvements they have introduced from time to time, as they were able to procure information from their conquerors, Mahommedans and Chriſtians. The lunar zodiac, in uſe among the Bramins, has been exhibited by ſir William Jones, (Aſ. Reſ. vol. ii. 291, &c.) and is ſuppoſed by him to have been communicated to the Birmans from Chaldæa by the intervention of the Bramins; nor is it unreaſonable to imagine that the Bramins have derived aſtronomical knowledge from the Greeks and Arabs.

The religion of the Bramins, according to the opinions maintained by Paulinus and ſir William Jones, is eſſentially the ſame with that of the Egyptians; and M. Anquetil du Perron concurs with the latter in ſuppoſing that Egypt was the ſource from whence the Bramin worſhip has been ſpread over a great part of the Eaſtern world. The Bramin prieſts in India adopted and extended it, and, as we have already obſerved, gained a ſuperiority over the prieſts of Bouddha about the time of Chriſt; and about 900 years afterwards they totally overthrew his doctrine in its native country. The Vedas, which are the oldeſt books of the Bramins, are inferior in antiquity to the time of Bouddha, becauſe they mention the name of that perſonage. Againſt the Egyptian origin of the Braminical worſhip, the coſmography of the Bramins has been adduced: this is nearly the ſame with that of the Răhāns, and ſeems to have been framed in the north of Hindooſtan. However, we may reaſonably ſuppoſe the Bramins to have been a colony of Egyptians, who formed their firſt eſtabliſhment in the vicinity of Bombay; as the images in the cave at Elephanta (which ſee) ſeem to be thoſe of the gods of the Bramins. By degrees they engrafted their ſuperſtition on the ignorance of the Hindoos, adapting the African deities and myſtical philoſophy to the Aſiatic fables and heroes, and carefully introducing the Egyptian caſt and ceremonies, with all their dreadful conſequences. Some have ſuppoſed, that the religion of the Bramins was introduced from Egypt into India as early as the time of Seſoſtris; but to this opinion it has been objected, that the object of his military expeditions, if indeed we allow their reality (ſee SESOSTRIS), appears to have been plunder, and the capture of ſlaves, rather than the propagation of religion or philoſophy. The perſecution of the Egyptian prieſts by Cambyſes is an event more likely to have produced an extenſive migration into India; nor is it improbable that the Egyptians, who before this time traded to India, might have communicated ſome knowledge of their ſcience to the Hindoos.

Whatever was the preciſe æra of the introduction of the Bramins into India, it ſeems to be unqueſtionable, that, in the uſual courſe of human affairs, a conteſt aroſe, at ſome period or other after their ſettlement, between the regal and eccleſiaſtical powers. The latter, inſtead of being ſubdued, as in China and Japan, acquired the ſuperiority, as in Thibet. But in Hindooſtan, from a moſt refined and cunning policy, the prieſthood aſſerted the divine inſtitution of the ſeveral caſts (ſee CAST), and, in the natural progreſs of their power, pronounced their own to be the ſupreme, and poſſeſſed of innate and hereditary ſanctity. It ſeems to be allowed that Boodh was a deified philoſopher; and it is alſo probable, that Brahma was the ſophiſt who invented the new caſts, and was not only deified, but placed in the firſt rank of the gods, by the grateful prieſthood, which aſſumed the ſole direction of the national mythology. The chief modern deities of the Bramins are Brahma, Viſhnu, and Siva, *i. e.* the creator, the preſerver, and the deſtroyer, correſponding to the three characters under which the Greeks repreſented their Zeus or Jupiter. But the fundamental principle of the whole fabric of Indian mythology, conformable to the univerſal ſyſtem of the Eaſt, was the belief in a ſupreme creator, too ineffable and ſublime for human adoration, which was therefore addreſſed to inferior, but great and powerful divinities. The names and attributes of the gods and goddeſſes (for the voluptuous Hindoos delight in female divinities), are very numerous, and, as human ideas and wants are almoſt univerſally the ſame, correſpond in many inſtances with the Greek and Roman polytheiſm. The chief divinities of the Hindoos are well repreſented in Sonnerat's decorated publication: and we have an elaborate account of them in a tract "On the Gods of Greece, Italy, and India," publiſhed in the firſt volume of the Aſiatic Reſearches, p. 221—275.

The Bramins of Hindooſtan conſtitute the firſt and chief of the four orders or caſts (ſee CAST) into which the whole body of the people is diſtributed. Their order is deemed the moſt ſacred; and to them belongs the province of ſtudying the principles of religion, performing its functions, and cultivating the ſciences. They have been for a long time, whatſoever be their origin, and whether it be more ancient or more modern, the prieſts, the inſtructors, and the philoſophers of the nation. Such is the ſuperiority of their caſt or order, even to that of the monarchs of India, with regard both to rank and ſanctity, that they would deem it degradation and pollution, if they were to eat of the ſame food with their ſovereign. Their perſons are ſacred, and even for the moſt heinous crimes they cannot be capitally puniſhed; their blood muſt never be ſhed. On important occaſions, it is the duty of ſovereigns to conſult them, and to be directed by their advice, as was the caſe with reſpect to the ancient Brachmans. Their admonitions, and even their cenſures, muſt be received with ſubmiſſive reſpect. From ſome accounts preſerved in India of the events which have happened in their own country, we find, that princes, who violated the privileges of the caſts, and diſregarded the remonſtrances of the Bramins, have been depoſed by their authority, and put to death. The diſcoveries of modern times, procured and furniſhed by thoſe who have viſited India during the courſe of the three laſt centuries, afford us a conſiderable degree of authentic information concerning the ſtate of ſcience among the Bramins. The diſtinction between matter and ſpirit appears to have been known at an early period by the philoſophers of India; nor can any deſcription of the human ſoul be more ſuited to the dignity of its nature than that given by the author of the "Mahabarat," an epic poem, in high eſtimation among the Hindoos, compoſed, according to their account, by Kreeſhna Dwypayen Veias, the moſt eminent of all their Bramins, above 3000 years before the Chriſtian æra. This poem conſiſts of more than four hundred thouſand lines. Mr. Wilkins has tranſlated above a third part of it; but only a ſhort epiſode, entitled "Baghvat-Geeta," is publiſhed. "Some," ſays the author, "regard the ſoul as a wonder; others hear of it with aſtoniſhment; but no one knoweth it. The weapon divideth it not; the fire burneth it not; the water corrupteth it not; the wind drieth it not away; for it is indiviſible, inconſumable, incorruptible; it is eternal, univerſal, permanent, immoveable; it is indiviſible, inconceivable, and unalterable." With regard to the knowledge of logic and metaphyſics, for which the Bramins have been celebrated, we learn from Abul Fazil's compendium of the philoſophy of the Hindoos in the Ayeen Akbery (vol. iii. p. 95, &c.); from the ſpecimen of their logical diſcuſſions contained in that portion of the SHASTER, publiſhed by colonel Dow (Diſſertation, p. 39, &c.); and from many paſſages in the Baghvat-Geeta; that the ſame ſpeculations which occupied the philoſophers of Greece had engaged the attention of the Indian Bramins; and the theories of the former, either concerning the qualities of external objects, or the nature of our own ideas, were not more ingenious than thoſe of the latter. That ſceptical philoſophy, which denies the exiſtence of the material world, and aſſerts nothing to be real but our own ideas, ſeems to have been known in India as well as in Europe; and the ſages of the Eaſt, as they were indebted to philoſophy for the knowledge of many truths, and were able to define with accuracy, to diſtinguiſh with acuteneſs, and to reaſon with ſubtlety, were not more exempt than thoſe of the Weſt from its deluſions and errors. To the ſubject of ethics the Bramins had directed particular attention; and their ſentiments ſeem to have been various; ſo that, like the philoſophers of Greece, they were divided into ſects, diſtinguiſhed by maxims and tenets often diametrically oppoſite. From ſeveral paſſages that occur in the Baghvat-Geeta we may infer, that the diſtinguiſhing doctrines of the Stoical ſchool were taught in India many ages before the birth of Zeno, and inculcated with a perſuaſive earneſtneſs nearly reſembling that of Epictetus. From India the weſtern world derived their knowledge of the modern mode of notation by 10 cyphers or figures, which have been univerſally adopted, and found ſo convenient for performing every operation in arithmetic with the greateſt facility and expedition. (See ARITHMETIC.) The aſtronomy of the Indians affords a proof ſtill more conſpicuous of their extraordinary progreſs in ſcience. To M. de la Loubere, on his return from an embaſſy to Siam, A. D. 1687, we are indebted for an extract from a Siameſe MS. which contained tables and rules for calculating the places of the ſun and moon. The epoch of theſe tables correſponds to the 21ſt of March, A. D. 638. Another ſet of tables was tranſmitted from Chriſnabouram, in the Carnatic, the epoch of which anſwers to the 10th of March, A. D. 1491. A third ſet was brought from Narſapour, the epoch of which is between the 17th and 18th of March, A. D. 1569. The fourth, and moſt curious ſet of tables was publiſhed by M. Le Gentil, who received them from a learned Brahmin of Trivalore, on the Coromandel coaſt. The epoch of theſe laſt tables is very ancient, and coincides with the beginning of the celebrated æra of the Collee Jogue, which, according to the Indian account, commenced 3102 years before the birth of Chriſt. The calculations of M. Bailly, founded on theſe four ſets of tables, have been verified by Mr. Playfair, who has alſo illuſtrated and extended his reaſonings, in a learned diſſertation publiſhed in the Tranſactions of the Royal Society of Edinburgh, vol. ii. p. 135. From the inquiries, reaſonings and calculations that relate to Indian aſtronomy, it has been inferred, that the motion of the heavenly bodies, and more particularly their ſituation at the commencement of the different epochs to which the four ſets of tables refer, are aſcertained with great accuracy; and that many of the elements of their calculations, eſpecially for very remote ages, are verified by a ſurpriſing coincidence with the tables of the modern aſtronomy of Europe, when improved by the lateſt and moſt nice deductions from the theory of gravitation. The Indian Bramins annually circulate a kind of almanack, which contains aſtronomical predictions of ſome of the moſt remarkable phenomena in the heavens, ſuch as new and full moons, the eclipſes of the ſun and moon; and they ſeem to poſſeſs certain methods of calculation, that involve a very extenſive ſyſtem of aſtronomical knowledge. M. Le Gentil, while in India, had an opportunity of obſerving two eclipſes of the moon, which had been calculated by a Bramin; and he found the error in either to be very inconſiderable. The method of calculating eclipſes, adopted by the Bramins, is very different from that which was practiſed among rude nations in the infancy of aſtronomy, and founded on an analyſis of the motions of the ſun and moon, which indicate a conſiderable acquaintance with theſe motions. Indeed, the modern Bramins, though they are guided in their calculations by ſcientific principles, do not underſtand them; nor are they acquainted with the method of conſtructing the tables, to which they recur in their computations. Of courſe the ancient Bramins, who conſtructed the tables and rules now in uſe, muſt have poſſeſſed an extenſive and tolerably accurate acquaintance with the elements of geometry, and alſo with the principles of plain and ſpherical trigonometry. See BENARES.

With regard to the religious inſtitutions of the Bramins, they ſeem to be artfully contrived with a view of extending their own authority, and maintaining their influence over the people. They form, indeed, a regular and complete ſyſtem of ſuperſtition, ſtrengthened and upheld by every circumſtance that can excite the veneration, and ſecure the attachment

ment of the multitude. The temples conſecrated to their deities (ſee PAGODA) are magnificent, and highly ornamented with the moſt exquiſite works in painting and ſculpture; the rites of their worſhip are pompous and ſplendid, and the performance of them conſtitute an eſſential part of the more momentous tranſactions of common life; and the Bramins themſelves, who are the miniſters of religion, and preſide in all its functions, are of an order elevated above all others, acknowledged to be ſacred, and, by a gradation of rank among themſelves, adapted to maintain ſubordination in their own claſs, and to give them a more abſolute dominion over the minds of the people. This dominion they are enabled to ſupport by having a command of the immenſe revenues, with which the liberality of princes, and the zeal of pilgrims and devotees, have enriched their pagodas. The number of their deities, the attributes and characters they aſcribed to them, and the various rites by which they celebrated their worſhip, are ſuch as indicate their origin in the ruder ages of ſociety, and ſuch as are adapted, in their nature and deſign, to anſwer the purpoſes of their introduction and eſtabliſhment. The manners of the Indians, though diſtinguiſhed, from the time when they became known to the people of the Weſt, for mildneſs, ſeem, in a remoter period, to have reſembled thoſe of other nations. Accordingly, ſeveral of their deities were fierce and awful in their nature, and were repreſented in their temples under the moſt terrific forms. By the known influence of ſuperſtition we ſhall be able to account for the eſtabliſhment of a ritual of worſhip ſuited to the character of ſuch deities, among a gentle people. Every act of religion, performed in honour of ſome of their gods, ſeems to have been preſcribed by fear; and a variety of mortifications and penances was introduced among them, the recital of which is accompanied with horror. Although it is repugnant to the feelings of an Hindoo to ſhed the blood of any creature that has life, many different animals, not excepting the moſt uſeful, ſuch as the horſe and the cow, were offered up as victims upon the altars of ſome of their gods; and their pagodas were even polluted with human ſacrifices, as well as the temples of the Weſt. But religious inſtitutions and ceremonies of a leſs ſevere kind were more adapted to the genius of a people, formed, by the extreme ſenſibility of their mental and corporeal frame, to an immoderate love of pleaſure. Accordingly there is no part of the earth, in which a connection between the gratification of ſenſual deſires and the rites of public religion is diſplayed with more ſhameful indecency than in India. In every pagoda a band of women was ſet apart for the ſervice of the idol honoured there, and devoted from their youth to a life of pleaſure, for which the Bramins prepared them by an education, which added ſo many elegant accompliſhments to their natural charms, that what they gained by their profligacy often brought no inconſiderable acceſſion to the revenue of the temple. It is the office of theſe women, in every ſervice performed in the pagoda, and in every public proceſſion, to dance before the idol, and to ſing hymns in his praiſe; and it is difficult to ſay, whether they treſpaſs moſt againſt decency by the geſture which they exhibit, or by the verſes which they recite. The walls of the pagoda are covered with paintings in a ſtyle no leſs indelicate; and in the innermoſt receſs of the temple is placed the "Lingam," an emblem of productive power, which it would be improper to explain.

If we advert to the theology of the Bramins, we ſhall find that, amid all their polytheiſm and ſuperſtition, they acknowledge and reverence one Supreme Being, the creator of all things, and from whom all things proceed. "They all," ſays Abul Fazil (Ayeen Akbery, vol. iii. p. 3) "believe in the unity of the godhead; and although they hold images in high veneration, it is only becauſe they repreſent celeſtial beings, and prevent the thoughts of thoſe who worſhip them from wandering." To the ſame purpoſe, the Pundits who tranſlated the "Code of Gentoo laws," declare, that "it was the Supreme Being, who by his power formed all creatures of the animal, vegetable, and material world, from the four elements of fire, water, air, and earth, to be an ornament to the magazine of creation; and whoſe comprehenſive benevolence ſelected man, the centre of knowledge, to have dominion and authority over the reſt; and having beſtowed upon this favourite object judgment and underſtanding, gave him ſupremacy over the corners of the world." Theſe refined ſentiments the modern Bramins derive from the writings of their ancient Pundits, to which they are alſo indebted for the wiſdom which the moſt learned members of their order now poſſeſs. The moſt profound myſteries of the Hindoo theology, which had been long carefully concealed by the art of the modern Bramins from the body of the people, have been unveiled by the tranſlations from the Sanſcrit, or SHANSCRIT language lately publiſhed. The principal deſign of the Baghvat-Geeta, already cited, ſeems to have been to eſtabliſh the doctrine of the unity of the godhead, and, from a juſt view of the divine nature, to deduce an idea of that kind of worſhip which will be moſt acceptable to a perfect being; and we find in this poem deſcriptions of the Supreme Being, equal in ſublimity to any which we derive from the Greek philoſophers. Dow, in his "Diſſertation," (p. 40.) quotes a paſſage from one of the ſacred books of the Hindoos, from which we may infer what were the general ſentiments of the learned Bramins concerning the divine nature and perfections: "As God is immaterial, he is above all conception; as he is inviſible, he can have no form; but from what we behold of his works, we may conclude that he is eternal, omnipotent, knowing all things, and preſent every where." To men capable of forming ſuch ideas of the deity, the public ſervice in the pagodas muſt have appeared to be an idolatrous worſhip of images, by a ſuperſtitious multiplication of frivolous or immoral rites; and they muſt have perceived, that it was only by ſanctity of heart, and purity of manners, men could hope to gain the approbation of a Being perfect in goodneſs. This truth is ſedulouſly inculcated in the "Mahabarat;" but, at the ſame time, with the prudent reſerve and artful precautions natural to a Bramin, ſtudious neither to offend his countrymen, nor to diminiſh the influence of his own order. We find, however, a very lamentable mixture of ignorance and error in all the theories of the Bramins, in common with the ſages of other countries, concerning the perfections and operations of the Supreme Being. As they held that the ſyſtem of nature was not only originally arranged by the power and wiſdom of God, but that every event which happened was brought about by his immediate interpoſition; and as they could not comprehend how a being could act in any place in which it was not preſent, they ſuppoſed the deity to be a vivifying principle diffuſed through the whole creation, an univerſal ſoul that animated each part of it. Every intelligent nature, particularly the ſouls of men, they conceived to be portions ſeparated from this great ſpirit, to which, after fulfilling their deſtiny on earth, and attaining a proper degree of purity, they would again be re-united. In order to efface the ſtains with which a ſoul, during its reſidence on earth, has been defiled, by the indulgence of ſenſual and corrupt appetites, they taught that it muſt paſs, in a long ſucceſſion of tranſmigrations, through the bodies of different animals, until, by what it ſuffers and what it learns in the various forms of its exiſtence, it ſhall be ſo thoroughly refined from all pollution, as to be rendered meet for being abſorbed into the divine eſſence, and returns like a drop into that unbounded ocean, from which it originally iſſued. Theſe doctrines of the Bramins concerning the deity, as the ſoul which pervades all nature, giving activity and vigour to every part of it, as well as the final re-union of all intelligent creatures to their primæval ſource, coincide with the tenets of the Stoical ſchool. In the errors alſo of their theological ſpeculations we may diſcover a great ſimilarity. As it was maintained by many among the Greek and Roman philoſophers, that the vulgar and unlearned had no right to truth, the Bramins of India adopted ſimilar ideas, and they regulated their conduct in the ſame manner with reſpect to the great body of the people. To their order belonged the excluſive right of reading the ſacred books, as well as of cultivating and teaching ſcience; and therefore they had it in their power more effectually to prevent all who were not members of the order from acquiring any information beyond what they were pleaſed to impart. Hence it happened, that, like many of the ſages of Greece, the Bramins of India, carried on, with ſtudied artifice, a ſcheme of deceit, and, according to an emphatical expreſſion of an inſpired writer (Rom. i. 18.), they *detained* the truth in unrighteouſneſs. Whilſt they themſelves knew and approved what was true, they laboured among the reſt of mankind to ſupport and perpetuate what was falſe.

The Bramins of Hindooſtan have a language peculiar to themſelves, which they call Sanſcrit, of Shanſcrit (which ſee); and in this language they have ancient books written, as they allege, by their great prophet and founder Brahma; ſuch as the *Beda*, or *Vedam*, delivered, as they ſay, to their lawgiver, Brahma, by the Deity; the *Shaſter*, or *Shaſtah*, which is their bible; and *Puran*, or *Pourane*, a hiſtory which they deem ſacred, and which they pretend to have been dictated by God himſelf, containing alſo the explanation of the ſhaſter. For an account of theſe books ſee each of theſe terms. Theſe ſacred books are kept in cloſe cuſtody by the Bramins; nor do they ſuffer their contents to be communicated to their own laity, much leſs to ſtrangers. The ſhaſter contains a ſummary of their moral and ceremonial laws, together with the diſtribution of mankind into tribes and claſſes, and an account of the rules of conduct appropriated to each. (See SHASTAH.) From this book, on the precepts of which the Bramins profeſs to found their practice, it appears, that their religion and particularly the ceremonial part of it, conſiſts in frequent ablutions in their rivers, and more eſpecially in the Ganges, muttering over divers prayers under green trees, and in their temples, accompanied with proceſſions, tinkling of bells, offerings to images, unctions, and ſimilar rites, the obſervance of faſts and feſtivals, prigrimages, invocations of ſaints, and divers ſtrange and unaccountable penances. From their *Vedam* they pretend to derive ſeveral privileges, peculiar to their own order; ſuch as thoſe of celebrating the feaſt called "Iagam," at which they kill animals, and eat fleſh, and offer a beaſt for ſacrifice, which they ſtrangle, in order to avoid ſhedding its blood; of teaching the Kutteries the manner of celebrating this feaſt; of reading the Vedam, and of teaching it to their own tribe, and that of the Kutteries; of demanding but not of giving alms; and of never being puniſhed with death, even for the moſt enormous crimes. Their office is to teach others not only reading, writing, and arithmetic, but the principles of their religion. As a recompence for their time and labour, the kings, or rajahs, aſſign for their ſupport the revenues of certain villages, and they alſo receive contributions from the inhabitants of the ſeveral countries in which they reſide. They are alſo allowed to officiate as merchants, and to practiſe phyſic, but are ſtrictly forbidden to employ themſelves in tillage, or any handicraft trade; or to perform any ſervile office, even for the king. An offence of this kind would incur degradation and expulſion from their tribe; however, they are permitted to act as ſecretaries, ambaſſadors, or counſellors to their ſovereigns, and, indeed, they almoſt wholly engroſs theſe honourable offices to themſelves. The birth, baptiſm, and education of the Bramins are attended with circumſtances and ceremonies peculiar to themſelves. At their baptiſm, they are not only waſhed with water, but anointed with oil, which rites are accompanied with prayers and benedictions. At an early age, they are inveſted with a ſmall cord, which is hung on the left ſhoulder, and deſcends low on the right ſide; and which they retain as an eſſential article of their attire. The Bramins never contract marriage out of their own tribe, and that they do at a very early period of life. On this occaſion they receive a ſecond little cord, reſembling the firſt, and to this alſo they uſually annex a third, which ſerves inſtead of an upper garment. When the Bramins arrive at maturer and more advanced age, they are allowed to take wives out of the other tribes; but they never marry their children to near relations, as inceſt is deemed by them one of the five mortal ſins which is ſcarcely ever to be forgiven. Among the Bramins polygamy is indulged to great exceſs; and as an apology for it, they allege, that the Vedam has not forbidden it. For concubinage and adultery they have no puniſhment; but a Bramin who finds his wife to be inconſtant, confines her and ſupplies her with food while ſhe lives; and if he is much attached to her, he requires her to ſerve at a feaſt, to which he invites ſeveral of his tribe, and after the gueſts have received victuals from her hand, ſhe is regarded as an honeſt woman. Their diet, like that of the ancient Brachmans, is ſimple and temperate, and conſiſts ſolely of rice, roots, fruits, and herbs, and their drink is water and milk. They never uſe any intoxicating liquor; for they abhor drunkenneſs and reckon it among their mortal ſins. Although the Bramins decline eating fleſh, becauſe they deem the ſlaughter of animals for this purpoſe to be a great ſin; they are, however, charged with inconſiſtency by the Kutteries and Soudras, who eat fiſh and fleſh, as they diſlodge many ſouls from their bodies by plucking up roots and plants, which, upon their ſyſtem of tranſmigration, are endued with ſouls as well as animals.

The Bramins, as we have already obſerved, are prieſts both ſecular and regular, and have amongſt them an eſtabliſhed hierarchy, compoſed of ſeveral orders, that are variouſly diſtinguiſhed in the ſeveral provinces of Hindooſtan. The learned Bramins conſtitute two claſſes; the firſt of which is called "Kuru," and belongs to the prieſthood; the ſecond, denominated "Saſtiriar," or "Shaſtiriar," comprehends the profeſſors of the different ſyſtems of theology. Beſides theſe two claſſes of learned Bramins, there are many others, not much inferior to them in wiſdom and erudition, whoſe chief buſineſs is to inſtruct youth in thoſe points which relate to the ceremonies uſed in public worſhip, and ſolemn feſtivals. The miniſterial function of the Bramins conſiſts in praying with the people, and reading their law. To them it alſo belongs to educate the young perſons of the ſame tribe, who advance by various gradations to the prieſtly office. When they are ſet apart to this office, they are enjoined not to change their tribe; to obſerve all things contained in the law of the Bramins; and not to communicate the myſteries of their religion to any of a different perſuaſion.

The Bramins are divided into ſix ſects; *viz.* Weiſtnouwa, Seivia, or Aradheya, Smartu, Shauvakka, Paſenda, and Chektea, who are diſtinguiſhed by certain differences in their tenets, and ceremonial practices. For a further account of the doctrines, worſhip, character, cuſtoms, &c. of the Bramins, we may refer to the La Porte Ouverte of M. Roger. chaplain to the Dutch factory at Poolicat on the coaſt of Coromandel; the travels of Bernier and Sonnerat; the Diſſertations of Orme, Dow, ſir William Jones, &c. &c.; the Code of Gentoo Laws; the Aſiatic Reſearches; Robertſon's Diſquiſition concerning India, &c. See alſo the articles above referred to, and alſo BENARES, HINDOOS, HINDOOSTAN, &c. in this dictionary.

Robert de Nobili, an Italian Jeſuit, and one of the Indian miſſionaries, in the beginning of the ſeventeenth century, in order to ſecure ſucceſs to his miſſion, aſſumed the title and appearance of a Brachman, and at length perſuaded the credulous people, that he was, in reality, a member of that venerable order. He forged a deed in the ancient Indian characters, ſhewing that the Brachmans of Rome were older than thoſe of India, and that the Jeſuits of Rome deſcended in a direct line from the god *Brahma.* He farther declared on oath, that he derived his origin from this Indian deity. By this impoſture he proſelyted twelve eminent Brachmans, whoſe influence proved very favourable to his miſſion. After his death, the Portugueſe Jeſuits carried on the impoſture with very conſiderable ſucceſs. Theſe miſſions, however, were ſuſpended and abandoned, in conſequence of a papal mandate, iſſued out in the year 1744, by Benedict XIV. who declared his diſapprobation of the artifices that had been uſed in the converſion of the Indians. Moſheim's Eccl. Hiſt. vol. iv. p. 211, &c. 8vo. edit.

BRACHMANUS, in *Ancient Geography*, a river of India, on the other ſide of the Ganges, between this river and Catabeda.

BRACHME, CANJE-VARAM, a town of India, in the peninſula on this ſide of the Ganges, according to Ptolemy. It was ſituated in the interior of the country, at an equal diſtance from the eaſtern coaſt of the peninſula and the town called Arcatis, and occupied by the people denominated by Ptolemy "Brachmani Magi."

BRACHODES, the name of a promontory in the Mediterranean, on the coaſt of Africa. Ptolemy. Strabo calls it "Ammonis promontorium," and Procopius "Caput-Vada."

BRACHSEN, in *Ichthyology.* See BRAMA CYPRINUS.

BRACHVOGEL, in *Ornithology*, the name given by Friſch to the *ſcolopax arquata*, or common curlew.

BRACHURI, in *Zoology*, a term applied by Dr. Hill to a genus of animalcules of a roundiſh figure, with tails ſhorter than the body. The vermes of this deſcription have undergone of late years much accurate inveſtigation, eſpecially by Mülleri, the reſult of which is, that the genus of *brachuri* is exploded by modern writers on the *animalcula infuſoria.*

BRACHYACANTHUS, in *Entomology*, an inſect of the ICHNEUMON genus found in Europe. The colour is black; ſpots on the head and thorax; ſmall line on the ſcutel, and tip of the abdomen white; ſting very ſhort; ſhanks fuſcous, whitiſh at the baſe. Linn. &c.

BRACHYACANTHUS, a ſpecies of ICHNEUMON, the colour of which is black; antennæ fuſcous; abdomen and legs yellow; ſting very ſhort. Linn. Inhabits Europe.

BRACHYCOLON, from *βραχυς, ſhort*, and κολον, *member*, is when one member of a period is ſhorter than another.

In which ſenſe, the word ſtands contradiſtinguiſhed from *iſocolon*, where the members are equal, or conſiſt of the ſame number of ſyllables.

BRACHYGLOTTIS, in *Botany*, (from βραχυς, *ſhort*, and γλωττα, *a tongue.*) Forſter Nov. gen. Juſſieu 181. La Marck pl. 677. Claſs, *ſyngeneſia polygamia ſuperflua.* Nat. Ord. *Compoſitæ radiatæ. Corymbiferæ.* Juſſieu. Gen. Char. *Calyx* common, oblong, cylindric, ſimple; ſcales linear, equal, cottony. *Cor.* compound radiate. *Corrollules of the diſk*, hermaphrodite, funnel-ſhaped, a little longer than the calyx, with a five-cleft upright border; *of the ray*, ligulate, few, very ſhort. *Seeds* oblong; down ſeſſile, plumoſe. *Recep.* naked.

Eſſ. Char. *Flowers* radiate. *Corollules of the ray* few, ſhort, recurved, three-toothed. *Calyx* polyphyllous, connivent, cylindric, equal. *Down* plumoſe.

Species, 1. B. *repanda.* Leaves ovate, repando-ſinuate. 2. B. *rotundifolia.* Leaves nearly round, very entire. Forſter.

BRACHYGLOTTIS. See CINERARIA.

BRACHYGRAPHY, (from βραχυς, *ſhort*, and γραφω, *ſcribo, I write,*) denotes the art of ſhort-hand writing, called alſo TACHYGRAPHY. See SHORT-HAND.

BRACHYLOGY, from βραχυς, *ſhort*, and λογος, *expreſſion*, in *Rhetoric*, brevity, the expreſſing any thing in the moſt conciſe manner. This, ſo far as conſiſtent with perſpicuity, is a virtue and beauty of ſtyle; but if obſcurity be the conſequence, which is often the caſe, it becomes a blemiſh and inexcuſable defect. Quintilian gives us an inſtance of brachylogy from Salluſt: *Mithridates, corpore ingenti perinde armatus:* Mithridates, as it were armed with the hugeneſs of his ſtature. Inſt. Or. lib. viii. cap. iii.

BRACHYOTOS, in *Ornithology*, a ſpecies of STRIX, or OWL, of the horned kind. It is ſpecifically diſtinguiſhed by having the horn-feather or tuft very ſhort; the body is fuſcous above; feathers edged with yellow; beneath pale yellow, longitudinally ſtreaked. Forſt. Penn.—Donov. Brit. Birds, &c.—Buffon calls this kind of owl *chouette*, or *grande chevêche.* It is the ſhort-eared owl of Engliſh ornithologiſts. The length is fourteen inches. Found in America as well as Europe.

BRACHYPNŒA, in *Medicine*, a term expreſſing ſhort breathing, a ſymptom which occurs in various affections of the lungs, both acute and chronic, from βραχυς, *ſhort*, and πνέω, *I breathe.* See DYSPNŒA.

BRACHYPOTÆ, a term applied to perſons labouring under acute diſeaſes, who drink but little, and with difficulty; from βραχυς *ſhort*, and πότης, *a drinker.* This term has been applied by ſome modern phyſicians to perſons labouring under hydrophobia.

BRACHYPTERA, in *Entomology*, a ſpecies of MANTIS, found by Pallas in Ruſſia. The colour is cinereous, thorax dentated; wings half the length of the abdomen. Haunts ſandy deſerts.

BRACHYPTERA, in *Ornithology*, the name of a genus of birds of the rapacious kind, in Willughby's Syſtem. The birds of this genus he diſtinguiſhes by the ſhortneſs of the wings, the word being derived from βραχυς, *ſhort*, and ϖτερον, *a wing;* theſe, when folded, not reaching ſo far down as the extremity of the tail. Of this genus were the *goſhawk, ſparrow hawk* and three kinds of *butcher-bird.* Neither the generical term, nor the diſcriminating character laid down for it are recognized by modern ornithologiſts.

BRACHYPTERUS, in *Entomology*, a ſpecies of CIMEX, deſcribed by Linnæus, the colour of which is pale; body linear; wing-caſes a third part the length of the abdomen. Inhabits Europe.

BRACHYPTERUS, a ſpecies of GRYLLUS (*Tettigonia,* Fab. *Locuſta,* Gmel.) Inhabits the north of Europe. This kind feeds upon the graſs; it is of a greyiſh fuſcous colour, and is diſtinguiſhed further by having the wings, and wing-caſes half the length of the body, a circumſtance to which its ſpecific name alludes.

BRACHYPYRENIA, from βραχυς, *ſhort*, and πυρην, *nucleus*, in *Natural Hiſtory*, a genus of foſſils of the claſs of SEPTARIÆ. The brachypyrenia have a ſhort roundiſh nucleus, incloſed by, and contained within, the body of the maſs.

BRACHYTELOSTYLA, the name of a genus of cryſtals.

The word is derived from βραχυς, *ſhort*, and τελειος, *perfect*, and ϛυλος, a *colnmn*, and expreſſes a perfect cryſtal, with a ſhort intermediate column.

The bodies of this genus are cryſtals compoſed of a ſhort hexangular column, terminated at each end by an hexangular pyramid. Of this genus there are ſix known ſpecies. Hill's Hiſt. Foſſils, p. 163.

BRACHYURA, in *Ornithology*, a ſpecies of FRINGILLA, that inhabits Italy. It is briefly deſcribed as being entirely yellowiſh.

This is the ſhort-tailed ſparrow, and ſhort-tailed Italian ſparrow of Engliſh writers. Briſſon names it *paſſerculus bononienſis*.

BRACHYURUS, in *Entomology*, a ſpecies of ICHNEUMON, that inhabits Germany. The colour is fulvous: ſcutel fulvous; thorax, eyes, and abdomen, (which is linear at the baſe,) black. Schranck.—Abdomen and head teſtaceous; legs yellow.

Brachyurus, in *Ornithology*, a ſpecies of LANIUS, deſcribed by Pallas. The head above is ferruginous grey; eye-brows whitiſh; a black band from between the eyes to the ears; body above greyiſh, cinereous; beneath yellowiſh white; tail rounded.—This is the *ſhort-tailed ſhrike* of Latham. Found but rarely in Hungary.

Brachyurus, the ſhort-tailed crow, a ſpecies of CORVUS, of a green colour; beneath tawnyiſh, and lineated on the head with the ſame colour; wings with a white ſpot.

This bird inhabits the iſlands of the Indian ocean. The ſpecies admits of no leſs than ſeven diſtinct varieties, according to ſome writers, of which number Gmelin deſcribes three, *corvus Philippinenſis*, *corvus Bengalenſis*, and *corvus Madagaſcarienſis*.

BRACIEUX, in *Geography*, a town of France, in the department of the Loire and Cher, and chief place of a canton, in the diſtrict of Blois, 3 leagues N.E. of Blois. The place contains 700, and the canton 10,250 inhabitants; the extent of the territory comprehends 345 kiliometres and 14 communes.

BRACKE, a town of Germany, in the circle of Weſtphalia, and county of Oldenburgh; 18 miles N.N.E. of Oldenburg.

Bracke, or Brake, a town of Germany, in the circle of Weſtphalia, and county of Lippe; one mile S.E. of Lemgow.

BRACKEN, a county of Kentucky in America, containing 2382 inhabitants.

BRACKENWITZ, a town of Germany, in the circle of Upper Saxony, and middle mark of Brandenburg; 3 miles S. of Treuenbrietzen.

BRACKET, in *Building*, denotes a kind of wooden ſtay, in form of a knee or ſhoulder, ſerving for the ſupport of ſhelves, &c. or a cramping-iron, which ſerves as a ſtay in timber work. The word is alſo written *braget*, and ſeems derived from the Italian *brachetto*, a diminutive of *brachio*, *arm*. Modillons are a ſort of *brackets* to the *corona* of an entablature.

Bracrets, in *Artillery*. See CHEEKS *of a Mortar*.

Brackets, in *Ship-building*, ſmall knees ſerving to ſupport the galleries, and commonly ornamented with carving. Alſo, the timbers fixed under the galleries and frame of a ſhip's head to ſupport the gratings.

BRACKISH *water*, a mixture of freſh and ſalt water.

BRACKLEY, in *Geography*, an ancient borough town of Northamptonſhire, England, conſiſts of the two pariſhes of St. James's and St. Peter's, and a hamlet called Old Brackley. Leland ſtates, that this place conſiſted of many ſtreets, in his time, and that it was a flouriſhing town during part of the Saxon dynaſty, till the Danes "raſed it." Edward the IId. made it a wool-ſtaple, and gave it a corporation; but it was not inveſted with borough privileges till the laſt parliament of Henry VIII., when two members were returned. "There was a fair caſtle," ſays Leland, "in the ſouth-weſt end; the ſite and hill where it ſtood is evidently ſeen, and beareth the name of the Caſtle Hill, but not any piece of wall ſtanding." Here were alſo three ancient catholic croſſes, one of which, ſays this reſpectable antiquary, "was decorated with divers tabernacles, with ladies and men armed. Some ſay the ſtaplers of the town made it; but I rather think ſome nobleman, lord of the town." This croſs, 28 feet high, was taken down in 1706, by the duke of Bridgewater, to build the handſome town-houſe in its place. Robert Boſſu, earl of Leiceſter, founded an hoſpital here in the time of Henry III. John, ſon of lord chancellor Elleſmere, was created viſcount Brackley 14th James I., earl of Bridgewater the following year, and marquis, afterwards duke of Bridgewater, 6 George I. On Bayard's Green, between Brackley and Mixty, was held a famous tournament in 1249; and another was held here about the ſame time. The river Ouſe riſes near this town, and ſupplies it with water. Here are a weekly market on Wedneſday, and five fairs annually. It is 13 miles from Northampton, and 63 N.W. from London. The two pariſhes and hamlet contain 183 houſes, and 1495 inhabitants, of whom 533 are employed in manufactures. Gough's edition of Camden's Britannia; Bridge's hiſtory of Northamptonſhire, folio.

BRACKWADE, a town of Germany, in the circle of Weſtphalia, and county of Ravenſberg; 4 miles S.E. of Bielefeld.

BRACLAW, or BRACKLAU, a city of Poland, and capital of a palatinate of the ſame name, called alſo Lower Podolia, ſeated on the river Bog.

BRACTEA, a thin flake or ſpangle of any ſubſtance; it is uſed by many authors in the ſame ſenſe with the word *lamina*, but uſually in a ſort of diminutive ſenſe, expreſſing a ſmall plate.

Bractea, Bracte, in *Botany*, a name given by the Latins to very thin plates of gold, ſilver, or other metal, and applied by Linnæus to the floral leaves of a plant, firſt diſtinguiſhed and deſcribed by himſelf. They conſiſt of ſcales, or of ſmall leaves, which differ from the other leaves of the plant generally in figure, and often in colour. They are placed ſometimes on the peduncle, and always near the flower, ſo that in ſome caſes they are liable to be miſtaken for a perianth: they may, however, be diſtinguiſhed from it by their continuing as long as the proper leaves; whereas the perianth withers as ſoon as the fruit becomes ripe. Good examples of bracteæ may be found in tilia (linden or lime-tree), melampyrum (cow-wheat), monarda (oſwego balm), &c.

According to the phyſiology of Linnæus, and his immediate pupils, they are formed in the bud, by a kind of anticipation, and become proper leaves of the new ſhoot or branch in the ſecond year, if the ſtate of infloreſcence be not haſtened on by the force of the medullary principle: but when that takes place, as in certain circumſtances it naturally does, part of the nouriſhment which they would otherwiſe have received, being diverted to the uſe of the fructification, they do not acquire their full vigour, and in conſequence, dwindle into floral leaves. In proof of this theory, it is alledged, that if the fructification be prematurely deſtroyed by inſects, or purpoſely cut off, they regain ſufficient ſuſtenance, and aſſume the form and ſize of perfect leaves. See the introduction to the ſecond volume of the Syſtema Naturæ, and two diſſertations, entitled *Prolepſis Plantarum*, publiſhed in the Amœnitates Academicæ.

The bracteæ are placed by Linnæus under the head of what he fancifully calls fulcra, props, or ſupports, from an idea that they ſuſtain or ſtrengthen either the whole plant, or ſome of its parts. In the Syſtema Naturæ they are diſtinguiſhed according to their duration, into *caducous*, falling off before the end of the ſummer; *deciduous*, falling off at the end of the ſummer; and *perſiſtent*, remaining beyond the end of the ſummer; but it does not appear how the criterion laid down in the Philoſophia Botanica, to diſcriminate a bracte from a perianth, is to be applied to thoſe that are caducous. They are ſtiled *comoſe*, when they ſhelter the flowers in the form of a crown, tuft, or coma, (head of hair) as in the fritillaria imperialis (crown imperial), bromelia ananas (pine-apple), &c.: but in this caſe they do not very happily correſpond with the generic appellation fulcrum. They have the character of *imbricate*, when they are placed among the flowers ſo cloſe to them and to one another, as to form a kind of ſpike or head, as in prunella (ſelf-heal), and origanum (marjoram).

Bracteæ not only afford excellent ſpecific differences, but are ſometimes admitted into the generic character, as in many genera of the natural order, umbelliferæ, and in ſome of the claſs didynamia; and are there ſaid by Linnæus to conſtitute an involucrum; one of his ſpecies of calyx. They are, however, truly bractes; and would, doubtleſs, have been ſo conſidered by him, if, under that denomination, they had not interfered with the eſtabliſhed principle, that generic characters are to be taken ſolely from the parts of fructification.

BRACTEA, in *Entomology*, a ſpecies of PHALÆNA of the noctua family, the wings of which are variegated, and in the middle of each of the anterior pair is a large ſhining golden ſpot. Fabr. &c. Found in England, though very rarely: more common in the ſouth of Europe.

BRACTEARIA, in *Natural Hiſtory*, the name of a genus of foſſils of the talc claſs; the characters of which are, that they are compoſed of ſmall plates in form of ſpangles, and each of theſe, naturally very thin or fiſſile, into very thin ones.

The word is derived from the Latin *bractea*, a *ſpangle*, or ſmall and thin glittering particle of any thing.

There are many ſpecies of this genus denominated from the variety of their colours; as MICA *aurea*, or gold glimmer, and MICA *argentea*, ſilver-glimmer, cat's-ſilver, &c.

BRACTEATA, in *Entomology*, a ſpecies of CICADA, (*membracis*, Fabr.) of a ſmall ſize, that inhabits Cayenne, the thorax of which is green, and without ſpots.

BRACTEATED, among *Antiquaries*, denotes a coin covered over with a thin plate, or leaf of ſome richer metal. See MEDAL.

Bracteated coins, or medals, *nummi bracteati*, are uſually made of iron, copper, or braſs, plated over, and edged with gold or ſilver leaf, and then ſtamped with the hammer or mill.

Medalliſts find ſome bracteated pieces even among the truly ancient coins. The French call them *fourrées*.

BRACTEATUS, in *Entomology*, a ſpecies of MONOCULUS, the ſhell of which is orbicular and unarmed. Müll. The ſhell of this kind is very pellucid; antennæ and legs furniſhed with briſtles: eyes not conſpicuous. Inhabits pure freſh water.

BRACTON, HENRY DE, in *Biography*, a celebrated Engliſh lawyer and judge of the 13th century, was, according to Prince (Worthies of Devon), a native of Devonſhire; and having gained diſtinguiſhed reputation by his ſtudy of both the canon and civil law at Oxford, he was appointed by King Henry III. one of his judges itinerant about the year 1244, and afterwards, as ſome ſay, lord chief juſtice of England. In the exerciſe of this office he conducted himſelf with exemplary integrity; but his fame is principally owing to his excellent treatiſe on the laws of England, generally entitled "De legibus et conſuetudinibus Angliæ;" though he himſelf gave it the title of "Brito," whence many miſtakes have occurred in writing his name. This work has always been eſteemed one of the moſt accurate and methodical treatiſes on our laws. It was firſt printed at London, in 1569, in folio; and reprinted in 1640, in 4to., from a collection of various manuſcripts for the amendment of the text. Some inconſiſtencies have been charged on Bracton from the citation of different paſſages in his book; in ſome he ſeems to diſcover too great an attachment to the authority of the pope; and in others he gives ſuch various repreſentations of the regal authority in this kingdom, as ſeem to favour ſometimes the extenſion, and at other times the reſtraint and limitation, of the royal prerogative. Theſe inconſiſtencies, however, have been aſcribed by candid writers to the unſettled times wherein he lived, in which the power of the king, and that of the barons were alternately prevalent, and charters of liberty were no ſooner ſigned than violated. The time of his death is not preciſely aſcertained: but he probably ſurvived his maſter, and died in the reign of Edward I. Biog. Brit.

BRAD, in *Geography*, a town and capital of a diſtrict of the ſame name, in the county of Weiſſenburg, in Tranſylvania.

BRADDOCK'S *field*, a place in America, ſituate on Turtle creek, on the N. E. bank of Monongahela river, 6 miles E. S. E. from Pittſburg, and rendered memorable by the defeat of general Braddock, who with 1400 men, the firſt diviſion of his army, fell into an ambuſcade of 400 Indians, by whom he was defeated and mortally wounded, July 9th, 1755. The American militia, diſdainfully placed in the rear, continued unbroken, and ſerved as a rear-guard; and under col. Waſhington, afterwards preſident of the United States, preſerved the regulars from being entirely cut off.

BRADDOCK'S *bay* lies on the ſouth ſide of lake Ontario, at the mouth of Geneſſee river.

BRADFIELD, a market town of England, in the county of Eſſex.

BRADFORD, JOHN, in *Biography*, a proteſtant martyr, who flouriſhed in the reign of queen Mary, was born at Mancheſter, in the early part of the reign of king Henry VIII. Having received a good education, not only in the Latin tongue, but particularly in writing and accounts, he was recommended to ſir John Harrington, treaſurer, pay-maſter of the forces, and principal engineer at Boulogne, and was employed by him as his clerk. In this employment, for which his education had eminently qualified him, he continued many years, approving himſelf to his principals, and deriving from his office conſiderable emolument as well as honour. In the diſcharge of his truſt, however, he ſeems to have availed himſelf of his acuteneſs and dexterity, as an accountant, in a manner that rendered him uneaſy in his own mind, more eſpecially after he had heard a ſermon from Latimer on the ſubject of "Reſtitution;" and he immediately determined to procure an adjuſtment of his accounts with the crown, and to apply to his maſter, ſir John Harrington, for this purpoſe; ſir John demurred and delayed, and thought Bradford conſcientiouſly preciſe and ſcrupulous. This incident gave a new direction to his views and purſuits; and though for ſome time he purſued the ſtudy of the law at the Inner Temple, he reſolved to remove to Cambridge, and to devote himſelf to the profeſſion of a divine. In this new ſituation he applied to his ſtudies with ſingular diligence, and firſt took his degree of M.A.; and was afterwards elected fellow of Pembroke hall. During this time the recollection of his former miſconduct oppreſſed his ſpirits, nor was he able to recover the tranquillity of his mind till, by ſucceſſive payments, as his circumſtances would allow, he had diſcharged the full ſum of 520l. 10s. as a reſtitution to the king. By this act of juſt retaliation, performed voluntarily on his own part before the king and council knew of the offence, did he give the moſt unequivocal proof of the ſincerity of his repentance, and lay the ſureſt foundation of that reputation and uſefulneſs for which he was afterwards diſtinguiſhed. Having thus pacified the accuſations of his conſcience, he proceeded in his ſtudies with unabated vigour; and his character for piety was likewiſe ſo eminent, that biſhop Ridley, in 1550, ſent for him to London, induced him to receive deacon's orders, gave him a licence to preach, and ſoon after appointed him one of his own chaplains. Mr. Bradford acquired great popularity as a preacher, both at St. Paul's Croſs in London, and in his native county; and continued the exerciſe of his miniſtry with unintermitting ardour and ſingular ſucceſs until the cloſe of king Edward's reign, and after the commencement of that of queen Mary. But with the change that took place on this occaſion, he, as well as many others, ſuffered the ſeverity of perſecution. His undaunted reſolution and zeal expoſed him to peculiar danger; and his popularity as a preacher, which afforded him an opportunity of preſerving the life of a popiſh prieſt, who by a furious declamation againſt the late king, and in favour of popery, had incenſed the multitude that formed his auditory at St. Paul's Croſs, was interpreted by his enemies into an occaſion of offence; and in conſequence of this act of humanity and kindneſs, for which he merited recompence even from the powers that then prevailed, he was arreſted by order of the queen's council and biſhops, and committed to priſon under a charge of ſedition and hereſy. During his cloſe confinement, for about a year and a half, in various priſons, he manifeſted an invincible attachment to the principles of the reformation; and exerted himſelf by private admonitions and epiſtolary addreſſes, for which he availed himſelf of every opportunity that occurred, in repreſenting the deluſions of popery, and in confirming thoſe who were wavering in their adherence to the proteſtant faith. Many of his letters and diſcourſes are extant; and they abound with expreſſions of the moſt fervent piety and unſhaken conſtancy. In the beginning of the year 1554, he was brought before a commiſſion ſpecially appointed for his examination; but as he perſiſted in an undiſmayed avowal of his opinion, he was finally condemned. After his condemnation, he was remanded to priſon, where he remained near half a year longer; manfully reſiſting every attempt that was made with a view of inducing him to abandon the cauſe to which he was devoted, and recommending himſelf to mild treatment on the part of thoſe who had the cuſtody of him, by the gentleneſs of his temper and manners. During the ſucceſſive intervals of his confinement, he preached conſtantly, and was allowed to receive the viſits of his friends, who reſorted in great numbers to enjoy the benefit of his diſcourſes. So irreproachable and exemplary, indeed, was his conduct, and to ſuch a degree did he attach the eſteem, and intereſt the humanity of thoſe who had acceſs to him, that many papiſts were induced to expreſs their wiſhes for the preſervation of his life. To his fellow priſoners he communicated ſalutary counſel, and pecuniary aſſiſtance, as their ſeveral circumſtances required; and he was eminently uſeful in reclaiming the erroneous, and in reforming the vicious and profligate. At length, however, the day of his execution arrived; and when it was announced to him, he lifted up his eyes to heaven, and ſaid, "I thank God for it; I have looked for it a long time; therefore it comes not ſuddenly, but as a thing waited for every day and hour; the Lord make me worthy of it." On the 1ſt of July, 1555, he was brought to the ſtake at Smithfield, in company with a Yorkſhire youth, named John Lyefe, then an apprentice in London, whom he animated to conſtancy by his example of calm and undaunted fortitude; and having kiſſed a faggot and the ſtake, he pulled off his cloaths, and prepared for the laſt tremendous ſcene. At the ſtake, he exclaimed aloud, with his hands and face lifted up towards heaven, "O England, England, repent thee of thy ſins; beware of idolatry, beware of Antichriſts, leſt they deceive you:" and then forgiving and entreating forgiveneſs of all the world, he comforted his companion, and embracing the flaming reeds that were near him, uttered theſe words, the laſt which were diſtinctly heard; "Strait is the way, and narrow is the gate," &c. and thus expired. Biog. Brit.

BRADFORD, *Eaſt* and *Weſt*, in *Geography*, townſhips of America, in the county of Cheſter, and ſtate of Pennſylvania.

BRADFORD, a townſhip of Eſſex county in the Maſſachuſetts, ſeated on the ſouth ſide of Merrimack river, oppoſite to Haverhill, and 10 miles weſt of Newbury port. It has two pariſhes, and contains 1420 inhabitants. In this place is a manufacture of leather ſhoes for exportation, and ſome veſſels are built in the lower pariſh. Several ſtreams fall into the Merrimack river from this town, which ſupport a number of mills of various kinds.—Alſo, a townſhip in Hillſborough county, New-Hampſhire, incorporated in 1760; 20 miles E. of Charleſtown.—Alſo, a townſhip in Orange county, Vermont, on the weſt bank of Connecticut river, about 20 miles above Dartmouth college. In this townſhip is a remarkable ledge of rocks, about 200 feet high, which appears to threaten the paſſing traveller; the interval between it and the river is ſcarcely wide enough for a road.

BRADFORD, a market and manufacturing town in Wiltſhire, in England, 100 miles W. from London, and 7 N. E. from Bath. Its name appears to have been derived from the Saxon term *Bradenford*; ſo called from the broad ford which formerly croſſed the river at this place. Though not a town of large extent, it has acquired conſiderable importance from the great quantities of fine broad cloth manufactured here, as from ten to twelve hundred pieces are ſent away annually. One manufactory alone employs nearly fifteen hundred perſons, and the number of clothiers is between ſixty and ſeventy. Its ſituation is peculiarly romantic, being principally built on the declivity of a hill, and conſiſts of three ſtreets riſing one above the other. Theſe are narrow and irregular, yet many good houſes preſent themſelves to the eye of the paſſenger. The church, a plain ſtone building, with a ſquare tower and ſmall ſteeple, is ſituated at the foot of the hill, and conſiſts of a nave, N. aiſle, chancel, and a ſmall chapel on the S. ſide. In the chancel are ſeveral large and handſome monuments, and the church is ornamented with two windows of modern ſtained glaſs, which were given by John Ferrott, eſq. a native of Bradford; who alſo left a donation of ten pounds to be laid out in bread, and diſtributed among the poor monthly. Near the church is a free-ſchool for boys, and in the town are two charitable eſtabliſhments for old men and women. The river, diſtinguiſhed by the name of the Lower Avon, paſſes through, and divides the town into two parts, reſpectively termed the New and Old Town. Theſe are connected by two ſtone bridges, one of nine arches, the other of four. The markets, which are on Mondays and Saturdays, are well ſupplied with meat and vegetables. It has alſo two fairs for cattle, &c. Bradford formerly ſent two members to parliament, who were ſummoned the twenty-third year of Edw. I. but diſcontinued the next year. The town was greatly damaged by fire on the 30th of April 1742. The houſes are 1288, and the inhabitants 7302, of which number 4648 are employed in the manufactory. By a notice in the Saxon chronicle, it appears that a battle was fought near this town in 652, between Kenewalch, a weſt Saxon king, and the Britons, who were defending the counties of Somerſet, Devon, and Cornwall from Saxon dominion; but their efforts proved unſucceſsful, and Kenewalch drove them farther weſtward. A nunnery was founded here by Aldhelm, biſhop of Sherborne, about the year 706, which was totally deſtroyed in the Daniſh wars, and never afterwards reſtored. This lordſhip, with the parſonage, were given to the nunnery of Shaftſbury by king Ethelred in the year 1010. About 2 miles N.E. from Bradford is the village of Holt, noted for a medicinal ſpring which was diſcovered in the year 1718. Four miles N.W. is Monkton Farley, the ſeat of the duke of Somerſet. About 3 miles S.W. are the mouldering ruins of Farley caſtle, formerly one of the reſidences of the Hungerfords.

Bradford, an ancient and conſiderable market and manufacturing town in the Weſt Riding of Yorkſhire, in England; is ſituated between Leeds and Halifax; 10 miles from the former, 8 from the latter, and 196 N.W. from London. It is an extenſive pariſh, containing ſeveral ſubordinate hamlets, ſcattered cottages and ſeats. The proſperous ſtate of the clothing trade, and the augmentation of its manufactures ſince the general application of machinery, have conſpired to increaſe conſiderably the buildings and population of this part of the country. In 1801 the houſes of this town were eſtimated at 1368, and its inhabitants at 6393 about 1300 of whom were directly employed in manufactures. Though worſted ſtuffs are the ſtaple trade of the place, yet ſome broad and narrow cloths, wool cards, combs, and leather boxes are alſo made here. For the convenience and accommodation of the tradeſmen of the town, a public ſtructure has been erected, called the Piece-hall, wherein various manufactured articles are exhibited and ſold. In the vicinity of Bradford is a ſpacious iron foundery, with forge, &c. which is advantageouſly ſupplied with its coal and iron ore, on the ſpot: here have lately been caſt ſome pieces of cannon for government. Three large iron-founderies are alſo eſtabliſhed in this town; alſo a very ſpacious ſtill-houſe, for the diſtillation of aquafortis and ſpirits of vitriol. By a cut from the Leeds and Liverpool canal, the manufactures of the place are cheaply conveyed to the great marts of commerce; and other merchandizes and materials are brought back in return. Bradford has a weekly market (Monday), and two principal fairs annually. The church is a large well proportioned ſtructure, dedicated to St. Peter; and has under it the chapels of Thornton, Wibſey, and Haworth. The adjacent land is all incloſed, poſſeſſed by ſmall proprietors, and moſtly occupied by the manufacturers of the town. It is chiefly kept in paſture for the ſupport of cows; but a ſmall portion is ploughed, and appropriated to oats. At the commencement of the civil war in 1641, Bradford was beſieged and ranſacked by the earl of Newcaſtle's army.

At Pudſey, 4 miles from Bradford, is a large religious houſe, belonging to the Moravians; and conſiſts of a chapel, refectory, dormitory, ſchool, &c. See Moravians. Aikin's Deſcription of the country round Mancheſter, 4to.

BRADING Bay, lies in the Iſle of Wight, at the eaſt end of the iſland, almoſt oppoſite to Portſmouth, and not far from St. Helen's road. It is generally dry at low-water, and when the tide is in, has only a narrow channel for ſmall veſſels, on account of a bar at the entrance.

BRADLEJA, in *Botany*, (in honour of Richard Bradley, F. R. S. the firſt profeſſor of botany at Cambridge.) Schreb. 1474. Gærtner, 632. Glochidion, Forſter. Claſs, *monœcia monadelphia*, (Schreb.) *Monœcia hexandria*, (La Marck.) Nat. Order, *Euphorbiæ*.

Male Flowers.

Calyx, none, (Schreb.) five or ſix leaves, perſiſting (Gærtner.) *Corol.* petals ſix, ovate, concave, ſpreading, nearly equal. (Schreb.) none, (Gært.) *Stam.* filaments three, very minute; anther cylindric, erect, conſiſting of three united, didymous anthers, tipped with a ſharp-pointed appendage. (Schreb.) ſix, (Gært.)

Female Flowers.

Cal. none. *Cor.* one-petalled, ſix parted, inferior, three of the ſegments interior, (Schreb.) *Cal.* and *Cor.* as in the male, (Gært.) *Piſt.* germ globoſe, ſix-furrowed, ſuperior; ſtyle none; ſtigmas, from ſix to eight, very ſmall, converging, (Schreb.) ſtyle thick, ſix-parted above, ſtigmas ſimple, obtuſe, (Gært. from the papers of Solander,). *Perianth.* capſule depreſſed with twelve furrows, ſix cells, and ſix valves, dehiſcent. *Seeds*, ſolitary, roundiſh, (Schreb.) two in each cell, (Gært.)

Species 1. B. *ſinica*, (La Marck illuſt. pl. 772. a branch in fruit,) a ſhrub. *Leaves*, alternate, lanceolate, veined. *Flowers*, axillary, ſingle, peduncled. 2. B *zeylanica*. A ſhrub. *Calyx*, monophyllous, ſix-parted, (Gært.) Flowers more than one on a peduncle, (La Marck.) 3. B. *Glochidion*, (Philipica, Cavanilles, pl. 371.) A tree. *Leaves*, alternate, lanceolate, ſmooth, axillary, very ſmall and numerous.

Bradleja is nearly allied to phyllanthus; but the ſtructure of the ſeeds is ſo ſingular, that it ought to be made a diſtinct genus.

BRADLEY, James, in *Biography*, an eminent aſtronomer, was born at Shireborn, in Glouceſterſhire, in the year 1692, and received the firſt rudiments of education at a grammar ſchool in North-leach. He was admitted a commoner of Baliol college, in the Univerſity of Oxford, March the 15th, 1710–11; and took the degree of B. A. October the 24th, 1714, and that of M. A. January the 21ſt, 1716–17. In 1719, he was ordained deacon and prieſt; and preferred in the ſame year by the biſhop of Hereford, who had made him his chaplain, to the vicarage of Bridſtow in Herefordſhire. The ſinecure rectory of Landewy Welfry in Pembrokeſhire was alſo procured for him ſoon after by the honourable Mr. Molyneux. With ſuch patronage he might have indulged reaſonable expectations of more conſiderable preferments, and of attaining to eminence in the church; but his predilection for mathematical and aſtronomical ſtudies gave a different direction to his views and purſuits. In theſe he was aſſiſted and encouraged by his uncle, Dr. James Pound, who then reſided at Wanſtead in Eſſex, where our aſtronomer was curate, and where he commenced thoſe obſervations that laid the foundation of his future fame.

On the 31ſt of October, 1721, he ſucceeded Dr. John Keil, as Savilian profeſſor of aſtronomy at Oxford; and determining to devote himſelf to aſtronomy, ſo congenial to his taſte and talents, he reſigned his preferments in the church. In 1724, he communicated to the Royal Society his obſervations on a comet, which had appeared towards the cloſe of the preceding year; and in 1726, he communicated to the ſame body, of which he had become a member, a paper containing a compariſon of ſome obſervations made at Liſbon, with thoſe made by himſelf at Wanſtead, on the eclipſes of the firſt ſatellite of Jupiter, and publiſhed in the Philoſophical Tranſactions, N° 396. (See Abr. vol. vi. pt. i. p. 412.) Theſe communications were followed by his celebrated theory of the aberration of the fixed ſtars, the diſcovery of which was announced in 1728, and publiſhed in the Philoſophical Tranſactions, No. 406. (See Abr. vol. vi. pt. i. p. 129.) For a particular account and illuſtration of this theory, of the principles on which it is founded, and of the important purpoſes to which it is applicable, ſee the articles ABERRATION, LIGHT, and STAR.

Our author's theory, eſtabliſhed by the moſt accurate obſervations, was approved by the moſt eminent mathematicians; and whilſt the publication of it ſerved in a very high degree to advance his reputation, it was the means of introducing him to the acquaintance and friendſhip of the earl of Maccleſfield, ſir Iſaac Newton, Dr. Halley, and ſeveral other perſons of the moſt diſtinguiſhed character.

In 1730, Mr. Bradley was appointed lecturer of aſtronomy and experimental philoſophy in the univerſity of Oxford; the duties of which office, he performed till within a few years of his death. His obſervations on the comet that appeared in the beginning of the year 1737, were publiſhed in the Philoſophical Tranſactions, N° 446, and an abſtract of them may be found in the Abridgment, vol. viii. pt. i. p. 210. About this time Dr. Halley, who was then the aſtronomer royal, and who had conceived a very high opinion of Mr. Bradley's talents and attainments, formed a deſign of reſigning in his favour; but his death prevented the accompliſhment of his purpoſe. However, after that event, he obtained the appointment in February 1741-2; and was, at the ſame time, honoured with the degree of doctor of divinity by a diploma from Oxford. He was now in a ſituation peculiarly favourable for the proſecution of his favourite ſcience; and he loſt no opportunity of cultivating it by the number and accuracy of his obſervations. Accordingly, in 1747, he announced to the Royal Society his important diſcovery of the nutation of the earth's axis; which was publiſhed in the Philoſophical Tranſactions, No. 485; and is preſerved in the Abridgment, vol. x. pt. i. p. 32. For a particular account of this diſcovery, ſee NUTATION. The Royal Society, duly apprized of its value, conferred on Dr. Bradley their annual prize medal. By means of the excellent inſtruments, conſtructed by Mr. George Graham, Dr. Bradley who knew how to uſe them, and what allowance ought to be made for the errors to which they were ſubject, was enabled to obſerve celeſtial phenomena, which had eſcaped the notice of former aſtronomers; and to the vigilance and accuracy of his obſervations we are indebted for the above-mentioned diſcovery. Senſible, however, of the importance and utility of good inſtruments, our excellent aſtronomer availed himſelf of the yearly viſit of the Royal Society to the Royal Obſervatory at Greenwich, to recommend an attention to this buſineſs; and he ſucceeded in obtaining, by the interpoſition of the ſociety, in 1748, a grant of 1000l. from his majeſty George II. to be laid out under his direction for the improvement of the aſtronomical apparatus. Mr. Graham and Mr. John Bird aſſiſted him in the accompliſhment of this object. To him the world is peculiarly indebted for the new naval quadrant, as well as for thoſe other inſtruments which were ſet up in the Royal Obſervatory. What uſe he made of them will further appear in the ſequel of this article.

In 1748, Dr. Bradley was choſen a foreign member of the Royal Academy of Sciences at Paris; and about the ſame time he became entitled to biſhop Crew's benefaction of 30l. a year to the lecturer in experimental philoſophy at Oxford. In the year 1751, on occaſion of a vacancy in the valuable living of Greenwich, it was thought to be conveniently ſituated for the Royal Obſervatory, and offered, on the part of the king, to Dr. Bradley. But he alleged that the duty of a paſtor was incompatible with his other ſtudies, and neceſſary engagements; and from the moſt conſcientious and laudable motives declined accepting this valuable preferment. The king, however, determining that he ſhould not loſe by his integrity, granted him a yearly penſion of 250l. (Feb. 15, 1752); which was continued till his death by his preſent majeſty, and has ſince been regularly paid to the aſtronomer royal.

In 1752, Dr. Bradley was elected one of the council of the Royal Society; in 1754, he was appointed a member of the Academy of Sciences at Peterſburg, by diploma from the whole body; and in 1757, he was admitted into the Academy of Sciences at Bologna; and he was alſo a member of the Pruſſian Academy of Sciences and Belles Lettres at Berlin. His obſervations on the comet of 1757, were publiſhed in the Philoſophical Tranſactions, vol. i. part 1. p. 408.

Dr. Bradley proſecuted his ſtudies and obſervations with unabated vigour and aſſiduity till within about two years of his death; when, probably, as the effect of his intenſe and little varied application, his ſpirits began to be depreſſed, and he was diſquieted by an apprehenſion that he ſhould ſurvive his rational faculties; a calamity, however, which he never experienced. Nevertheleſs, in 1760, his bodily ſtrength declined; and about the end of June, 1762, he was attacked with a total ſuppreſſion of urine, in conſequence of an inflammation of the kidnies, which terminated his life, at Chalford in Glouceſterſhire, on the 13th of July, in the 70th year of his age. He was interred at Mitchin Hampton, in that county, in the ſame grave with his mother, and his wife, whom he married in 1744, and by whom he had one daughter, who ſurvived him.

"The public character of Dr. Bradley," ſays one of his biographers, "as a man of ſcience and diſcernment, is well eſtabliſhed by his works. His private character was in every reſpect eſtimable. Temperate in his enjoyments, mild and benevolent in his diſpoſition, indifferent to the calls of wealth, diſtinction, and even of fame; he was indebted to his uncommon merit alone for the friendſhip and regard of the moſt eminent men of his time. His manner was engaging and communicative, and his language in converſation clear, impreſſive, and fluent, though he was rather more diſpoſed to liſten than to ſpeak. That he publiſhed ſo little may perhaps be aſcribed to his ſcrupulous accuracy which rendered him diffident, or more probably to the calm and placid temper of his mind, which did not ſtrongly urge him to ſolicit that attention he could at pleaſure command." His obſervations made at the Royal Obſervatory during 20 years, comprized in 13 fol. and two quarto volumes, unfortunately for the intereſts of ſcience, were taken away at his death by his repreſentatives, who, upon preparations being made by government for recovering them by proceſs of law, (and an actual commencement of a ſuit for that purpoſe,) preſented them to lord North, by whom they were transferred, in 1776, to the univerſity of Oxford, of which he was chancellor, on condition of their printing and publiſhing them. In June, 1791, fifteen years after the Obſervations had been given to the univerſity on this condition, and nearly thirty years after the death of Dr. Bradley, the Board of Longitude, ſeeing no proſpect of their being publiſhed, paſſed ſeveral ſpirited reſolutions, reſpecting the public right to theſe Obſervations, and the importance of the publication of them, which were tranſmitted to the vice-chancellor of the univerſity; after conſiderable delay, in March 1792, the Board was informed that the delegates of the preſs in the univerſity were proceeding with the work. About the ſame time in the following year the Board renewed its application to profeſſor Hornſby, under whoſe direction the Obſervations were to be publiſhed; and, he in reply, engaged that the firſt volume ſhould appear on or before March 2d, in the following year. At length, however, after long delay and renewed application, and ſucceſſive interruptions occaſioned by the ill health of Dr. Hornſby, the firſt volume was publiſhed in 1798, in a ſplendid form, more worthy indeed the magnificence of a great univerſity, than ſuitable to the uſe of the practical aſtronomer; under the title of "Aſtronomical Obſervations made at the Royal Obſervatory at Greenwich, from the year 1750, to the year 1762," folio: the price in ſheets being five guineas. Dr. Hornſby, after having ſtated in a preface the cauſes of the delay attending the publication, proceeds to give ſome account of the inſtruments uſed by Dr. Bradley. The tables contained in this volume are "Obſerved tranſits of the ſun, planets, and fixed ſtars over the meridian;" "Meridional diſtances of the ſun, planets, and fixed ſtars from the zenith, ſouthward;" "Meridional diſtances of the fixed ſtars from the zenith northward;" "With zenith ſector;" and likewiſe "Apparent right aſcenſions;" the whole compriſing 757 pages. Biog. Brit. Gen. Biog. Proceedings of the Board of Longitude in regard to the recovery of the late Dr. Bradley's Obſervations, &c. 1795, folio.

Bradley, Richard, profeſſor of botany, in the univerſity of Cambridge, fellow of the Royal Society of London, and foreign aſſociate of the Academy of Sciences at Paris. He appears to have been indefatigable in his reſearches, and to have poſſeſſed no leſs ingenuity than zeal for the promotion of his favourite ſtudy; yet no memoirs have been publiſhed of his life, and we only know the time in which he lived from the date of his ſeveral publications. "Hiſtoria plantarum ſucculentarum," publiſhed in five parts, in 1716, 1717. 1725. 1727, and 1728, 4to.; they were afterwards publiſhed together in 1734, with figures. "A new improvement of planting and gardening, both philoſophical and practical," firſt alſo in parts, and then collectively in 1731, 8vo. In this he gives the anatomy of plants, and their ſexes. He demonſtrates the circulation of the ſap, from the progreſs of a diſeaſe of the branch, downward to the root. He alſo brings, as a further proof, an experiment on the lime-tree, which being planted inverted, with the branches downward, produced leaves and flowers from the roots. "The virtues and uſe of coffee, with regard to the plague and contagious diſeaſes," 1721, 8vo. with an engraved figure of the plant. "Philoſophical account of the works of nature." He here alſo contends for the double ſexes in plants. He gives an hiſtorical account of the principal gardens in Europe, and gives the preference to the public garden at Amſterdam. "New experiments relative to the generation of plants," 1724, 8vo. "Treatiſe concerning the manner of fallowing ground, raiſing of graſs ſeeds, and training of line and hemp," 1724, 4to. "Survey of ancient huſbandry and gardening, collected from the Greeks and Romans," 1725, 8vo. with many other ſimilar works; alſo "Dictionarium botanicum," 8vo. 1728, in which he gives the medical properties and the countries from which the plants were originally brought. See Haller Bib. Botan. for a complete catalogue and account of his works.

BRADNINCH, in *Geography*, an ancient corporate and market town in Devonſhire, England, is ſituated on the banks of the river Collumb, in the great road from Exeter to Bath, 8 miles from the former, 2 from Collumpton, and 163 W. from London. This barony belonged, in the time of Edward the Confeſſor to Brictuold, a Saxon: and at preſent it is veſted in his royal highneſs the prince of Wales. Bradninch ſent members to a parliament holden at Weſtminſter, the ſixth year of Edward II. and likewiſe to another at Windſor in the following reign; but on account of the trouble and expence, the members were excuſed from further attendance.

The original charter of incorporation was granted by Reginald, earl of Cornwall, (natural ſon of king Henry I.), who gave his ſeal to be uſed by them, which is ſtill continued; the corporation conſiſts of a mayor, recorder, twelve maſters, a town-clerk, and two ſerjeants at mace.

The town conſiſts principally of one irregular ſtreet, nearly a mile in length; the houſes, in general, indifferently built, and covered with thatch, are eſtimated at 253, and the inhabitants 1187, who are nearly equally employed in agriculture and manufactures; of the latter, paper-making is the chief, there being, within two miles of the town, five mills conſtantly at work.

Here are a market on Thurſdays, and two fairs. The church dedicated to St. Denis, is an ancient edifice; the body and ſouth aiſle appear to have been built in the end of Edward III.'s reign, or early in that of Richard II. On the breaking out of a rebellion in the north of England, in the 28th year of Henry VIII., this town was appointed the head-quarters for the troops under the command of the marquis of Exeter, who was employed to act againſt the rebels.

BRADS, in *Carpentry*, a ſlender kind of nail, uſed in building, having no ſpreading heads as other nails have.

Of theſe, ſome are called *joiners' brads*, and are for hard wainſcots; others, *batten brads*, for ſoft wainſcots; and ſome *bill-brads*, or *quarter-heads*, uſed when a floor is laid in haſte, or for ſhallow joiſts ſubject to warp to.

BRADSBERG, *Lehn*, or *fief*, in *Geography*, a diſtrict of Norway, in the dioceſe of Chriſtiania, containing the diſtrict of Tillemarken. The inhabitants are diſtinguiſhed for their hardineſs and valour, and have been always accounted the moſt warlike people of Norway. In this diſtrict are ſeveral iron founderies.

BRADWARDINE, Thomas, in *Biography*, denominated the "profound doctor," was born at Hatfield, in Suffolk, (according to Godwin), or at Hartfield, in Suſſex, (according to Bale,) towards the beginning of the 14th century, and educated at Merton college, in the univerſity of Oxford, of which he was proctor, in 1325, and where he took the degree of doctor in divinity. He was introduced to court under the patronage of Stratford archbiſhop of Canterbury, and became confeſſor to Edward III. canon of Lincoln, and chancellor of St. Paul's cathedral in London. He accompanied the king in his warlike expeditions to France, and to his ſanctity and prayers the ſuperſtition of the age aſcribed the victories of this monarch more than to the bravery of the ſoldiers, or the ſkill of their general. In 1348, he was elected by the chapter of Canterbury, to ſucceed Stratford as metropolitan; but, in deference to the king and pope, who preferred John Ulford, he ſurrendered to him the archiepiſcopal chair, but upon his death he was again elected, and confirmed by the king and pope. His conſecration took place at Avignon, but his premature death prevented his being enthroned. As a theologian, and alſo as a mathematician and philoſopher, he gained great reputation, and his character for an attention to the duties of his elevated ſtation is highly commended. His works are lectures delivered at Merton college, and entitled "De cauſa Dei, et de veritate cauſarum contra Pelagium," libri iii. publiſhed by Henry Savile, in London, in 1618, fol.; "Geometrica Speculativa," and "Arithmetica Speculativa," printed together at Paris, in 1512; and "Tractatus Proportionum," Venet. 1505. Moſheim, probably referring to the firſt of the works above recited, ſays, "the learned Bradwardine, an Engliſh divine, advanced many pertinent and ingenious things towards the confirmation of Chriſtianity, in a book upon Providence." Cave, Hiſt. Lit. t. ii. p. 429. Moſheim's Eccl. Hiſt. vol. iii. p. 367.

BRADY, ROBERT, a learned Engliſh hiſtorian and phyſician, was a native of Norfolk, and admitted, in 1643, into Caius college, at Cambridge, where he took his degree of bachelor of phyſic, in 1653, and that of doctor in the ſame faculty, by royal mandate, in 1660. By the ſame mandate he was alſo elected maſter of his college. About the year 1670 he was appointed keeper of the records in the Tower of London, and ſome time after he was choſen regius profeſſor of phyſic in the Univerſity of Cambridge. A letter to Dr. Sydenham, written in 1679, and propoſing certain queſtions, which were anſwered in Sydenham's "Epiſtolæ reſponſoriæ duæ," is his only performance in the line of his profeſſion. His practice was probably inconſiderable, as he employed himſelf chiefly in hiſtorical inveſtigation, and was one of the repreſentatives for the Univerſity, in the Oxford parliament of 1681, and in that of James II. in 1685. He was, however, phyſician in ordinary to the king. He, among others, atteſted the birth of the prince of Wales in 1688. He died in 1700. His principal hiſtorical works are, "An introduction to the old Engliſh hiſtory," and "A complete hiſtory of England, from the firſt entrance of the Romans unto the end of the reign of king Richard II." in 3 vols. fol. The firſt work was printed in one volume in 1684, and the ſubſtance of it may be compriſed in the three following propoſitions, *viz.* 1. That the repreſentatives of the commons in parliament were not introduced till the 49th of Henry III. 2. That William duke of Normandy made an abſolute conqueſt of the nation. 3. That the ſucceſſion to the crown of England is hereditary, and not elective. The ſecond work was printed in two volumes; the firſt in 1685, and the ſecond in 1700. The principal aim of Mr. Brady is to ſhew, that all the Engliſh liberties are derived from the crown by way of conceſſion from the princes; and he adduces a collection of copious materials, chiefly epitomiſed from Matthew Paris, in order to prove that the Normans impoſed on the Engliſh nation their own ſyſtem of laws and cuſtoms. The ſyſtem adopted by Brady, in conſequence of ſome bias reſulting from his obligations to the crown, and his perſonal attachments, and ably ſupported, is the baſis of the general doctrine maintained in Hume's hiſtory. To this purpoſe it is obſerved by the learned Dr. Gilbert Stuart, (View of Society in Europe, p. 327,) that "Mr. Hume, ſtruck with the talents of Dr. Brady, deceived by his ability, diſpoſed to pay adulation to government, and willing to profit by a ſyſtem formed with art, and ready for adoption, has executed his hiſtory upon the tenets of this writer. Yet, of Dr. Brady it ought to be remembered, that he was a ſlave of a faction, and that he meanly proſtituted an excellent underſtanding, and admirable quickneſs to vindicate tyranny, and to deſtroy the rights of his nation." Beſides his three volumes of hiſtory, Dr. Brady alſo wrote, "A treatiſe on Burghs," in a thin folio. Biog. Brit.

BRADY, NICOLAS, an epiſcopalian divine, was lineally deſcended from Hugh Brady, the firſt proteſtant biſhop of Meath in Ireland, and born at Bandon in the county of Cork, in 1659. At the age of 12 years he was removed from Ireland to Weſtminſter ſchool, and from thence elected ſtudent of Chriſt-church at Oxford. After remaining in the Univerſity about four years, he went to Dublin, where his father reſided; and in the Univerſity of that city he obtained the degrees of B. A. and M. A. and afterwards, in a manner peculiarly honourable, he received the degree of D. D. His firſt eccleſiaſtical preferment was to a prebend in the cathedral of St. Barry, at Cork, and to the pariſh of Kinaglarchy, in the county of Cork, to which he was collated by biſhop Wettenhall, to whom he was domeſtic chaplain. His attachment to the revolution, and his zeal in promoting it, expoſed him to much ſuffering; and, ſuch was his intereſt with M'Carty, king James's general, that in 1690, when the troubles broke out in Ireland, he thrice prevented the burning of his native town. Having been deputed by the people of Bandon to come over to England, for the purpoſe of petitioning parliament for a redreſs of ſome grievances which they had ſuffered, while king James was in Ireland, he reſigned his Iriſh preferments, and ſettled in London. In this country he was much eſteemed for his pulpit talents, and obtained ſeveral preferments, amounting in the whole to 600l. per annum; the laſt of which was the rectory of Clapham in Surrey, which he held, together with Richmond, to the time of his death. He was alſo chaplain to their majeſties king William and queen Mary, and afterwards to queen Anne. He died May 20, 1726, in the 67th year of his age. His works are a tranſlation of the "Æneids of Virgil," publiſhed by ſubſcription in 4 vols. 8vo.; "Three volumes of ſermons, publiſhed by himſelf;" and "Three other volumes," publiſhed by his ſon, in 1730; and "A new verſion of the pſalms," in which he was aſſiſted by Mr. Tate. This verſion was licenſed in 1696; and is now uſed in moſt churches of England and Ireland, inſtead of the old and obſolete verſion by Thomas Sternhold and John Hopkins, made in the reign of king Edward VI. Biog. Brit.

BRADYPE, in *Zoology*, (in French) ſynonymous with BRADYPUS, the ſloth.

BRADYPEPSIA, in *Medicine*, a term ſignifying ſlow digeſtion, from βραδὺς, ſlow, and πεψις, concoction. See DYSPEPSIA.

BRADYPUS, in *Zoology*, the firſt genus of animals in the order *bruta*, the character of which ſtands thus in Gmelin: no fore-teeth; grinders in each jaw ſix, obliquely truncated, cylindrical, the two anterior ones longeſt, and far diſtant: body covered with hair. The ſpecies are *tridactylus* and *didactylus*, which ſee.

Dr. Shaw defines the generical character of the ſloth, or *bradypus* genus, in a manner ſomewhat different from the preceding. He obſerves that there are no cutting-teeth in either jaw; that the canine teeth are obtuſe, ſingle, longer than the grinders, and placed oppoſite; grinders, five on each ſide, which are obtuſe; fore-legs much longer than the hind; and the claws very long. The two ſpecies tridactylus and didactylus are retained by this writer, under their old Linnæan names; a third ſpecies is alſo added, the urſine ſloth, bradypus urſinus, the urſiform ſloth of Pennant, and petre ſloth of Catton.

It ſhould be obſerved, that the immenſe foſſil ſkeleton, of which Monſ. Cuivier has given an accurate deſcription under the name of Megatherium, in the opinion of that writer, muſt have belonged to an animal much more nearly allied to the genus bradypus, or ſloth, than to any other at preſent known. The ſkeleton alluded to was found in the vicinity of the river La Plata in a foſſil ſtate, a hundred feet beneath the ſurface of a ſandy ſoil. It is 12 French feet long, and ſix in height. The original is at Madrid.

BRAE-MAR, in *Geography*, a mountainous diſtrict of Scotland, in Aberdeenſhire, 27 miles N.W. from Aberdeen. In this territory the laſt earl of Mar began to raiſe a rebellion in 1715.

BRAE-*Murray*, a mountainous and woody tract of land, lying on the ſhores of Elgin and Nairn in Scotland.

BRAG, a name given to a game at cards, from the nature of it; the principal ſtake being won by him who brags with moſt confidence and addreſs; *i. e.* who challenges the other gameſters to produce cards equal to his. In this game a pair of aces is the beſt brag, a pair of kings the next, and ſo on: and a pair of any ſort wins the ſtake from the moſt valuable ſingle card. The knave of clubs pairs with any other card in hand: but a hand of cards of leſs value in this game has ſometimes gained the ſtake from one of ſuperior value, by the confidence and art of bragging: the conteſt being given up on the part of the latter through fear of loſing. One ſtake is gained by the higheſt card that is turned up in dealing, three cards being dealt round to each perſon, and the laſt turned up; the higheſt card is the ace of diamonds: the other ſtake is won by the perſon who firſt makes up the cards in his hands one and thirty; each dignified card paſſing for ten, and drawing from the pack. Each gameſter depoſits three ſtakes, one for each card.

BRAGA, in *Geography*, the *Bragara* of Antonin's Itinerary, a city of Portugal, and capital of the province of Entre-Duero-e-Minho, is ſituated in a broad open vale, cultivated and ſhaded by trees, near the ſmall river Cavado. It is ſubject to the archbiſhop of the place, who has a revenue of above 100,000 cruſades, and appoints judges and two tribunals, the one ſpiritual and the other temporal; ſo that this is the only city where the king does not appoint a corregidor, or a juiz de fora. In the coutos, or privileged places round the town, his ſentence is final in criminal affairs, but not on the inhabitants of the town. Braga contains about 13,000 inhabitants, 5 pariſhes, and 7 monaſteries. Several of the ſtreets are wide and open, but moſt of the houſes are ſmall. Among the objects of curioſity in this town, we may reckon the large old Gothic cathedral, with its antiquities and treaſures; and alſo the church and monaſtery of St. Fructuoſo, with its treaſures and relics, and ſtanding very conſpicuouſly on a hill without the town. Braga claims a very ancient origin. The Romans called it Auguſta Braccara, and Roman coins are often found in the neighbourhood. Although it has much declined from its former importance, it has a hat-manufactory, which ſupplies a great part of Portugal with hats for the common people; and it has alſo an inconſiderable manufacture of knives. It exhibits ſigns of induſtry and activity; and the women are every where ſeen knitting, ſewing, or making linen. The rich inhabitants are reckoned more reſerved and unſocial than their neighbours in the other towns of Minho; and they are accuſed of being quarrelſome, fond of ſcandal, and of diſagreeable manners. N. lat. 41° 26′. W. long. 8° 9′.

BRAGA, HA, is now called Fort Dauphin, in the iſland of Cuba.

BKAGA, the name of a liquor brewed in Ruſſia from wheat, which, as well as the buſu, that is brewed only from millet, is turbid, foaming, affecting the head, and drank only by the common people. On the Terek, a ſort of beer is brewed, called "terſkaia-braga," by ſoaking millet in warm water; and when it is ſwoln like malt, it is bruiſed, boiled ſoft, and ſo poured upon malted-rye and barley. By the malt the brewage is tepid, and in this ſtate oats are added; it is then left to ferment, and the huſks being ſtrained from the drink, it is fit for uſe. It is of good colour, always turbid, rather clammy, diſguſting to the taſte and ſmell, and very intoxicating.

BRAGANTIA, in *Botany*. Loureiro. Flor. Cochin. Claſs, *gynandria hexandria*.

Gen. Ch. *Calyx* none. *Corol.* one-petalled; tube globular, with ten furrows; border divided into three, equal, obtuſe, recurved ſegments. *Stam.* anthers ſix, ſeſſile, oblong, adhering to the middle of the ſtyle. *Piſt.* ſtyle thick; ſtigma concave; germ linear, inferior. *Pericarp.* long, quadrangular, four-celled, four-valved. *Seeds*, many.

There is only one known ſpecies, a ſhrub about five feet high. *Leaves* large, alternate, lanceolate, very entire, veined. *Flowers* in racemes, axillary, brown red. It grows on the mountains of Cochinchina.

BRAGANZA, in *Geography*, a city of Portugal, and capital of a duchy of the ſame name, in the province of Tra-los-Montes, ſeated on a ſpacious plain near the river Fervença. It conſiſts of a city, fortified with towers and a caſtle; and a town, defended by a fort. Braganza contains two pariſh churches, two hoſpitals, four convents, and about 2700 inhabitants. It is one of the moſt ancient towns in the kingdom, and is ſaid to have been built by Auguſtus. Its manufactures conſiſt of ſilk ſtuffs, velvets, and grogram. It was erected into a duchy by Alphonſo V. in 1542. John II. its eighth duke, was crowned king of Portugal by the name and ſtyle of John IV.; and it confers the ducal title on the preſent reigning family. N. lat. 41° 57′. W. long. 6° 48′.

BRAGANZA, a ſmall town on the frontiers of the marche of Treviſano, in the territory of the republic of Venice.

BRAGGOT, derived from the old Britiſh word *brag*, which ſignifies *malt*, and *gots*, *a honey comb*, a ſort of drink made in ſome parts of England, of malt, with honey, ſpices, and other ingredients.

BRAGNAS, or BRÆGNETZ, in *Geography*, a town of Norway, in a diſtrict of the ſame name, in the dioceſe of Chriſtiania, ſeated on the ſide of the river Dramme, oppoſite to Stromſoe and Tanger. Theſe three towns lie in a fertile vale, at ſmall diſtances from each other, at the bottom of ſome rugged rocks, and on the margin of a bay. They are diſtinguiſhed by the general name of Dramme, becauſe they are ſituated on that river. Each of them has its own church, and ſeparate juriſdiction. The inhabitants are induſtrious, and carry on a conſiderable trade. The principal exports are timber and planks. The imports are chiefly corn, and lead from England for ſmelting the ſilver ore at Kongſberg. In the diſtrict of Bragnas-lehn are ſeveral iron-works, and alſo a glaſs-houſe. N. lat. 59° 45′. E. long. 10° 22′.

BRAGOS, a river of Spain, in Catalonia, which runs into the Segre, 6 leagues N.E. of Balaguer.

BRAGU POINT, lies at the mouth of the great river Ava (ſee AVA); and is ſuppoſed by M. Goſſelin (Geography of the Greeks analyſed) to be the "Magnum Promontorium," which M. d'Anville concludes to be cape Romania, at the extremity of the peninſula of Malacca.

BRAGUZ, a town of Germany, in the county of Tyrol; 27 miles W. of Trent.

BRAHE, TYCHO, in *Biography*, a celebrated aſtronomer, was the deſcendant of a noble family of Sweden, ſettled in Denmark, and born December the 19th, 1546, at Knudſtorp, a ſmall lordſhip near Helſingborg in Scania or Schonen. His father, Otto Brahe, having a large family, the charge of his education was undertaken by his uncle, George Brahe, who adopted him as his heir. This was a fortunate circumſtance for Tycho, as his father thought literature inglorious, and wiſhed all his ſons to follow the military profeſſion. After a courſe of private inſtruction in the Latin language, his uncle ſent him, in 1559, to ſtudy philoſophy and rhetoric at the academy of Copenhagen; where he was caſually incited to the ſtudy of aſtronomy by an eclipſe of the ſun, which happened Auguſt 21ſt 1560, at the preciſe time predicted by aſtronomers. Hence he was led to regard that ſcience as divine, which accurately deſcribed the motions of the celeſtial bodies, and predetermined their relative poſitions. From this time he devoted himſelf to the ſtudy of aſtronomy; and by means of the tables of Stadius, which he purchaſed, he acquired a knowledge of the theory of the planets. In 1562 he was ſent to ſtudy the civil law at Leipzig, in which he made a very conſiderable proficiency; but, notwithſtanding the remonſtrances of his tutor, and the application with which he was required to proſecute the ſtudy of the law, his predominant inclination led him to perfect himſelf in aſtronomy. With this view he expended the money that was allowed him for his private expences, in the purchaſe of books, the difficult paſſages of which were explained to him by his private tutor Scultens; and by means of a ſmall celeſtial globe, and nightly obſervations of the heavens while his preceptor was in bed, he became acquainted, in the courſe of a month, with the names and poſitions of the conſtellations, and the apparent motions of the celeſtial bodies. Inſpired with the ſame ardent zeal in the proſecution of his favourite ſcience, he acquired a competent knowledge of mathematics, without the aſſiſtance of a maſter, and invented ſeveral mathematical inſtruments. Having paſſed three years at Leipzig, it was his intention to have purſued his travels through Germany; but the death of his uncle in 1565, and the eſtate which was bequeathed him, required his return to his native country. Diſcouraged, however, in his favourite purſuits by his relations, he made the neceſſary arrangement of his affairs; and before the expiration of a year, he abandoned his country, and ſet out on his travels. Accordingly he firſt went to Wittenberg, and on occaſion of the plague, which broke out in this town, he removed, in 1567, to Roſtoc, where an accident occurred that endangered his life. At a wedding-feaſt to which he was invited, a diſpute aroſe between him and a Daniſh nobleman, on ſome ſubject of mathematics, which terminated in a duel; and having loſt his noſe in the conflict, he contrived to ſupply the defect ſo completely, by an artificial compoſition of gold, ſilver, and wax, that it could hardly be diſtinguiſhed from the natural organ. From Roſtoc, Tycho continued his travels through the principal towns of Germany and Italy, and in 1569 he repaired to Augſburg, where he formed an acquaintance with the celebrated Peter Ramus, who admired his ſkill in the ſcience of aſtronomy. After his return to Copenhagen, in 1571, he was favoured by his maternal uncle, Steno Billes, with a convenient retreat from the ceremonies of the court, and the intruſive viſits of the capital, at his caſtle of Herritzvold near Knudſtorp; which alſo afforded him a commodious ſituation for the conſtruction of an aſtronomical obſervatory, and a chemical laboratory. During his reſidence with his uncle, Tycho, beſides his aſtronomical reſearches, proſecuted, with his natural ardour, the ſtudy of chemiſtry, or rather of alchemy, to which he ſeems to have had an early inclination, with the chimerical view of obtaining the philoſopher's ſtone, that he might amaſs wealth ſufficient to enable him to ſettle in ſome foreign country. At Herritzvold he obſerved, in 1572, a new ſtar in the conſtellation Caſſiopeia. Soon after this period he incurred the reſentment of his relations by marrying a beautiful country girl, whoſe name was Chriſtina, and who was the daughter of a neighbouring peaſant. Although he offered various reaſons in juſtification of his choice, the connection with a perſon ſo far below his rank alienated his family from him; and they refuſed to hold any intercourſe with him, until Frederic II. interpoſed, and authoritatively effected a reconciliation. Tycho himſelf ſeems not to have repented of his choice; but found in his Chriſtina, to whom affection had attached him, a grateful companion, and an obedient wife. In 1574, he commenced his lectures at Copenhagen, by the expreſs deſire of the king; and in theſe lectures he took occaſion to explain the theory of the planets, introducing his explanation by a learned oration on the hiſtory and excellency of aſtronomy and the ſiſter-ſciences, with ſome remarks in favour of judicial aſtrology, a ſtudy no leſs congenial to the times than to the inclinations of Tycho himſelf. Diſguſted by the conduct of his relations, and with his countrymen in general, our philoſopher determined to quit Denmark and ſettle abroad. After travelling through Germany and Italy, he at length formed a purpoſe of fixing his reſidence at Baſle, to which he was induced by the ſalubrity of the air, the cheapneſs of living, the celebrity of the univerſity, and the opportunity this ſituation would afford him of maintaining a correſpondence with the aſtronomers of France, Germany, and Italy. With this view he returned to Denmark; but whilſt he was preparing for his removal, he received an unexpected meſſage from the king. Frederic, ſecretly appriſed of his intentions, was unwilling that Denmark ſhould be deprived of ſo great an ornament; and in order to retain him in his dominions, offered him protection, and, with a liberality which did honour to the monarch as well as to the philoſopher, preſented him with the iſland of Huen, and promiſed to erect the buildings and to provide the apparatus neceſſary for his ſcientific purſuits. He alſo ſettled on him a penſion of 2000 crowns a year, and gave him a fee in Norway, and a canonry of Roſchild, which produced a thouſand more.

This liberal offer Tycho gratefully accepted; and repairing to Huen, he was preſent, on the 8th of Auguſt, 1576, at the laying of the firſt ſtone of a magnificent houſe, which he afterwards called Uraniburg, or the Caſtle of the Heavens. This was a building 60 feet ſquare, containing a ſpacious ſuit of apartments, an obſervatory, and a ſubterraneous laboratory; for the erection of which the king ſupplied 100,000 rix-dollars (20 000l.), and Tycho himſelf expended no leſs a ſum. He afterwards conſtructed a detached building for his obſervatory, which he called Stiernberg, or the Mountain of the Stars. In this retreat he paſſed 20 years, and, by his obſervations and ſtudy, greatly contributed to the improvement of the ſcience of aſtronomy. He maintained ten or twelve ſcholars, whom he inſtructed in mathematics and aſtronomy, and whom he employed as his aſſiſtants in his obſervations. His retreat was not, however, that of an hermit, who ſecluded himſelf from ſociety; but he lived in a ſumptuous and hoſpitable manner, affording free acceſs and liberal entertainment to all viſitors. Among theſe were perſons of the higheſt rank, ſuch as Ulric, duke of Mecklenburgh, with his daughter Sophia, queen of Denmark; William, landgrave of Heſſe Caſſel; and James VI. king of Scotland, and afterwards James I. of England, on occaſion of his repairing to Copenhagen in 1590 for the purpoſe of concluding his marriage with the princeſs Anne. James remained with Tycho eight days; and, on leaving him, made him a handſome preſent, granted him a royal licence for the publication of his works, accompanied with an honourable teſtimony to his talents and learning, and compoſed ſome Latin verſes in his praiſe, more expreſſive of eſteem and admiration, than remarkable for claſſic elegance. In 1592 Tycho had the honour of a viſit from his own ſovereign, Chriſtian IV., then in the 15th year of his age; who expreſſed great ſatisfaction in examining his aſtronomical and chemical apparatus, and propoſed to him ſeveral queſtions on various points of mathematics and mechanics, and particularly on the principles of fortification, and the conſtruction of ſhips. He was alſo highly delighted with a gilt tin globe, which repreſented the face of the heavens, and being turned on its axis, exhibited the riſing and ſetting of the ſun, together with the motions of the planets and heavenly bodies. The king, upon being preſented with this curious machine, acknowledged the favour by the donation of a gold chain, and by an aſſurance of inviolable protection and encouragement. Notwithſtanding theſe aſſurances, the enemies of Tycho, jealous of his merit, or offended by the violence of his temper, and the ſeverity of his ſatire, contrived, in 1596, under various pretences, to divert the young king's attachment, and to induce him to deprive the aſtronomer of his penſion, his fee, and the canonry of Roſchild. Thus deprived of the means of ſupporting his expenſive eſtabliſhment at Uraniburg, Tycho was reduced to the neceſſity of quitting his favourite reſidence, and repairing to Copenhagen, where for a ſhort time he continued his obſervations. But the malevolence of his enemies purſued him; and therefore, after having tranſported from Uraniburg all thoſe parts of his apparatus which could be removed, he departed from Copenhagen with his wife and family, landed at Roſtoc, and remained a year at Wanſbeck, with his learned friend Henry Rantzau.

About this time he publiſhed his aſtronomical treatiſe, intitled "Aſtronomia inſtaurata mechanica;" and having dedicated it to the emperor Rodolphus II., who had a taſte for mechanics and chemiſtry, he received from him an invitation to ſettle at Prague, whither he removed, towards the cloſe of the year 1598. The emperor granted him a magnificent houſe, aſſigned him a penſion of 3000 crowns, and promiſed him a fee for himſelf and his deſcendants. Here he ſeemed to have obtained a fixed ſettlement for himſelf, and his ſons, and his ſcholars, among whom was the famous Kepler; but he did not long enjoy the advantages of this ſituation. About a year before his death, he felt ſymptoms of declining health, occaſioned, probably, by his intenſe application, and by the chagrin he had ſuffered on his removal from Uraniburg; to theſe he was himſelf conſcious, though he concealed them as much as poſſible from his friends. But the immediate cauſe of his deceaſe was a ſtrangury, brought on by drinking more than he was accuſtomed to do, at the table of a lord named Roſenberg, and by an imprudent retention of urine; and attended with excruciating torments, which occaſioned a violent fever, and a temporary delirium; in the paroxyſms of which he was heard frequently to exclaim, "Ne fruſtra vixiſſe videar;" i. e. that I may not ſeem to have lived in vain. When the fever ſubſided, and he recovered his ſenſes, he was well appriſed of his approaching end. In the proſpect of it he gave neceſſary orders with compoſure and reſignation, amuſed himſelf with compoſing an extempore copy of verſes, ſung various hymns, offered up prayers to the Supreme Being, recommended to his family and friends piety and ſubmiſſion to the divine will; charged his ſons, that none of his works ſhould be loſt; exhorted his pupils to perſevere in their ſtudies, and converſed with Kepler on the abſtruſer parts of aſtronomy, and requeſted him to complete the Rodolphine tables which he had conſtructed for regulating the motions of the planets. Thus employing his laſt moments, he expired ſo quietly, that he was neither heard nor ſeen by any of thoſe who were preſent, to breathe his laſt. He died October the 24th, 1601, in the 55th year of his age; and was very magnificently interred in the principal church at Prague, where a noble monument was erected to his memory. His wife, two ſons, and four daughters, ſurvived him.

Tycho Brahe was a man of moderate ſtature, with light red hair, and a countenance that was rather handſome. As to his mental powers, he combined energy and activity; and thus endowed, he was admirably qualified for arriving at thoſe eminent attainments by which he was diſtinguiſhed. His merit as an aſtronomer is unqueſtionable; for though he rejected the ſimple and beautiful ſyſtem of Copernicus, and endeavoured to reconcile the abſurdities of the Ptolemaic hypotheſis, he formed a ſyſtem conformable to the more obvious phenomena, but which did not require any motion of the planet which we inhabit. To this ſyſtem (for an account of which, ſee SYSTEM) he was ſo zealouſly attached, that, in his laſt moments, he deſired his favourite ſcholar, the great Kepler, to follow his hypotheſis rather than that of Copernicus. For a further account of his diſcoveries, as well as for a conciſe abſtract of his hiſtory, ſee ASTRONOMY. As a poet, Tycho wrote ſome Latin verſes, which are not altogether deſtitute of claſſic elegance. He had alſo a taſte for building; he drew the plan of the caſtle of Cronberg, and ſketched the deſign for the noble mauſoleum of Frederic II., which was executed in Italy, and erected in the caſtle of Roſchild. As a medical practitioner, he was fond of being conſulted, and gave his advice and medicines gratis; he invented an elixir, which he calls an infallible remedy for epidemic diſorders, and of which he publiſhed the recipe in a letter to the emperor Rodolphus. He was likewiſe a good mechanic, and conſtructed ſeveral automata, which he took delight in exhibiting to the peaſants; and in his apartments at Uraniburg he had ſeveral contrivances, which were calculated to deceive and aſtoniſh thoſe who came to viſit and conſult him. He was alſo very much devoted to the ſtudy of chemiſtry; and expended as much on the terreſtrial aſtronomy, as he ſtyled it, as on the celeſtial; but he has left no writings on this ſubject. Indeed, his reſearches in this department of ſcience, like thoſe of his contemporaries, were directed to the viſionary deſiderata. To judicial aſtrology he was addicted to a degree that is truly aſtoniſhing; and he manifeſted a proneneſs to credulity and ſuperſtition, very unſuitable to his learning and judgment. He was an attentive obſerver of good and bad omens; inſomuch, that if he met an old woman on firſt leaving his houſe, or a hare croſſed him upon his journey, he would inſtantly return home. He took pleaſure in being conſulted as a fortune-teller; and pretended, that his knowledge of the heavenly bodies enabled him to obſerve horoſcopes, and to foretel future events. At his houſe at Uraniburg, he kept an inſane perſon, who ſat at his feet during the time of dinner, and whom he fed with his own hand; and he noted down any incoherent expreſſions which were uttered by this perſon, under a perſuaſion, that the mind, in a ſtate of emotion, was capable of predicting future events; and he even believed, that, if any inhabitant of the iſland was taken ill, this idiot could predict his recovery or deceaſe.

As to his natural diſpoſition, it was irritable, impetuous, moroſe, and inflexible; and he indulged a humour for raillery, to a degree that gave offence; but while he rallied others without reſerve, and becoming caution, he was eaſily provoked by the raillery of others. If, however, we divert our attention from the unfavourable to the brighter parts of his character, we ſhall be juſtified in adopting the eulogy of his panegyriſt Joſſenus, in his “Funeral oration;” who obſerves concerning him, that “His ſtudies were life; meditation, delight; ſcience, riches; virtue, nobility; and religion, his conſtant guide.” Gaſſendus, in his “Equitis Dani Tychonis Brahe Aſtronomorum Coryphæi vita,” gives the following liſt of his principal writings:

1. “An account of the new ſtar which appeared Nov. 12th, 1572, in Caſſiopeia,” Copenhagen, 1573, 4to. 2. “An oration concerning the mathematical ſciences, pronounced in the univerſity of Copenhagen, in 1574;” publiſhed by Conrad Aſlac, of Bergen, in Norway. 3. “A treatiſe on the comet of the year 1577, immediately after it diſappeared.” Upon reviſing it nine years afterwards, he added a 10th chapter, printed at Uraniburgh, 1589. 4. “Another treatiſe on the new phænomena of the heavens;” in the firſt part of which he treats of the reſtitution, as he calls it, of the ſun, and of the fixed ſtars; and in the ſecond part, of a new ſtar which had then made its appearance. 5. “A collection of aſtronomical epiſtles,” 4to. Uraniburgh, 1596; Nuremberg, 1602, and Francfort, 1610. It was dedicated to Maurice, landgrave of Heſſe; becauſe it contains a conſiderable number of letters of the landgrave William, his father, and of Chriſtopher Rothmann, the mathematician of that prince, to Tycho, and of Tycho to them. 6. “The mechanical principles of aſtronomy reſtored,” Wandeſburg, 1598, folio. 7. “An anſwer to the letter of a certain Scotchman concerning the comet in the year 1577.” 8. “On the compoſition of an elixir for the plague; addreſſed to the emperor Rodolphus.” 9. “An elegy upon his exile;” Roſtock, 1614, 4to. 10. “The Rodolphine tables,” reviſed and publiſhed by Kepler, according to Tycho's deſire. 11. “An accurate enumeration of the fixed ſtars, addreſſed to the emperor Rodolphus.” 12. “A complete catalogue of 1000 of the fixed ſtars, which Kepler has inſerted in the Rodolphine tables.” 13. “Hiſtoria cæleſtis; or, a hiſtory of the heavens, in two parts;” the firſt containing the obſervations he had made at Uraniburgh, in 16 books; the latter containing the obſervations made at Wandeſburg, Wittenberg, Prague, &c. in 4 books. 14. “An epiſtle to Caſter Pucer,” printed at Copenhagen. 1668.

The apparatus of Tycho Brahe, after having been tranſported from place to place, during his life, was, after his death, purchaſed of his heirs by the emperor Rodolphus for 22,000 crowns of gold. The perſons to whoſe cuſtody he committed them, concealed them from inſpection; and thus they remained uſeleſs till the time of the troubles of Bohemia, when the army of the elector palatine plundered them, breaking ſome of them, and applying others to different uſes. The great celeſtial globe of braſs was preſerved; carried from Prague, and depoſited with the Jeſuits of Neyſſa in Sileſia, whence it was afterwards taken, about the year 1633, by Udalric, ſon of Chriſtian, king of Denmark, and placed in the hall of the royal academy at Copenhagen. Gaſſendi, ubi ſupra. Moreri. Coxe's Travels in Denmark, &c. vol. v. p. 191, &c. 8vo. Gen. Dict.

BRAHELINNA, in *Geography*, a town and royal demeſne of Sweden, in the province of Savolax.

BRAHESTAD, a town of Sweden, in the province of Eaſt Bothnia, built by count Peter Brahe in 1652, and inveſted with the privileges of a town. It has a commodious harbour.

BRAHILOW, or BRAILA, a town of Walachia ſeated on the Danube, near the confines of Moldavia, oppoſite to Siliſtria. N. lat. 45°. E. long. 27°. 14′.

BRAHIN, a town of Lithuania, in the palatinate of Minſk; 48 miles E. of Mozyr.

BRAILLER, *Fr*, to ſcream and roar in ſinging vulgarly, like country pſalmodiſts and pariſh clerks.

BRAILS, in *Sea Language*, a general name given to all ropes which are employed to *haul up*, or collect to their yards, the bottoms, lower corners, and ſkirts of the great ſails, for the more ready furling them whenever it becomes neceſſary. In particular, it is applied to ropes, faſtened at different places on the aftmoſt ridge of the mizen, and paſſing through blocks on the mizen maſt, for the purpoſe of bringing or brailing up the ſail to the maſt; boats with either gaff or ſprit-ſails have generally brails attached to theſe ſails. The operation of thus drawing them together, is called *brailing them up*, or *hauling them up in the brails*.

BRAIN, in *Anatomy*. The brain is a ſoft and ſomewhat white ſubſtance, ſituated in the cavity of the ſkull, and correſponding in form to that cavity. Its parts are ſupported by a firm membrane, called the dura mater, and its ſubſtance is immediately inveſted by a more delicate membrane, named the pia mater. The Greeks termed theſe membranes ſimply meninges, whilſt the Latin writers gave them the name of matres, from the ſuppoſition, that they were the origins of the other membranes of the body. We ſhall firſt deſcribe the diſſection of the brain; which will comprehend an account of its membranes, of its general diviſions, and of the appearances found in the interior of the organ.

It may not be improper to premiſe a few general obſervations. The ſtructure of the brain is remarkably conſtant and uniform, very ſeldom deviating from the accuſtomed ſtandard. Varieties in formation occur not unfrequently in moſt other parts of the body; but the parts of the brain preſerve an almoſt invariable relation of form, poſition, magnitude, and connection, which ſeems to prove, that the right performance of the functions of this organ requires an exactneſs in the ſtructure of individual parts. The brain is ſymmetrical; all its parts are double; even thoſe which being ſituated in the middle, appear on ſuperficial examination to be ſingle, will be found, by more attentive inveſtigation, to conſiſt of two ſymmetrical portions, e. g. the corpus callorum ſeptum lucidum and medulla ſpinalis. The weight of the brain, according to Soemmerring, varies from 2℔ 5½ oz. to 3℔ 3¾ oz. (De corpus humani fabrica, tom. iv. § 23.) Out of two hundred brains which he has examined, none weighed four pounds, whereas Haller ſtates its weight generally at five pounds. This error muſt of courſe affect the account, which that author gives, of the proportion between the weight of the brain, and that of the body. The weight of the brain, compared with that of the body, is in an inverſe ratio to the age of the ſubject. It is ſoft and almoſt fluid in young ſubjects, becomes of a more ſolid conſiſtence with increaſing age, and is firmeſt in old perſons.

Diſſection of the brain. An inciſion ſhould be made from ear to ear through the ſcalp, which is to be reflected from the cranium forwards and backwards. The cranium is next to be ſawn through in a circular manner, as low down as convenient.

In lifting off the top of the ſkull, it is torn from the dura mater, which is cloſely connected to it by veſſels and cellular ſubſtance. The dura mater may be, therefore, regarded as the perioſteum of the internal table of the ſkull, as well as the membrane which inveſts and ſupports the brain. The ſurface of the membrane is covered with bloody points, which are the orifices of the torn veſſels that connected the dura mater to the inner table of the bone. Theſe are more numerous in the courſe of the ſutures than elſewhere, but abundant in every part. This is manifeſt from the pores obſervable in the internal table of the ſkull; and there can be no doubt but that more blood is ſent into the bone for its nutrition, from the dura mater, than from the pericranium.

The dura mater, which is a very ſtrong, denſe, and inelaſtic membrane, conſiſts of two layers, intimately connected in general, but ſeparated from each other at particular parts, ſo as to leave vacancies between them called ſinuſes, into which the veins of the brain pour their blood. (For an account of the ſinuſes, ſee Veins, *diſtribution of.*) Its ſtructure is obviouſly fibrous; the fibres not following any regular diſtribution, but interſecting each other in every direction. After being macerated for ſome time in water, it is reſolved into a firm tendinous kind of cellular texture. The ſides of the membrane are covered by the ramifications of the arteria meningea media, which are very conſpicuous on the mere removal of the ſkull cap, each branch being accompanied by two veins. (For the deſcription of this artery, ſee Arteries, *diſtribution of.*) In the middle of the ſuperior ſurface of the membrane is a depreſſion, extending from the lower part of the os frontis to the tentorium, which denotes the ſituation of the ſuperior longitudinal ſinus.

We alſo obſerve, on the upper part of the dura mater, cluſters of little white granular bodies, termed glandulæ Pacchioni. Theſe vary in number and ſituation; ſometimes they riſe in little heaps on the ſide of the longitudinal ſinus, and are lodged in conſiderable cavities formed in the bone for their reception. In other inſtances the cluſters of theſe glands are ſo ſmall and few in number, that they may eſcape obſervation. In diſſecting the brain, we are in the next place to cut the dura mater round on a level with the bone which we have ſawn, except in front and behind, where the falx is ſituated. We are then enabled to reflect it on either ſide from thoſe membranes which immediately inveſt the brain. Its inner ſurface is ſmooth and ſhining, and has no connection with the pia mater, except at the upper part, near to the longitudinal ſinus. The connection at this part is of two kinds; one by means of large veins, which, coming from the ſurface of the brain, paſs between the layers of the dura mater to terminate in the longitudinal ſinus: the other by means of cluſters of glandulæ Pacchioni, which adhere equally to the under layer of the dura mater, and ſurface of the membranes, which more immediately inveſt the brain. Theſe glands are found not only in the outer and inner layers of the dura mater, but frequently they communicate and make one cluſter through an opening in the membrane. They are alſo found attached to the inner ſurface of the longitudinal ſinus. The uſe of theſe glands, as they are called, is not known.

The internal layer of the dura mater forms, by its ſeceſſion from the outer, proceſſes for the ſupport of the brain: the principal of theſe are, one which deſcends perpendicularly between the hemiſpheres of the cerebrum, and is called the falx cerebri, from the ſhape of its lower edge; and one which proceeds tranſverſely, ſupporting the back lobes of the cerebrum, and ſeparating them from the cerebellum. As this is ſtretched acroſs over the cerebellum, it is called the tentorium cerebelli. The falx is a duplicature of the internal layer of the dura mater, which begins to recede from the external at the æthmoid bone, and incloſes the criſta galli of that bone. It proceeds in like manner from the ſpine, and from the middle of the os frontis, from the ſagittal ſuture of the parietal bones, and from the upper half of the perpendicular ridge of the occipital bone, and it terminates behind in the tentorium, gradually increaſing in breadth to its termination.

The arteria meningea media is the principal ſource of the arterial ſupply of the dura mater: it receives ſome ſmall branches in front from the internal carotid, ophthalmic, and pharyngeal arteries: behind from the occipital and vertebral veſſels. Its veins open into the neareſt ſinuſes. The accurate reſearches of Lobſtein and Wriſberg have ſhewn that no nerves can be traced to this membrane. (See Comment Gottingens: an. 1777. Ludwig collect. ſcriptor. neurol. minor. tom. 1.)

After the connection of the dura mater with the ſubjacent membranes is broken, the front of the falx is to be divided from the criſta galli, and that proceſs is to be turned back from between the hemiſpheres of the brain. Then the brain and its immediate inveſting membranes become fairly expoſed to our examination. Theſe membranes were conſidered as one, and called the pia mater, till Ruyſch demonſtrated that they were two. The outer one is uniformly ſpread over the viſible ſurface of the brain, is of a pale white colour, yet in ſome degree tranſparent, very thin, devoid of evident veſſels, and is named the tunica arachnoidea. It is ſeen moſt diſtinctly where it paſſes between the two lobes of the cerebellum: in moſt other parts of the brain it adheres very firmly to the pia mater. Although the tunica arachnoidea has in its natural ſtate no viſible veſſels, yet, when it is inflamed, its veſſels become enlarged and evident, and there can be no doubt but that it contributes at all times to ſecrete its ſhare of that liquor which preſerves it ſeparate from the dura mater. In inflammation of the pia mater and tunica arachnoidea, it is common to have a turbid and ſometimes puriform fluid effuſed between it and the dura mater, which is doubtleſs ſecreted by the inflamed membrane.

The membrane which lies beneath the tunica arachnoidea is called the pia mater; it covers the whole ſurface of the brain, ſending down proceſſes between all its convolutions. It is extremely vaſcular, and a great portion of the blood, which the brain receives, is ſpread out upon its ſurface in minute veſſels: from theſe others proceed capable of admitting very ſubtle injections. From the great number of veſſels, which ramify on this membrane, Soemmerring calls this membrane, membrana vaſculoſa cerebri. Its veſſels are fewer and ſmaller where it covers medullary parts, than where it is in contact with the cortex. The proceſſes which paſs from its inſide no where touch medullary matter. The outer ſurface is tolerably ſmooth; the inner univerſally villous, from the torn orifices of innumerable veſſels which entered the ſubſtance of the brain.

The membranes of the brain having been examined, may be removed; and then the ſurface of the cerebrum is brought into view, which appears convoluted, ſo as to reſemble the windings of the ſmall inteſtines. Theſe convolutions do not in general penetrate more than one inch, or one inch and a half, into the ſubſtance of the cerebrum. A very deep fiſſure is however obſerved extending itſelf obliquely upwards, and backwards, from the alæ of the ſphenoid bone; and this is called the fiſſura magna Sylvii.

The encephalon or brain is divided into the cerebrum, cerebellum, and medulla oblongata.

The cerebrum is the uppermoſt portion, and by much the largeſt, and that which firſt claims our attention in diſſection. It reſts upon the tentorium and petrous portions of the temporal bones behind, and upon the ſphenoid alæ, and the orbitary proceſſes of the frontal bones in front. Its ſuperior ſurface preſents a regularly convex oval, narrower in front than behind. This oval is divided into two equal parts named hemiſpheres, by a deep longitudinal fiſſure, into which the falx cerebri deſcends. The depth of this cleft being greater than the breadth of the falx, the oppoſed plane ſurfaces of the hemiſpheres are looſely united below the inferior edge of the falx, by veſſels and cellular ſubſtance.

ſtance. The hemiſpheres are conjoined below, and the part which unites them can be perceived at a conſiderable depth from the ſurface, by diſtracting the hemiſpheres from each other. It is about three inches in length, and is called the corpus calloſum. (In a ſingular inſtance, which occurred to Mr. Carliſle, the falx was deficient, and there was no diviſion into hemiſpheres. See Tranſactions of a Society for the improvement of medical and chirurgical knowledge, vol. i. p. 212.) Each hemiſphere is divided into two lobes. This ſubdiviſion is the conſequence of the projection of the tranſverſe ſpinous proceſs of the ſphenoid bone, which divides the bottom of it into two ſurfaces; and it is from this diviſion that the fiſſura Sylvii commences. All that part of the hemiſphere which is in front of the fiſſura Sylvii, and which reſts on the orbit, is called the anterior lobe; and all that which is ſupported by the ſphenoid alæ, by the petrous part of the temporal bone, and tentorium, is called the poſterior lobe. Such is Haller's diviſion of the cerebrum, which has been generally adopted by anatomiſts. Some authors, however, divide the poſterior or great lobe into two parts; calling that portion of it, which reſts in the middle foſſa of the baſis cranii, the middle lobe of the brain; and that which is ſupported by the tentorium, the poſterior lobe.

As there are no diſtinguiſhable parts in the upper portions of the hemiſpheres of the cerebrum, ſo in diſſection it is cuſtomary to pare all theſe away, nearly to the level of the corpus calloſum, in order that we may be able more eaſily to open, and more particularly to examine, certain cavities which are ſituated on either ſide of that body, and which are called the lateral ventricles. On making a ſection of the brain we perceive that it is compoſed of two ſubſtances, an exterior one which is of a grey colour, and an interior one which is white. Theſe are termed ſimply the cineritious and white ſubſtances, or ſubſtantia cinerea and alba; or, from the former ſurrounding the latter, as the bark does the wood of a tree, they are named in contra-diſtinction, the cortical and medullary ſubſtances of the brain. The cortical part receives ſo great a ſupply of blood, that after a ſucceſsful injection it appears almoſt compoſed of veſſels; the medullary ſubſtance on the contrary has very few veſſels. In the crura cerebri is a ſmall portiou of a black ſubſtance, named by Soemmerring locus niger; and in ſome places, a fourth ſubſtance, partaking of the appearances of the cortical and medullary matter, is deſcribed, as in the under ſurface of the poſterior lobe, and is named by Soemmerring portio intermedia.

When the ſubſtance of the two hemiſpheres has been removed by repeated horizontal ſections, as low as the ſurface of the corpus calloſum, we ſee the greateſt extent of medullary matter, that can be demonſtrated in the brain. The medulla of the two hemiſpheres is united by the corpus calloſum. The margin alone is grey; all the reſt is white. This appearance is the centrum ovale of Vieuſſens; the maximus medullæ orbis of Soemmerring: a more complete view of the corpus calloſum is now obtained. This part is overlapped by the edges of the two hemiſpheres, in ſuch a manner that it is completely hidden, until the hemiſpheres are either held aſunder, or removed by diſſection. Its length is equal to that of one half of the hemiſphere, and it is placed in ſuch a ſituation, that a ſpace equal to one third of its own length is left, between its anterior extremity and the front of the cranium, and another twice as long between its poſterior part and the back of the ſkull. The breadth of this part is about ¾ of an inch, but leſs in front. Its upper ſurface is convex. It turns downwards in front and behind, ſo as to form two rounded extremities, which are the bourrelets anterieur and poſterieur of Vicq d'Azyr. Two prominent lines run through the whole length of the corpus calloſum, with a depreſſion between them, which is called the raphe. Tranſverſe lines proceed from theſe on both ſides at right angles.

The two lateral ventricles (ventriculi tricornes of Vicq d'Azyr) are ſituated in the ſubſtance of the brain, by the ſide of the corpus calloſum, (one in either hemiſphere,) and ſhould be opened by an inciſion along the margin of that body. The roof of the ventricle being diſſected off, its courſe becomes apparent. The cavity begins in the front lobe of the brain, as far forwards as the commencement of the corpus calloſum. This portion of the ventricles, which is formed between the front of the corpus ſtriatum and the medullary matter of the front lobe, turns rather outwards, and is diſtinguiſhed by the name of cornu anterius. The ventricle then runs from before backwards, in a direction parallel to that of the corpus calloſum, and diverging from the oppoſite one. Afterwards it bends downwards, ſomething like the turning of a ram's horn, and returns obliquely from behind forwards, to terminate almoſt under its ſuperior extremity, being ſituated however behind that, and more externally. This is the cornu inferius, or deſcendens, or reflected horn of the ventricle. At the place where the ventricle bends in order to run downwards, there is a particular elongation paſſing into the poſterior lobe, forming a triangular pointed cavity, terminating in a cul de ſac, with its point turned inwards. This is the digital cavity or cornu poſterius of the lateral ventricle. Its length and ſize vary conſiderably in different ſubjects and often are very diſſimilar in the right and left ſides of the ſame brain. It ſometimes extends quite to the poſterior part of the back lobe, and at others is barely demonſtrable. This part of the ventricle is peculiar to the human ſubject and ſimiæ. Theſe ventricles, and ſome other cavities, which will be preſently deſcribed, are lined with a ſmooth membrane, and contain a ſmall quantity of a watery fluid, which ſerves to preſerve the parietes of the ventricle ſeparate and diſtinct from each other, and to fill up the ſpaces which are left between the convexities which conſtitute the ſides of the cavity. The diſeaſe of hydrocephalus is a morbid increaſe of quantity in this fluid, which accumulates ſometimes to the amount of ſome pounds, diſtending and dilating the ventricles enormouſly. The learned Soemmerring, who may juſtly be eſteemed the firſt of modern anatomiſts, places the ſenſorium commune in this fluid. He has traced all the nerves of the brain to the ſides of the ventricles; and concludes, that impreſſions made on theſe nerves will be tranſmitted to the water of the ventricles, which he conſiders as the organ of the ſoul. (See his diſſertation ueber das organ der ſeele, Berolini, 1796, 4to.)

The two lateral ventricles are ſeparated by a perpendicular partition, which deſcends from the inferior ſurface of the corpus calloſum to the fornix. This ſeptum, which is broad in front, grows gradually narrower behind, and, at the poſterior part of the ventricles, does not exiſt at all; the corpus calloſum and fornix being there continuous. It is compoſed of two thin layers, ſeparated above and uniting below at an acute angle, ſo as to leave between them a triangular cavity, called the fifth ventricle of the brain, or ventricle of the ſeptum lucidum. The corpus calloſum may be cut off from the ſeptum lucidum, ſo as to ſhew the two layers and intervening ventricle.

The fornix is compoſed of two crura, which ariſe in front of the brain, from the corpora ſubrotunda. Theſe, which are round in ſhape, converge, and unite to form the fornix, which lies between the two corpora ſtriata, and on the upper ſurface of the thalami nervorum opticorum. It ſeparates behind into two poſterior crura, which are thin, broad, and flat, and paſs into the reflected horns of the ventricles, where they run along the front of the hippocampus major, and ſoon terminate. Their poſterior margin is connected to the hippocampus; the anterior is looſe and floating, and forms the bandelette de l'hippocampe of Vicq d'Azyr. The triangular ſpace left between the poſterior crura fornicis, where they diverge to enter the reflected horns of the ventricles, is filled up by medullary matter marked on its under ſurface by ſeveral oblique lines; it is called trigonum pſalterium, or corpus pſaltoides. It may be regarded as the under ſurface of the corpus calloſum. The origin of the fornix in the front of the brain is ſituated at ſome diſtance from the corpus calloſum; it riſes gradually in an arched manner, until it reaches the under ſurface of the corpus calloſum, before its ſeparation into the poſterior crura. On this circumſtance depends the different breadth of the ſeptum lucidum in the front and back part of the ventricles. Under the anterior part of the fornix is a ſmall ſlit-like opening, by which the two lateral ventricles communicate. This aperture is juſt in front of the thalami nervorum opticorum, and preciſely over the foramen commune anterius. It becomes conſiderably enlarged, in caſes of great accumulation of fluid in the ventricles. The communication between theſe cavities would be much more extenſive, did not the fornix behind this aperture adhere to the choroid plexus and velum, which intervene between its under ſurface and the optic thalami. The thin edge of the fornix, and of its poſterior crus, receives veſſels from this vaſcular membrane. The fornix ſhould now be cut through oppoſite to the communication juſt deſcribed. By turning up the anterior part of this body, its origination by two diſtinct crura becomes clearly ſeen, which would not be ſatisfactorily made out on the upper ſurface. By reflecting the poſterior part, the pſalterium, the ſeparation of the poſterior crura, their courſe, flat ſhape, extenuated margin, and pointed termination on the hippocampus, will be clearly expoſed.

In this ſtage of the diſſection, the ſituation and connections of the choroid plexus may be traced. This is a production of the pia mater, containing a vaſt number of tortuous, arterial, and venous ramifications, entering the reflected horn of the ventricle, and aſcending into the ſuperior part of the cavity. It is broader and larger below, diminiſhes in ſize, as it proceeds along the upper part of the ventricle, and terminates juſt at the opening of communication between the two lateral ventricles, by joining the oppoſite plexus. The right and left plexuſes are joined together by a middle expanſion under the fornix, which is the velum, ſive plexus choroideis interpoſitus of Haller, or the rete, or tela choroides of Vicq d'Azyr, who has illuſtrated theſe parts by the moſt beautiful coloured plates which have ever been publiſhed on any anatomical ſubject. (See particularly *Tab.* 7. alſo *Tab.* 5 and 8.) The two plexuſes, with the intervening velum, cover the hippocampi majores, the pineal gland, and upper ſurface of the optic thalami. They ſupport the fornix and pſalterium, intervening between them and the optic thalami, and giving blood-veſſels to all the parts juſt enumerated. When ſucceſsfully injected, theſe plexuſes reſemble a mere net-work of blood-veſſels. They contain numerous little glandular bodies, which are often enlarged, ſo as to reſemble hydatids. The veins of the choroid plexus form a large trunk ſituated in the middle of the velum, and named the vena magna Galeni. This, paſſing in the angle of connection of the falx and tentorium, conſtitutes the torcular Herophili. The choroid plexuſes and velum ſhould now be reflected, to expoſe clearly the eminences which form the ſides of the lateral ventricles. We now ſee, in the middle of the under ſurface of the velum, a ſmall and narrow portion of plexus, which was firſt deſcribed and repreſented by Vicq d'Azyr under the name of plexus de la glande pineale ou du troiſieme ventricule. (*Tab.* 7. *fig.* 4. p. 21.) The anterior and ſuperior eminence in each lateral ventricle is oblong, ſmooth and grey on its ſurface, but compoſed internally of a ſtriated mixture of cortical and medullary ſubſtance, whence it derives the name of corpus ſtriatum. The more deeply we cut into this body, the more complicated does its ſtriated texture appear. The corpora ſtriata are large, convex, and near to each other in front; they diminiſh in ſize, and diverge behind, being ſeparated by the optic thalami, and preſenting on the whole a pyriform appearance. The poſterior eminence of the lateral ventricle is called the thalamus, or colliculus nervi optici. It is found behind, within, and rather below the former. Its ſurface is white, but the interior of the body is formed of a ſtriated intermixture of cortical and medullary matter; in ſhape, it is nearly hemiſpherical, except that it is ſurmounted above by a more or leſs prominent oval tubercle, which extends from before backwards. The convexities of the optic thalami are turned towards each other, and are connected by a cineritious union, which is called the middle commiſſure of the brain, or ſoft commiſſure of the optic thalami. This union, which is naturally of a ſoft and delicate nature, is torn by the mere weight of the parts, when the brain has been kept a few days before it is uſed for diſſection. Hence ſome anatomiſts have denied its exiſtence altogether. This is the opinion of Sabatier, derived, as he ſays, from the moſt exact obſervation and very numerous diſſections. (Traité d'Anatomie, tom. ii. p. 32.) The careful examination of a recent brain will ſhew the error of this celebrated anatomiſt; and if authority be required on a point which can be made the ſubject of demonſtration, it will be ſufficient to cite the names of Vieuſſens, Winſlow, Morgagni, Soemmerring, and Vicq d'Azyr. Theſe bodies ſeparate from each other below, and form a cavity, which is the third ventricle of the brain. The thalamus nervi optici is ſeparated from the corpus ſtriatum, by a whitiſh, fibrous, and flat cord, which is broader in front than behind. This ariſes from the front of the third ventricle, and following the poſterior margin of the corpus ſtriatum, was named by Willis limbus poſterior corporis ſtriati. It deſcends into the inferior horn of the ventricle, and terminates on the upper ſurface of that cavity. This part is the centrum geminum ſemicirculare of Vieuſſens, the tænia ſemicircularis of Haller, bandelette ſtriée of Vicq d'Azyr, and ſtria cornea of Soemmerring. The poſterior and reflected horns of the ventricle contain certain eminences, which are named hippocampi. The poſterior margin of the corpus calloſum mixes on either ſide with the medullary matter of the brain, and produces in the digital cavity one or more ſmall projections, correſponding in direction to the courſe of the cavity, and named colliculus, or unguis caveæ poſterioris ventriculi lateralis (l'ergot, or hippocampus minor of Vicq d'Azyr.)

In the deſcending horn a very large and conſpicuous medullary body is ſeen, extending to the termination of the ventricle, where it forms a bulbous extremity divided by three or four fiſſures, in ſuch a manner as to bear an obſcure reſemblance to the foot of an animal. The eminence is named hippocampus major, or cornu Ammonis (proceſſus cerebri lateralis Soemmerring de corporis humani fab. tom. iv. § 36.), and its termination pes hippocampi.

It is neceſſary to remark in this place, that the hippocampi are continuations of the medullary matter, which forms the corpus calloſum; and that the corpus calloſum itſelf, the ſeptum lucidum, fornix, and pſalterium, are parts of one continuous medullary body. To underſtand clearly the relative poſition and connections of theſe parts, it is abſolutely neceſſary to reſort to the proper ſource of all anatomical deſcription, diſſection of the parts, which will ſhew how inadequate a notion of theſe circumſtances is obtained from the beſt deſcription.

An oval opening is ſeen between the optic thalami in front, named the foramen commune anterius, which leads into the third ventricle. As it is ſituated under that part of the fornix, which is not adherent below, it opens by means of the ſlit above mentioned, as forming the communication between the two lateral ventricles, into each of theſe cavities. Hence they communicate with the third by means of this aperture. The foramen commune poſterius, which opens alſo into the third ventricle, is a triangular ſpace left between the optic thalami at the poſterior part, and only expoſed when the choroid plexus and velum have been reflected.

On drawing aſunder the thalami, and ſeparating their ſoft commiſſure, we expoſe a conſiderable oblong cavity, which is named the third ventricle. In front of this a round medullary cord appears juſt under the anterior crura of the fornix, which paſſes tranſverſely between the two hemiſpheres, and is continued in a diſtinct form, for the ſpace of an inch, into the ſubſtance of the brain on each ſide, as will be beſt ſeen by a tranſverſe ſection. A ſimilar body is ſeen at the back part of the ventricle, which is not however produced into the hemiſpheres like the anterior one; theſe are the anterior and poſterior commiſſures of the brain. There is a round aperture under the anterior commiſſure, beyond which the ventricle terminates by a pointed and conical extremity, from which a ſmall and ſhort cylindrical proceſs is continued to the pituitary gland, under the name of the infundibulum. It is a matter of diſpute among anatomiſts, whether or not this proceſs be hollow. The foramen commune anterius leads through the third ventricle into this opening. Juſt before the poſterior commiſſure a round opening is found leading through a ſhort canal, in front of the tubercula quadrigemina, into the fourth ventricle. The canal of communication is named canalis medius, iter ad quartum ventriculum, or aquæductus Sylvii.

The pineal gland, or conarium, is found at the back of the optic thalami. Its ſize is about that of a ſmall horſe-bean; its colour a reddiſh grey; its ſhape moſt frequently conical. Two ſmall medullary cords connect it to the poſterior commiſſure and to the optic thalami; they are inſerted in the convex part of the thalamus, and form a diſtinguiſhable prominent line, extending quite to the front of that body, as is very beautifully repreſented in the 8th plate of Vicq d'Azyr. This gland is covered by the velum, and has immediately over it the two ſmall plexuſes, which have been already deſcribed under the name of plexus de la glande pineale. In the ſubſtance of the pineal gland, or in the medullary matter, which connects it to the optic thalami, there is found a ſmall quantity of a gritty matter nearly reſembling ſand. It conſiſts of a number of little ſemi-tranſparent and light yellow grains. Soemmerring, who firſt diſcovered that this was a part of the healthy ſtructure of the brain, calls it the acervulus of the pineal gland. (Diſſertatio de lapillis intra vel prope glandulam pinealem ſitis, in Ludwig. collect. ſcriptor. neurol. minor. tom. iii.)

The pineal gland reſts on a ſquare portion of the brain, which is ſeen behind and below the optic thalami, and below the level of the tentorium. The ſurface of this is divided into four projections or tubercles, and hence it has acquired the name of corpora quadrigemina. Of theſe bodies the two ſuperior are larger and more plane; the inferior more convex. From the lower bodies a medullary production extends to the upper part of the crura cerebelli. Vieuſſens deſcribed this part by the name of the valvula magna cerebri, ſuppoſing it to perform the office of a valve to the fourth ventricle. Vicq d'Azyr, whoſe incomparable plates throw new light on this as well as on every other part of the ſubject, calls it the "lame medullaire du cervelet." The lateral portions of this production conſtitute pretty ſtrong medullary bodies, which are the "proceſſus a cerebello ad teſtes" of Haller, "les pedoncales ou colonnes de la lame medullaire" of Vicq d'Azyr. The interval between theſe is filled by a very thin medullary plate, the velum interjectum of Haller, which is the part commonly known as the valve of the brain. This valve forms the roof of the fourth ventricle; therefore, if air be impelled into that cavity from the canalis medius, the valvula cerebri is elevated, and we can perceive the fourth pair of nerves ariſing from it; the origin of this nerve evidently projecting from the ſurface of the valve.

On lifting up the poſterior lobes of the cerebrum, a tranſverſe production of the dura mater, called the tentorium, comes into view. This is attached to the internal tranſverſe ridge of the occiput, and poſterior angle of the parietal bones behind, and to the ſharp margin of the petrous portion of the temporal bone in front. as far forwards as its connection to the body of the ſphenoid bone, where it terminates in a pointed form. This proceſs therefore ſeparates the cavity, which holds the cerebellum, from that part of the cranium which contains the cerebrum. The vacancy left in its anterior part, oppoſite to the baſilary proceſs of the occiput, tranſmits the commencement of the medulla oblongata. The middle of the tentorium, which has the termination of the falx fixed to it, is elevated; the lateral portions of the proceſs are rather ſloping.

The tentorium ſhould be divided on either ſide, in order to expoſe the cerebellum, which then appears lying in the poſterior foſſæ of the occiput. This is divided into a right and left lobe by the falx cerebelli, which is a ſmall proceſs of dura mater, attached to the lower part of the perpendicular ridge of the occiput.

The reſt of the encephalon ſhould now be removed from the cranium, that the fourth ventricle and baſis of the brain may be conſidered. In doing this, we lift up the anterior lobes, and detach the different nerves as they go out of the cranium, cutting them near to the brain on one ſide, and near to the apertures by which they quit the ſkull on the other. The pituitary gland is to be ſcooped out of the ſella turcica, and the medulla ſpinalis to be cut acroſs as low down as poſſible.

The part which has been taken out ſhould be laid on a plate, in the ſame ſituation which it held in the cranium, that the fourth ventricle may be demonſtrated. This cavity is formed between the upper and poſterior part of the medulla oblongata, and the middle anterior part of the cerebellum. It extends laterally to a conſiderable diſtance in the crura cerebelli; a groove runs along the middle of the medulla oblongata, which conſtitutes the front of the ventricle, and terminates in the end of the cavity in a point. From the lateral productions, and the pointed termination of the cavity, it has been named the calamus ſcriptorius. Its ſhape indeed bears conſiderable reſemblance to a pen, except that it is much larger. To deſcribe its boundaries more accurately, we may ſtate, that it has four ſides or parietes. The ſuperior is formed by the valvula cerebri, the lower and anterior by the back of the medulla oblongata, the two lateral by the crura cerebelli, and in part by the thick portions of the valve, which unite the crura cerebelli to the corpora quadrigemina. It opens above into the third ventricle, by means of the canalis medius; its termination would open below towards the back of the medulla ſpinalis, were it not cloſed by pia mater. The brain may now be turned over to expoſe the baſis. The lower and anterior part of the third ventricle is cloſed by a cineritious ſubſtance of a conical form, which extends from the anterior commiſſure and crura cerebri to the junction of the optic nerves, where its apex is continued, under the name of infundibulum, to the pituitary gland. This body is lodged in the ſella turcica, the upper aperture of which is contracted by a fold of the dura mater. Its ſuperior ſurface is plane; its inferior convex. Its ſubſtance is harder than that of the brain. Immediately behind the infundibulum are ſeen two ſmall convex medullary eminences, named the corpora ſubrotunda, candicantia, or mamillaria, from which the anterior crura fornicis and the pedunculi of the pineal gland commence. The crura cerebri (proceſſus medullæ cerebri of Soemmerring) are two large medullary proceſſes, having a fibrous appearance externally, which come from the middle and convex part of the hemiſpheres. They are ſeparated above and in front, approach below and behind, and meet together juſt before they terminate in the medulla oblongata. There is ſeen therefore a depreſſion, or hollow, between theſe crura in front, from which the third pair of nerves ariſes, and which is called by Vicq d'Azyr la foſſe des nerfs oculo-muſculaires.

The cerebellum is lodged in the poſterior and inferior foſſa of the baſis cranii; it is ſituated therefore under the cerebrum, in a peculiar cavity, formed chiefly by the occipital bone, the poſterior ſurface of the petrous part of the temporal bone, and the tentorium. Its upper ſurface is nearly flat; the under and poſterior are convex. It forms in front ſome prominences named appendices vermiformes. It is divided into a right and left lobe, by a fiſſure which does not extend very deeply, and which lodges the falx cerebelli. The cerebellum conſiſts, like the cerebrum, of an intermixture of cortical and medullary matter; but they have not the ſame relative arrangement as in the cerebrum. The ſurface of the cerebellum is marked by ſeveral horizontal lines, not diſpoſed concentrically, into which the pia mater deſcends to a conſiderable depth, and from which other diviſions containing alſo proceſſes of pia mater commence. The cerebellum has, therefore, a much more extenſive ſurface than an equal bulk of cerebrum; and the cortical matter is more abundant than the medullary. On a vertical ſection we ſee a thick cord of medullary matter ſending off proceſſes, from which other branches proceed, and all of which are ſurrounded by cortex; this is the arbor vitæ. An horizontal ſection diſcovers ſeveral parallel curved portions of cortex and medulla ſucceeding each other alternately. The trunk of the arbor vitæ conſtitutes the crus cerebelli on each ſide, which joins the medulla oblongata.

The medulla oblongata is a large protuberance occupying the lower and middle part of the cranium, and reſting on the baſilar proceſs of the occiput. It is formed by the crura cerebelli and cerebri, which have been already deſcribed. Its ſurface has an irregular and fibrous appearance. It is divided into a right and left portion by a groove, which contains the baſilar artery. This body is named the pons Varolii, tuberculum annulare, or nodus cerebri. A medullary cord paſſes from its poſterior part to go through the foramen magnum occipitale, and enter the ſpinal canal under the name of medulla ſpinalis. It is ſeparated from the pons Varolii by a circular contraction. The upper part of this medullary cord forms a bulb or dilated part, which is divided into four convexities, of which the two ſuperior are named corpora olivaria, the two inferior corpora pyramidalia. For the moſt ample and ſatisfactory information on the anatomy of the brain, we refer the reader to the Encefalotomia Nuova univerſale di Vincenzo Mala carne, Torino, 1780; the Traité d'Anatomie of Sabatier, vol. ii.; the fourth volume of Soemmerring's work "De corporis humani fabricâ; and his diſſertation "Ueber das organ der Seele." Above all, however, the "Traité d'Anatomie, et de phyſioligie, avec des planches colories," Paris, 1786, folio, of Vicq d'Azyr, requires the greateſt commendation. In this ſuperb work all the parts of the brain are repreſented of their natural colour, with ſuch fidelity and beauty, as render it, beyond diſpute, the grandeſt book which has ever been publiſhed in illuſtration of the human frame.

We ſhall ſubjoin to this deſcription of the brain, a brief account of the anatomy of the medulla ſpinalis, and nerves. Thus, we ſhall include in one article, the ſtructure of the ſenſorium, of the organs which tranſmit impreſſions to it, and convey the determinations of the will from it; which are only to be conſidered as parts of one circle of actions.

Structure of the Medulla Spinalis.

This part is a continuation, as we have already mentioned, from the medulla oblongata, which is formed by the union of the medullary appendices of the cerebrum, and cerebellum. The bulbous portion, which we have before deſcribed as forming the corpora pyramidalia and olivaria, is the commencement of the medulla ſpinalis; although, as it is contained in the cranium, the term of ſpinal marrow cannot, with ſtrict propriety, be applied to it.

The medulla ſpinalis conſiſts externally of medullary matter; on making a tranſverſe ſection, we find a portion of cineritious ſubſtance in the centre, conſiſting of two ſtripes, which croſs each other, thus X. When covered by its membranes, it is of a firmer conſiſtence than the brain; but it ſpeedily diſſolves when laid bare. Its form is nearly cylindrical, but it is compreſſed before and behind. A groove extends along its anterior and poſterior flat ſurface, and theſe impreſſions ſeem to divide it into two cords. It is larger in the bottom of the neck, and towards the lower part of the back, than in the intermediate ſpaces. It contracts in the lumbar region into a conical form, and terminates by a ſmall filament, which is fixed to the bottom of the ſheath of dura mater.

It ſends off a pair of nerves at each interval between the vertebræ, which are named cervical, dorſal, lumbar, or ſacral, according to the region in which they ariſe. Theſe nerves are produced by two faſciculi of fibres, one of which comes from the front, the other from the back of the cord. Theſe are ſeparated by a membrane which will be preſently mentioned, and penetrate the dura mater by two diſtinct holes, after which they unite to form a ganglion. The arteries of the dura mater are derived from many ſources; the vertebrals furniſh an anterior and poſterior one. The others are derived from the cervical, intercoſtal, lumbar and ſacral arteries, which enter at the openings, through which the nerves go out, and communicate with the ſpinal branches of the vertebrals, ſo as to keep up their ſize to the end of the medulla ſpinalis. The veins, which are alſo numerous, pour their blood into two longitudinal ſinuſes, formed in the dura mater, which lines the vertebral canal, and extending the whole length of that canal. Theſe communicate together by tranſverſe portions at the intervals of the vertebræ. They communicate in the neck with the vertebral veins; in the back, with the intercoſtals; and below, with the lumbar and ſacral veins.

The ſpinal marrow is covered externally by a production of dura mater, which extends from the great occipital foramen to the bottom of the ſacrum, connected throughout to the vertebral canal, by a looſe cellular and adipoſe ſubſtance; and at the intervals of the vertebræ by the conical proceſs, which it attaches to the commencement of the nerves. The tunica arachnoidea is much more looſely connected to the vaſcular membrane, than it is in the brain. The pia mater ſurrounds the ſpinal marrow very cloſely, inſomuch that, in making a tranſverſe ſection, the medullary matter protrudes from the cut ſurface. The medulla ſpinalis is connected at the ſide to the dura mater by ſmall portions of membrane, which are found between the anterior and poſterior origins of the nerves, and are inſerted in a pointed manner into the dura mater: it is called ligamentum dentatum. For deſcriptions and repreſentations of the medulla ſpinalis, the reader may conſult Huber de medulla ſpinali, Goetting. 1741. which is alſo contained in the Icones of Haller; Monro's obſervations on the nervous ſyſtem, and Fratſcher deſcriptio medullæ ſpinalis cum icone, Erlang. 1783.

Structure of the Nerves.

The nerves are ſoft, white and fibrous cords, nearly of a cylindrical ſhape, ariſing from the brain, or medulla ſpinalis. When they leave the brain, the pia mater collects the fibres into larger or ſmaller faſciculi, which can be ſeen without any previous preparation, by making a longitudinal or tranſverſe ſection of a pretty large trunk. Where the nerves penetrate the dura mater, they are firmly connected to the margin of the opening, and have been ſuppoſed to receive an external coat from that membrane; this, however, is only true of the optic nerve. The medullary filaments of the nerves are covered by a vaſcular membrane called by Reil neurilema, which detaches proceſſes from its inner ſurface, to ſurround and inveſt the ſmaller diviſions and fibres of the medullary ſubſtance. By immerſing a nerve in alkali, the medulla of the nerve is diſſolved, and the contained membranous tubes formed of neurilema are left. Acids diſſolve the neurilema, and leave the medullary fibres. Theſe organs receive a conſiderable ſupply of blood from veſſels which ramify on the neurilema, as thoſe of the brain do on the pia mater. The cellular texture, which conſtitutes the vaſcular membrane of the nerve, is reſolved on its ſurface into a looſe ſubſtance, which connects the nerve to the ſurrounding parts. By maceration in water, and careful diſſection, a nervous trunk may be ſeparated into numerous threads; and each of theſe, when examined in a microſcope, ſeems to be an aſſemblage of proportionally ſmaller fibres. Greater magnifying powers ſhew thoſe fibres, which before appeared ſingle, to be ſtill compoſed of ſmaller threads; and it is doubtful, whether the ultimate nervous fibre can be diſcovered. All that is ſaid, therefore, of the form, courſe, &c. of theſe ultimate fibres, is wholly conjectural. Microſcopical obſervations, however, ſhew many tranſverſe ſtriæ in the ſubſtance of nervous trunks, of a more lucid appearance than the reſt, which diſappear on ſtretching the nerve, and are reſtored by again letting it looſe. This appearance characterizes the ſmalleſt perceptible fibres, and enables us to diſtinguiſh them from muſcle, tendon, &c. Fontana probably alludes to this circumſtance, when he calls the nervous fibres, waving cylinders. The fibres do not proceed in a ſtraight uninterrupted courſe, but join frequently with each other, ſo that, according to the expreſſion of Monro, they form a plexus in each nervous trunk. The experiment of Reil, of immerſing the nerve in nitric acid, to diſſolve its membrane, ſhews this, as well as microſcopical obſervations. A nerve, when divided in the living ſubject, retracts: the medulla is expreſſed from its extremities by the contraction of its membranes, in the form of globules, more copiouſly, according to Prochaſka, from the upper, than the lower end. This protruſion of the medullary matter takes place in a leſs degree in the dead ſubject. If a nerve be cut in a living animal, and he be killed at ſome period after the operation, it will be found, that the divided extremities have ſwollen into a ſmall tubercle, and that they are connected by a new-formed matter. Anatomiſts have diſputed greatly, whether or not this were real nerve, whether it was a regeneration of medullary matter. As it would not probably be very eaſy to decide this queſtion, by merely anatomical teſtimony, from our ignorance of the minute ſtructure of theſe organs, it appears moſt philoſophical to inquire, whether the new matter will perform the functions of a nerve; and this has been completely proved by the experiments of Dr. Haighton, in the firſt part of the Philoſophical Tranſactions for the year 1795. In ſome parts of the nervous ſyſtem, little tubercles or knots, called ganglia, are found in the courſe of the nerve; and are uſually formed by the concurrence of ſeveral branches. Theſe bodies are of various figures, but generally flattened. They partake more of the red colour, than the trunks of the nerves on which they are formed, as they poſſeſs more numerous blood-veſſels. They contain ſeveral nervous fibres, diſtinguiſhed by their peculiar characteriſtics, and ſurrounded by a pretty firm vaſcular ſubſtance. The fibres communicate in theſe bodies, and each nerve which goes from a ganglion, is ſaid to poſſeſs ſome fibres of every other nerve which joins it. For a further account of the ſtructure of nerves, the following works may be conſulted: Reil Exercitationes Anatomicæ; Prochaſka de Structurâ Nervorum: Monro's Obſervations on the Structure and Functions of the nervous Syſtem; Arneman verſuche an lebendigen Thieren; Fontana Traité ſur le Venin de la Vipére, &c.; Haaſe de gangliis nervorum; Scarpa Annotationes Academicæ.

Brain, *Phyſiology of the.* Having deſcribed the anatomy of the brain and nerves, we proceed in conformity to the arrangement adopted in this book, to ſpeak of the functions or phyſiology of theſe organs. The firſt circumſtance which it appears neceſſary to diſcuſs in this intricate and intereſting ſubject, is the inquiry reſpecting the place in which ſenſation exiſts. There could ſcarcely be any thing more difficult than to convince a perſon who has never thought on this point, that feeling reſided ſolely in the brain, and that his belief, that it exiſted in the tangible extremities of the nerves, is a deception; and yet there is nothing of which men of the ſtrongeſt minds, and who have moſt attended to the ſubject, are more perfectly convinced. The circumſtances which have induced them to entertain this belief are, 1ſt. that if the continuity of the nerve between the extremity which receives impreſſions from the objects of ſenſe, (and which we ſhall, therefore, call the tangible extremity of the nerve,) and that extremity which terminates in the brain, (which is uſually denominated the ſenſorial extremity,) be by any means intercepted, both feeling and voluntary motion are ſuſpended. 2dly, The falſe judgment which the percipient forms of corporeal diſorders, confirms this opinion. If a nerve be irritated at the midſpace between its origin and termination, ſevere pain is ſuppoſed to be felt in thoſe parts to which it is diſtributed; and if it ſupplies muſcles, they become convulſed. If a diſeaſe forms about the hip-joint, or in the loins, the patient frequently complains of violent pain on the inſide of the knee, without adverting to the real ſeat of the diſorder. And people who have had their limbs taken off, can ſcarcely believe that they are removed from their bodies, in conſequence of the pains and ſenſations which they ſeem to feel in them. In either of theſe caſes a motion is produced in the middle of a nerve, which being tranſmitted to the brain, is attributed by the percipient to a diſordered ſtate of the parts, from which it had been accuſtomed to receive impreſſions. Again, if a certain degree of preſſure be made on the brain, all ſenſation and voluntary motion are interrupted. As theſe circumſtances have been ſo well explained by Haller, we ſhall not enlarge on this ſubject, but proceed to conſider the means, by which this tranſmiſſion of motion from one end of the nerve to the other, is probably effected.

From the earlieſt times in which men contemplated the animal economy, reflecting perſons imagined, that they perceived ſome ſubtile inviſible agent, which operated in the performance of the animal functions. Hippocrates attributed actions, which he could not otherwiſe account for, to ſomething which he called nature; Paracelſus, to the operation of an archæus; Stahl, to different animæ; and Harvey ſeems to have had an idea of a vital principle. But if any merit is due to ſuch opinions, the credit of firſt decidedly teaching that a ſubtile inviſible matter was diffuſed throughout living bodies, and was the cauſe of many phenomena occurring in them, belongs to Mr. Hunter. This opinion he has endeavoured to prove by experiments, which will be noticed under the article Life. The moſt concluſive arguments in favour of this opinion will probably be given under the *phyſiology* of Muscles, in diſcuſſing the cauſe of muſcular motion, and to theſe the reader is referred.

It has been cuſtomary to conſider matter as paſſive, and to denominate the active power which puts it in motion, by the name of ſpirit; but we relinquiſh the purſuit of the primary cauſe of the motions of matter, becauſe we know nothing of the ſubſtances which we uſually denominate matter or ſpirit. Theſe appellations have been given to them from their properties, which we do know. We know nothing of matter, but ſome of the properties which different ſpecies of it poſſeſs. Of that matter, which, for the moſt part, preſents itſelf to our notice, when collected together in ſuch quantity as to be cognizable to the eye and touch, we know that it poſſeſſes a property, called by Sir Iſaac Newton inertneſs, an indiſpoſition to move, unleſs impelled to it, and a propenſity to continue in motion, unleſs retarded. But there are other ſubſtances in the univerſe which are uſually conſidered as material, ſuch, for inſtance, as electricity and magnetiſm, the motions of which do not ſeem to be regulated by the ſame laws, and which are cognizable neither to the eye nor touch, but of the exiſtence of which reaſon furniſhes us with the moſt indiſputable teſtimony. Of theſe kinds of ſubtile and mobile matter, we know that they frequently act upon, and put in motion that which is more groſs and inert. We ſee magnetiſm move even ponderous pieces of iron, and electricity diſplace and diſſever the moſt ſtabile ſubſtances which oppoſe its paſſage. The reaſons for entertaining the opinions of Mr. Hunter, that there is a ſubtile, mobile, and inviſible ſpecies of matter connected with the evident ſtructure of living bodies, as magnetiſm may be ſuperadded to iron or electricity to various ſubſtances, will be detailed under different articles in this book. At preſent, we claim permiſſion to employ this explanation of the phenomena of life, becauſe there appears nothing improbable in it, or inconſiſtent to preſent philoſophical notions; and it is a ſuppoſition, which appears, not only verifiable, but adequate to account for the phenomena which occur in living bodies. By employing this mode of accounting for the actions of life, we avoid all inquiry into the primary cauſe of the motions of matter; we contemplate only a ſecondary cauſe, ſuch as takes place in electrical and magnetic experiments, in which a ſubtle ſpecies of matter puts in motion that which is more groſs and inert.

If it be admitted, that ſenſation exiſts in the brain, and volition proceeds from that part, it neceſſarily follows, that a motion muſt be tranſmitted along the nervous cords, whenever theſe effects take place. It was formerly ſuppoſed that theſe cords were paſſive, and might be made mechanically to vibrate; but their want of elaſticity and tenſion, and their pulpy origins and terminations, are circumſtances which rendered this ſuppoſition inadmiſſible. Phyſiologiſts were, therefore, induced to ſuppoſe, that the nervous fibrils were tubular, and that they contained a ſubtile fluid, by means of which ſuch motions were tranſmitted. Haller's opinion of the nervous fluid appears ſenſible and accordant to the philoſophical opinions of his time. He ſays, "Si vero cogitata noſtra de ipſa natura ſpirituum proferre juberemur, activum ad motum a voluntate et a ſenſu concipiendum aptiſſimum celerimum omne ſenſuum acie ſubtilius, tamen hactenus igne et æthere et electro, et magnetica materie craſſius facere elementum, ut et contineri vaſis et vinculis coerceri aptum ſit, et denique manifeſtum ex cibis naſci et reparari queat." But, at preſent, no one will doubt the poſſibility of a ſubtile and mobile fluid inhering in cords, and moving along them without being contained and confined in tubes. Does not electricity move along a wire? and is it not probable that a ſubtile fluid may inhere in a ſubſtance, in conſequence of an attraction which it poſſeſſes to it, and more particularly, if the ſubſtance which attracts it is ſurrounded by others, which may be regarded as non-conductors? The celerity with which motions are tranſmitted from the tangible extremities of thoſe nerves which are moſt diſtant from the brain, and the celerity with which volition is tranſmitted to muſcles in conſequence of ſenſations thus occaſioned, are ſufficient to convince us that theſe effects muſt be produced by the medium of a very mobile matter. It is not neceſſary to ſuppoſe, when motions of a ſubtile matter are tranſmitted along the nervous cords, that an evident motion of the viſible matter of thoſe cords ſhould take place. This opinion, that ſenſation is cauſed, and volition directed through the medium of a ſubtile, inviſible matter, inhering in the nervous cords, is ſo like the opinion of Hartley, of the phenomena of the nervous ſyſtem being produced by the vibrations of an æther, that it is not neceſſary, in this place, further to proſecute the ſubject. We rather refer the reader to his work, for a more ample illuſtration of this theory.

Formerly it was ſuppoſed, that the motions of the nerves, which cauſe ſenſation, were the mere effect of an impulſe made on their tangible extremities by the bodies which we feel. It ſeems to be an improvement in modern phyſiology, to impute the nervous motions to an action begun in them, in conſequence of the ſtimulation which they ſuffer from ſuch impulſes. This opinion is contended for by Doctor Darwin, in his paper on "Ocular Spectra", inſerted in the Philoſophical Tranſactions; and Mr. Home has further ſhewn, in the Croonian Lecture for the year 1801, inſerted in the Philoſophical Tranſactions, that nerves have an irritability reſembling that of muſcles, which produce a contraction in them when they are divided. This opinion aſſiſts us in underſtanding how our ſenſations may be very vivid from the ſlighteſt impulſes; ſuch as, for inſtance, take place from the application of the particles of odour to the olfactory nerves, for it is not the impulſe, but the conſequent action, that is tranſmitted to the ſenſorium; and why we may have no ſenſation from the moſt violent impulſes, for ſuch we cannot but ſuppoſe to take place when a limb is removed by a cannon ball, a circumſtance which has happened without the conſciouſneſs of the perſon to whom it has occurred.

Theſe hypotheſes appear to us adequate to explain all the circumſtances that have been noticed relative to the functions of the nervous ſyſtem. To review the circumſtances, even with the greateſt poſſible brevity, would render this article too extenſive. Yet, there are ſome particulars which the reader may expect that we ſhould advert to. Of theſe, it is right to mention, that the diſpoſition of the nerves to act is increaſed, as the cauſes exciting their action is diminiſhed. This circumſtance has been expreſſed, we can ſcarcely ſay explained, by the late Doctor Brown, in his "Elementa Medicinæ," by ſaying that the excitability of the nerves is accumulated in proportion to the deficiency of the exciting cauſes. This fact is productive of conſequences which appear particularly beautiful and uſeful; it furniſhes a power of accommodation in our ſenſes to the varying circumſtances of life. Thus, for inſtance, a perſon confined in the dark ſhall receive the impreſſion of ſight from a very ſmall quantity of light, and his eyes would even be injured by the common day-light. The reverſe of this is equally true: that a perſon ſhall live in a ſtrong light, till his eyes become ſo accuſtomed to it, that a leſs quantity ſhall not produce a proper impreſſion; or a perſon, who has long been in a ſtill and ſilent place ſhall hear the ſlighteſt ſound, ſuch as would be imperceptible to one whoſe auditory nerves had, for ſome time, been accuſtomed to the forcible impreſſions of the air, made by loudly ſounding bodies. This power of accommodation does not only belong to particular ſenſes, but it will bear a more univerſal application. A perſon, living a luxurious life, who avoids every ſenſation which gives him the leaſt uneaſineſs, and who attends only to the gratification of his pleaſures, renders his nervous ſyſtem too ſenſible: he ſhrinks at the cold wind, he is ſtartled at a loud noiſe; and every rough impreſſion, which would not diſquiet another, owing to his ill-judged indulgence, diſtreſſes him. Let us remark the contraſt in a hardy ſeaman, who has endured the inclemency of the weather, who has ſuſtained fatigue and pain: if the winds blow, or the cannon thunder, he hears the one, and feels the other, but they do not much affect him; and from being habituated to ſenſations, at firſt painful, he is afterwards unaffected, even by thoſe impreſſions which would hurt a man living in the medium between theſe two extremes.

It ſeems alſo right here to remark, that a great ſimilarity appears to exiſt between the ſuppoſed irritable actions of the nerves, and thoſe of the muſcles. The facility, accuracy, and celerity of the actions of nerves are improved by uſe, as is exemplified in the correct and quick ſenſations of thoſe perſons who are accuſtomed to exerciſe their auditory nerves in attending to muſical ſounds.

A train or ſucceſſion of nervous actions having taken place, they become concatenated, and are liable to recur in ſucceſſion, if one of theſe actions is accidentally induced.

Both the nerves and muſcles ſeem to require temporary reſpites from action, and both appear to be refreſhed by ſleep.

The ſuppoſition of actions occurring in the nerves, explains many circumſtances connected with diſeaſes. Vehement actions may be begun independent of impulſes in the tangible extremities of nerves, and thus occaſion ſevere pains. This ſeems to happen in the diſeaſe called tic doloureux. Ordinarily, actions begun in the tangible extremities of the nerves, are regularly tranſmitted to the brain; but in caſes of nervous pains, the action ſeems to begin in the middle of the nerves. It is alſo probable, that actions may take place in the ſenſorial extremities of the nerves producing illuſory ſenſations, and thus exciting ideas.

The next ſubject which claims our attention, is the part of the brain to which all the nervous motions, produced by external impreſſions tend, and from which all the motions ariſing from volition begin. Phyſiologiſts have agreed to call this part the ſenſorium, and have ſuppoſed it to be ſituated in various parts of the brain; but there is no part of the brain to which this importance has been aſcribed, which has not been occaſionally found diſeaſed, without ſenſation and volition being impeded. Of late, Soemmerring has affirmed, that he can trace all the nerves to the ventricles of the brain, in which he therefore ſuppoſes the faculty of ſenſation and volition to reſide. All our ſenſes may be gratified at the ſame time, and we may give a preference to the pleaſure which we receive from one of them, above that which we derive from the others; which circumſtance ſeems to prove the unity of that which perceives and determines. Haller, after conſidering the ſubject, thus concludes: "Nunc quidem in univerſum obſervamus, non debere anguſtiorem animæ ſedem poni, quam ſit conjuncta omnium nervorum origo; neque particulam aliquam pro ea ſede offerri, niſi ad quam omnes nervos ducere poſſimus. Facile enim intelligitur, debere a ſenſorio communi nullum ullius particulæ corporis animati ſenſum abeſſe," &c. Elem. Phyſiol.

If it be admitted that ſenſation and volition exiſt in the brain, it muſt alſo be granted that motions muſt be produced in the ſenſorial extremities of the nerves by the objects of ſenſe, and that reflected motions muſt take place in the nerves, by which the mandates of the will are tranſmitted to the muſcles.

If all that has been ſaid were to be aſcertained, the extent of our knowledge would, in that caſe, only lead to this concluſion, that motions of a ſubtile ſubſtance took place in the ſenſorium, and from ſuch motions we eſteem it impoſſible to account for ſenſation. We can conceive no varieties in theſe motions but thoſe which relate to degree or duration. We feel it impoſſible to believe that ſenſation can be the reſult of ſuch motions, or that ideas can ariſe from any ſucceſſion or train of them. We therefore conclude, with many celebrated phyſiologiſts, and men of the ſoundeſt underſtanding and greateſt reflection, in the natural belief, that ſenſation, remembrance, compariſon, judgment, and volition are properties of a diſtinct ſubſtance.

The concluſion to be drawn from this examination of the functions of the brain and nerves, and from that of the other animal functions, ſeems curious and intereſting. We perceive an exact correſpondence in the opinions we obtain from phyſiological reſearches, and thoſe which ariſe ſo naturally from the ſuggeſtions of reaſon, that they have been conſidered as intuitive. For moſt reflecting perſons in all ages of the world have believed, and it is, indeed, natural to believe, what modern phyſiology teaches, that in the human body there exiſts an aſſemblage of organs, formed of common inert matter, ſuch as we ſee in the dead ſtate, a principle of life and motion, and a ſentient and rational faculty, all intimately connected, yet each diſtinct from the other.

Brain, *Chemical Analyſis of*. Though the analyſis of this moſt important organ can throw no light on its peculiar functions, it is in itſelf ſufficiently remarkable to be detailed ſomewhat at length.

It is needleſs to give all the conjectures on the nature of brain, made before chemiſts had acquired a tolerably accurate and juſt method of analyzing animal matter. The experiments of real importance are chiefly thoſe of Thouret, in 1790, with ſome ſubſequent additions by Fourcroy.

The natural ſtate of brain is known to every one to be a ſoft pulp, with ſomewhat of a ſoapy feel, and little or no ſmell when freſh. Expoſed to a moderate heat, it loſes moiſture, ſhrinks to about a fourth of its bulk, and then becomes a thick tenacious maſs, of a greeniſh brown. Fully dried, it becomes ſolid, and breaks under the fingers like old cheeſe. If this is ſtrongly heated in a crucible, it firſt gives out ammonia, puffs up and melts into a black pitchy maſs, takes fire and burns with much flame and a thick ſharp ſmoke, and leaves a coal which is long in reducing to aſhes. No naked alkali is to be obtained from its aſh by lixiviation, but ſome traces of the phoſphats of lime and ſoda.

Brain, either in its natural ſtate, or gently dried, without decompoſition, unites very readily with water, by rubbing, and forms an opake, uniform, emulſive maſs, which froths ſtrongly by agitation, and does not ſeparate from the water by filtration. In this, and other properties, it much reſembles a lather of ſoap, and has been thought to be truly ſaponaceous, by Thouret; but it does not turn blue vegetable colours green, nor is it in all reſpects a proper ſoap.

This emulſion coagulates by heat, and depoſits its contents in white flocculi. The clear liquor ſhews the preſence of a phoſphoric alkaline ſalt, by giving a calcareous phoſphat, when mixed with lime water which precipitates.

Acids, and all calcareous ſalts, and alcohol added to the cerebral emulſion, immediately curdle it. When an acid is uſed, the clear liquid ſeparated from the white coagulum contains lime, ſoda and ammonia, all united with the acid employed; and which, therefore, in the natural ſtate, contributes to render the matter of brain ſo eaſily miſcible with water.

Dilute nitric acid only coagulates the cerebral emulſion. Strong nitric acid added to brain cauſes an efferveſcence with evolution of much azotic gas, a violent intumeſcence, heat, and ſubſequent production of nitrous gas, carbonic acid, and much ammonia; and the reſidue furniſhes oxalic acid, as generally happens when this acid is decompoſed over any inflammable animal matter.

Muriatic acid ſimply coagulates the cerebral emulſion, without inducing any complex chemical change. The white coagulum, collected and dried, amounts to about a tenth or a twelfth of the ſubſtance of the brain employed for the emulſion.

Cauſtic fixed alkalies act very powerfully on brain, even without heat, and diſengage much ammonia by the mixture. When diſſolved by heat, the maſs is truly ſaponaceous.

The action of alcohol on brain is the moſt ſingular. When brain, gently dried by heat, or firſt coagulated by an acid and afterwards dried, is digeſted in a boiling heat, with about twice its weight of alcohol, the latter depoſits, on cooling, a number of yellowiſh white cryſtalline blades. It requires two or three digeſtions with alcohol, entirely to exhauſt the ſoluble matter. Brain loſes in the proceſs about five-eighths of its weight; however, on evaporating the ſpirit, to collect all the cryſtalline matter, no more than about half of the above quantity is obtained, ſo that the loſs is probably water. This cryſtalline maſs cruſhes under the finger with a kind of greaſy conſiſtence; it is not melted, but only ſoftened, in the heat of boiling water, and when further heated it blackens, melts, and gives out a burnt and ammoniacal ſmell. In this reſpect it differs from ſpermaceti, to which it has been compared, which laſt melts unchanged at about 104°. Adipociæ, to which alſo it has been likened, melts unchanged at about 83°.

This cryſtalline matter, left in ſolution with the ſpirit after cooling, may be obtained very ſimilar to that which firſt ſeparates, by ſlowly evaporating the ſpirit. This latter has a ſaltiſh taſte, and a conſiſtence like ſoft ſoap. Both are readily miſcible with water into a kind of emulſion, and redden litmus paper. A long maceration in cold alcohol will cauſe a depoſition of the ſame cryſtalline matter, and hence it is perceived in wet anatomical preparations of the brain or nerves.

The ſubſtance of brain, on the whole, bears conſiderable reſemblance to albumen, reduced to a kind of ſaponaceous ſtate, perhaps by union with ammonia, and with much watery fluid; but the theory of the production of the peculiar cryſtalline matter is very obſcure. Though this much reſembles ſpermaceti, adipociæ, and ſtill more the cryſtalline matter of biliary concretions, it ſomewhat differs from them all. Its nature is conſiderably like that of a concrete oil, but no oil can be obtained from recent brain by ſtrong preſſure, in the way that oil is commonly extracted, and the difficult fuſibility of this appears to be a character of difference from moſt other oily ſubſtances.

The ſpontaneous change which brain undergoes by putrefaction is very ſingular. This was obſerved by M. Thouret, on the memorable occaſion of the clearing out of the burying ground of Les Innocents at Paris, which has been already alluded to under the article ADIPOCIÆ, and which furniſhed, to the meritorious philoſophers who had the courage to make this abode of the dead a field for chemical obſervation, a vaſt number of moſt intereſting facts on the ſubject of animal putrefaction.

It appears extraordinary that the brain, whoſe texture is ſo ſoon injured for anatomical demonſtration, ſhould be, of all the ſoft parts of the body, the moſt indeſtructible by putrefaction when retained in its bony caſe. The following are the remarks of M. Thouret on this ſubject, on the occaſion abovementioned. "The bodies contained in the burying-ground of Les-Saints-Innocents were found in different ſtates; the greater number of thoſe which had lain in the common receptacles for twelve or fifteen years, were moſtly converted to a kind of whitiſh ſoap, retaining the form of the different parts of the body. In all theſe the brain was equally in a ſtate of preſervation, for, on opening the ſkull, I always found the brain in pretty large lumps, filling at leaſt a quarter or a third of the cavity. In this ſtate it was moſtly ſoft, pulpy, and breaking down under the fingers, like the ſoapy matter to which the fleſh was changed; but ſometimes firmer, more friable, and ſolid. In theſe maſſes the original form of the brain, the diviſion of the hemiſpheres, and the convoluted texture were ſtill obſervable. The natural colour alſo remained, ſo that the white medullary part could be diſtinguiſhed from the browner cortical; and no ſmell was to be obſerved, except that of the ſoapy matter with which the bones were covered. Even where the period of inhumation had been ſo long as to deſtroy all the viſcera, and moſt of the muſcles of the body, the brain ſtill remained." Journ. de Phyſ. tom. 329. Fourcroy, Syſteme de Conn. Chim. tom. 9.

BRAIN, *Injuries of the*, in *Surgery*. This organ may ſuffer from a great variety of cauſes, either accidental, or ſpontaneous; for example, from wounds, contuſions, fracture of the cranium, expoſure to inclement weather, and all the exciting cauſes of inflammation, ſuppuration, effuſion of ſerum, or blood, &c. The ſymptoms will, conſequently, differ according to the nature of the morbid affection, and the preciſe ſeat of the injury; but this one ſymptom is found to exiſt in all caſes where the brain ſuffers from compreſſion;—namely, an irregular or defective nervous energy. We do not know in what the action or influence of the brain conſiſts; but we invariably experience either a paralyſis, or an inordinate motion of ſome part of the body, when the nerves going to that part have been compreſſed at their origin in the brain. The explanation of theſe phenomena, and of the various diſeaſes of the brain, belong to other articles in the Cyclopædia. See, eſpecially, INFLAMMATION, CONTUSIONS, WOUNDS, CONCUSSION, FRACTURES, APOPLEXY, HYDROCEPHALUS, or *Watery* HEAD; likewiſe the operation of TREPANNING.

BRAIN, *fungus of the.* See FUNGUS.

BRAIN, *traces of the.* See TRACE.

BRAIN, in *Geography*, a town of France, in the department of the Maine and Loire, and chief place of a canton in the diſtrict of Saumur, 2 leagues N.E. of Saumur.

BRAINE, a town of France in the department of the Aiſne, and chief place of a canton in the diſtrict of Soiſſons, ſeated in a beautiful plain on the river Veſle, 3 leagues E. of Soiſſons. The town contains 1291, and the canton 10,779, inhabitants; the territory includes 255 kiliometres and 42 communes.

BRAINE *l'Aleu*, a ſmall town of the Netherlands, in the county of Hainaut, 10 miles E.N.E. of Braine le Comte.

BRAINE *le Comte*, a ſmall town of the Netherlands, in the county of Hainaut, having a tower ſaid to have been built by Brennus, a general of the Galli Senones, from whom the town is alſo ſaid to have derived its name; 15 leagues S. of Antwerp, and 3½ N. of Mons.

BRAINTREE, a large market-town of Eſſex, England, ſituated on riſing ground, 40 miles N.E. from London, and connected on the north with Bocking, or Bocking-Street, one of the moſt conſiderable villages in this county. In the Domeſday-book, the manor is comprehended under the name of Raines, and was then held by the Biſhop of London, to whoſe ſee it continued attached, till the reign of Edward the ſixth.

Braintree was made a diſtinct pariſh about the time of king John or Henry the third: the former of whom conſtituted it a market-town, through the intereſt of William de St. Maria, biſhop of London. At that period, however, it was only a hamlet to Raines, and the pariſh itſelf was called Great Raine; but from the increaſe of houſes and population, Braintree at length became the chief place, and gave its own name to the diſtrict. Its riſe is ſuppoſed to be owing to its convenient ſituation on the high road from London into Suffolk and Norfolk, and to the building of inns and lodging-houſes for the reception of the numerous pilgrims from the ſouth, who, in the days of ſuperſtition, were continually travelling to the ſhrines of St. Edmund and our lady of Walſingham. After the reformation, the town was deſerted of its viſitors; but again obtained conſequence from the Flemings, who ſettled here in the reign of Elizabeth, after being expelled from the Netherlands by the duke of Alva. Theſe emigrants were the firſt who introduced the baize and ſay manufacture to this part of England, which buſineſs is ſtill carried on here, but not to ſuch great extent as formerly. The government of the town is veſted in a ſelect veſtry, compoſed of twenty-four pariſhioners, who, as early as the year 1584, were ſtyled governors of the town, and town magiſtrates. The church is a ſpacious ſtructure, occupying a high ſpot of ground, which appears to have been the ſite of a camp. This fabric was founded in the reign of Edward the third, as appears from the arms, which decorate it, of the neighbouring gentry who lived at that time; and alſo from the will of John de Naylinghurſt, who, in 1349, bequeathed a "black bullock towards the work of the church." It has ſince been greatly enlarged, particularly in the reign of Henry the eighth, when the roof was heightened, and the ſouth aiſle built. The expence of theſe alterations was partly defrayed by receipts, ariſing from the performance of three plays *acted in the church.* The firſt play, entitled St. Swithin, was acted in 1523; the ſecond, named St. Andrew, on the Sunday before Relique Sunday in 1525; and the third called Placy Dacy, alias St. Eweſtacy, in 1534. After the reformation, the players' robes were ſold by the church-wardens, for fifty ſhillings, and the play-books for twenty ſhillings. In the chancel is an inſcription to the memory of Dr. Samuel Collins, who was the ſon of a miniſter of this pariſh, and for ſome years principal phyſician to Peter the Great, czar of Muſcovy. This town contains 454 houſes, and 2821 inhabitants; the ſtreets are moſtly narrow and incommodious; and many of the buildings are of timber and very old. Various bequeſts have been made for the ſervice of the poor; the moſt celebrated, though not the moſt valuable, was the gift of Henry Smith, eſq. alderman and ſalter of London, who, in the reign of Charles I. left 2800l. to purchaſe an eſtate in this county; the proceeds to be diſtributed among the poor of the five pariſhes of Braintree, Henham, Terling, Tolleſhynt-D'Arcy, and Dover-court.

The village of Bocking, which now forms part of this town, principally conſiſts of one long ſtreet, extending along the high road, and contains 623 houſes, and 2680 inhabitants; ſeveral of the houſes are inhabited by reſpectable families. The principal trade, in addition to what ariſes from the paſſage of goods between the metropolis and the more eaſtern counties, is the manufacture of baize. On the river Pant, named the Blackwater, in the lower part of its courſe which flows through it, are ſeveral fulling and corn mills. The church, a ſpacious building, ſtanding on an eminence, between one and two miles north-weſt of Bocking-ſtreet, is dedicated to the Virgin Mary, and ſuppoſed to have been built about the time of Edward III. An hoſpital for ſeven poor people was founded and endowed here in the reign of Henry VI. by John Doreward, eſq. This hoſpital ſtill exiſts; and alſo a charity-ſchool, endowed by Dr. Gauden, biſhop of Worceſter, for educating thirty poor boys. Morant's Hiſtory of Eſſex, 2 vols. folio.

BRAINTREE, a townſhip of America, in Orange county, Vermont, 30 miles N.E. from Rutland, joining Kingſton to the weſt, and Randolph on the eaſt, and containing 531 inhabitants.

Alſo, one of the moſt ancient townſhips in Norfolk county, in the ſtate of Maſſachuſetts, ſettled in 1625, and then called "Mount Woolaſton," from the name of its founder. It lies in a bay, 8 miles E. of S. from Boſton, and contains 1285 inhabitants. Granite ſtones are ſent in great quantities from this town to Boſton and other places for ſale. The bay abounds with fiſh and ſea fowl, and particularly "brants."

BRAINTREE, *New*, a town of America, in the county of Worceſter, 21 miles N.W. of Worceſter, and containing 875 inhabitants.

BRAINTREM, a poſt town in Luzerne county, Pennſylvania, 303 miles from Waſhington.

BRAIT, *Mark*, or UNDER-BRAIT, a town of Germany, in the circle of Franconia, and county of Schwarzenberg, ſeated on the Mayne; 12 miles S.S.W. of Wurzburg, and 36 S.W. of Bamberg.

BRAITNBRUG, a town of Germany, in the archduchy of Auſtria; 3 miles N. of Steyragg.

BRAKE, or BRAKEN, in *Botany*, the vulgar name for the Pteris Aquillina, or common fern. It is alſo uſed in ſome parts of England for a copſe of various wild ſhrubs, intermingled with fern, and other tall reeds.

BRAKE, is alſo uſed for a farrier's inſtrument, otherwiſe called BARNACLES. The word alſo occurs for a baker's treading-trough.

BRAKE, in the *Hempen Manufactory*, denotes a wooden-toothed implement, wherewith to bruiſe, and break the bun of hemp, and ſeparate it from the rind.

Brake *of a pump*, the handle or lever, by which a pump is uſually managed. It operates by means of two iron bolts, thruſt through the inner end of it; one of which reſting acroſs two cheeks or ears, in the upper end of the pump, ſerves as a fulcrum for the brake, ſupporting it between the cheeks. The other bolt connects the extremity of the brake to the pump ſpear, which draws up the box, or piſton charged with the water in the tube. See Pump.

BRAKEL, in *Geography*, a town of Germany, in the circle of Weſtphalia, and biſhoprick of Paderborn, formerly a city of the empire, 3 miles E. of Paderborn.

BRAKENBURG, Reinier, in *Biography*, a painter of landſcapes and converſations, was born at Haerlem in 1649, and ſtudied firſt under Momners, and afterwards, according to Houbraken, under Bernard Schendel. His ſubjects were like thoſe of Brouwer; and he reſembled him, not only in his genius, and ſtyle of compoſition, but in the diſſoluteneſs of his morals. In ſome of his pictures he ſeems to have been deſirous of imitating Oſtade. His figures were deſigned after nature, and repreſented in the habit and faſhion of the times. His ſubjects were the feaſts of boors, the amuſements of the villagers, dancings, and frequently converſations, in which love and wine were always introduced. His compoſitions are ingenious, and full of variety; though the forms of his men and women are the ſame, and ſelected without elegant taſte from low nature. His colouring is ſtrong and natural, his touch lively and fine, but he is deficient in taſte of deſign. Pilkington.

BRALIN, in *Geography*, a town of Sileſia, in the principality of Oels; 7 miles E. of Wartenberg.

BRALIO, a mountain in the country of the Griſons, ſeparating the valley of Munſter from the county of Bormio, and being a part of the Alps, which is ſuppoſed to be the ſame with that mentioned by Tacitus, under the appellation of "Juga Rhætica." The firſt ſource of the river Adda lies near the ſummit of this mountain. Over the Bralio is a road, which, though very indifferent, was formerly the principal paſſage for the merchandize, ſent from the Tyrol, through the Valteline, into the Milaneſe: at preſent, it is much leſs frequented.

BRAM, a river of Germany, which runs into the Stoer, 10 miles above Itzehoe, in the duchy of Holſtein.

BRAMA, or Brahma, in *Mythology*, a pagan deity among the Brahmins in the Eaſt Indies. See Brachmans.

Brama, in *Ichthyology*, a ſpecies of Cyprinus, known with us by the name of Bream, and which is diſtinguiſhed by having the fins brown, and in the anal fin twenty-ſeven rays. The bream is found in lakes and rivers, or in the ſea. It grows to the length of two, or even almoſt three feet. The food of this fiſh is herbs, worms, and ſmaller fiſhes. This is eſteemed a coarſe fiſh for the table, but to the angler it affords excellent ſport. The beſt time of angling for the bream is from St. James's day to Bartholomew tide, being then in the higheſt perfection.

BRAMÆ, in *Natural Hiſtory*, a ſpecies of Echinorhynchus, that infeſts the inteſtines of the bream. The neck is filiform, and the proboſcis armed with very minute prickles. Goez. Gmel.

Bramæ, a ſpecies of Fasciola, found in the inteſtines of the bream and ſticklebacks. The form is oblong, round, tapering, and obtuſe at the baſe; neck round and ſomewhat incurvated. Mull. Zool. Dan.

BRAMAGUM, or Bromagum, in *Ancient Geography*, a town of Italy, in the route from Rauracum to Auguſta Prætoria. Antonin. Itin.

BRAMANT, in *Geography*, a ſmall town of Savoy, in the valley of Maurienne, ſeated on the river Arc. N. lat. 45°. E. long. 4° 15′.

BRAMANTE, Lazzari, in *Biography*, a famous Italian architect, was born at Caſtel du-Sante, in the territory of Urbino, in 1444. His firſt views were directed to the profeſſion of a painter; but architecture being better adapted to his taſte and talents, he devoted himſelf wholly to the attainment of excellence in the art. For this purpoſe he went to Milan, about the year 1470, and afterwards to Rome and other cities of Italy, availing himſelf of inſtruction from the beſt maſters, and from a diligent examination of the architectural remains of antiquity. At Naples he was employed by cardinal Caraffa in re-building the convent della Pace; and the reputation he thus acquired recommended him to pope Alexander VI., in whoſe ſervice he executed many deſigns. Under Julius II. he was employed, as ſuperintendant of his buildings, in accompliſhing the grand project of joining the Belvidere with the Vatican, by means of two galleries extended acroſs a valley. In 1504 he accompanied pope Julius to Bologna, and was engaged in fortifying the town; and during the war of Mirandola, he had ſeveral opportunities of exerciſing his talents in the military art. After his return to Rome, he adorned the city with many fine buildings; and at length undertook to demoliſh the cathedral of St. Peter's and to ſupply its place with another edifice ſuited to the capital of the Chriſtian world. His plan for this purpoſe was adopted; and before the death of the pope, in 1513, the new ſtructure was advanced as far as the entablature; and at the time of his own death in 1514, the four great arches for the ſupport of the dome were erected. The original deſign was abandoned by the architects who ſucceeded him, not without injury to the ſtructure; but the proſecution of the work was entruſted with Michael Angelo, who praiſed his plan, and conformed as much as poſſible to his ideas. Bramante was no leſs eſtimable for his general character than for his extraordinary talents as an artiſt. Obliging in his diſpoſition, he took pleaſure in encouraging young perſons of the profeſſion; and he invited the celebrated Raphael, who was his couſin, to Rome, inſtructed him in architecture, and procured for him employment in the Vatican. He was alſo ſkilled in poetry and muſic, and compoſed extemporaneouſly for his harp. To him is aſcribed the invention of conſtructing arches by caſting in wooden moulds a mixture of lime, marble duſt, and water, ſuppoſed to be a revival of the ſtucco of the ancients. His poetical works were printed at Milan, in 1756. The knowledge and practice of the art of engraving may alſo be added to his other accompliſhments. This art he probably acquired at Milan, and his execution of it exactly reſembles the ſtyle of Andrea Mantegna, that is, with the ſtrokes running from one corner of the plate to the other, without any croſſing. He died in 1517. Tiraboſchi. Strutt.

BRAMBAS, in *Botany*, a name given by the people of Guinea, and ſome other parts of Africa, to a peculiar ſpecies of lemon-tree. The leaves of this are of a deep green, and of an admirable fragrancy, when rubbed between the hands. The fruit is very ſmall, and has a remarkable thin ſkin. The juice is uſed in dying. Phil. Tranſ. N°. 108.

It has not been taken up as a diſtinct ſpecies, either by Linnæus or any other ſyſtematic botaniſt. In the Abridgment of the Philoſophical Tranſactions it is paſſed over without notice.

BRAMBER, in *Geography*, is an ancient borough town of Suſſex, in England. This place, though now reduced to only 25 houſes, ſtill poſſeſſes the privilege of ſending two members to the Engliſh imperial parliament, and the borough of Steyning, which unites with this, alſo returns two members. (See Steyning.) From 1298 to 1472 the writs for electing burgeſſes to ſerve in parliament were directed jointly to theſe two places; but ſince that period each has been ſeparately repreſented, and each governed by its reſpective charter. This borough is the joint property of two perſons, who, in the year 1786, ſtrongly oppoſed each other, for the excluſive power of poſſeſſing the whole. In this ſtruggle, it is ſtated on authenticated authority, that a tenant of one of the poor cottages had the fortitude and integrity to reſiſt the preſent of 1000l. which was offered for his vote. Here is neither market nor fair, and its whole population only amounts to ninety-one perſons. It is 51 miles ſouth from London. Hiſtory of the Boroughs of Great Britain, 8vo. vol. iii.

BRAMBLE, in *Botany*, the common Engliſh name for the black-berry and dew-berry buſhes, Rubus fruticoſus and cæſias.

BRAMBLE, *Brambling*, *Bramble-finch*, in *Ornithology*. See FRINGILLA *montifringilla*. BRAMBLING, greater. See FRINGILLA *lapponica*. Ray calls the tawny bunting, *Emberiza muſtellina*, the brambling or ſea lark.

BRAMBLE-*galls*, in *Entomology*. See GALLS *of the Bramble*.

BRAMBLE-*net*, otherwiſe called *hallier*, is a net uſed by bird catchers, of ſeveral ſizes.

BRAME, Martin Brame of Sonnerat, in *Ornithology*, *Turdus Pagodarum*, the pagoda thruſh.

BRAMER, LEONARD, in *Biography*, a Flemiſh hiſtorical painter, was born at Delft, in 1596, and acquired the art of painting in the ſchool of Rembrandt, whoſe manner in ſmall he imitated. At the age of 18 years he went to Rome for further improvement, but could never wholly diveſt himſelf of the Flemiſh goût. With a fine taſte of deſign he combined an expreſſion generally good, and occaſionally noble. His pencil is delicate, and his colouring very peculiar in the tints, and by great ſkill in the management of the chiaro-ſcuro, light, bold, and full of luſtre, particularly in the vaſes, which he was fond of introducing, and to which he gave a rich and fine relievo. To his pictures he was accuſtomed to give a great degree of tranſparence, by painting with a very thin body of colour, eſpecially in the brown and ſhadowy parts. His name was famous, not only at Rome, but in ſeveral other cities of Italy, and his works, out of Italy, are ſcarce; but when they occur in an undamaged ſtate, they fetch high prices. Among his moſt capital pictures are the "Raiſing of Lazarus," exhibiting a charming contraſt of light and ſhadow; his "Denial of St. Peter;" both executed in his beſt manner, and preſerved at Rome; and, particularly, a ſmall picture on copper, repreſenting the "Story of Pyramus and Thiſbe." Pilkington.

BRAMIA, in *Botany*. Rheed, Hort. Malab. tom. x. tab. 14. Claſs, *didynamia angioſpermia*. Gen. Char. *Cal.* five-leaved, rather unequal. *Stamens*, four, two longer. *Piſt.* ſtyle filiform; ſtigma ſimple; germ ſuperior. *Pericarp*, capſule conical, one-celled. *Seeds*, numerous, attached to a linear, central receptacle.

There is only one known ſpecies. *Stems*, cylindric, tender. *Leaves*, oppoſite, oblong, obtuſe, ſucculent. *Flowers*, axillary, ſingle, blue. It is a native of moiſt ſituations in the Eaſt Indies.

BRAMHALL, JOHN, in *Biography*, an eminent prelate of Ireland, was born at Pontrefact in Yorkſhire, about the year 1593, and admitted into Sidney college in Cambridge, in 1608, where he took his degree of B.A. in 1612, and that of M.A. in 1616. Having taken orders, he was preferred to a living in the city of York; then to the rectory of Elvington in the ſame county, and afterwards to the prebends of York and Rippon. In theſe ſeveral ſituations he engaged ſuch a degree of eſteem and confidence, both by his abilities as a preacher and by his general conduct, that he had very conſiderable influence in all public tranſactions. As one of his majeſty's high commiſſioners, to which office he was appointed, he was very aſſiduous, and, as ſome have ſaid, ſevere in the diſcharge of his duty. In 1623 he took his degree of B.D. and in 1630 that of D.D. on which latter occaſion the ſubject of his Latin theſis was "The Pope is the Author, or Maintainer of all, or at leaſt, of the chief controverſies in the Chriſtian world," in the ſupport of which he diſplayed great learning. Soon after he was invited to Ireland by lord Wentworth, deputy of that kingdom, and ſir Chriſtopher Wanderford, maſter of the rolls; and in 1633, having reſigned all his Engliſh preferments, he removed into that country. From the archdeaconry of Meath, which was his firſt preferment, he was advanced in the following year to the biſhopric of Londonderry. In theſe ſtations of dignity and influence he was eminently active and uſeful in paſſing ſeveral important acts in the parliament of 1634, in reforming the doctrine and diſcipline of the church, and in the improvement of its revenues. In purſuance of the firſt of theſe meaſures he aboliſhed the fee-farms that were charged on the lands of the church; in accompliſhing the ſecond, it was his object to effect a more entire union between the churches of Ireland and of England, and for this purpoſe he obtained a canon in the convocation, holden at that time, which expreſſed an approbation of the 39 articles of the Engliſh church, and which denounced excommunication againſt thoſe who affirmed, that "any of them are in any part ſuperſtitious or erroneous;" and with a view to the improvement of the revenues of the church, he adopted various means, which, in the ſpace of four years, gained an acceſſion to them, of 30 or 40,000l. a year. In the conduct and execution of theſe meaſures, however, he excited much oppoſition and obloquy, and he incurred the charge of being inclined to popery and arminianiſm. In March 1640-41, articles of high-treaſon were exhibited by the houſe of commons to the houſe of lords in Ireland againſt him, and ſeveral of the miniſters of ſtate, in which they were charged with a conſpiracy for ſubverting the fundamental laws of the kingdom, and for introducing an arbitrary and tyrannical form of government. Inſtead of ſecuring himſelf by flight, agreeably to the advice of his friends, he determined to repair to Dublin, and to appear before his enemies in the parliament houſe, where he was arreſted, and from thence conveyed to priſon. After a rigorous examination, in the courſe of which he cleared himſelf from all ſelfiſh and ſiniſter views in recovering the patrimony of the church; and when his accuſers were proceeding to fix upon him the charge of ſubverting the laws of his country, he obtained, by the interpoſition of the primate Uſher, then in England, a letter from the king to ſtop the proſecution of the ſuit. Accordingly he was ſet at liberty, though not publicly acquitted. Finding it unſafe to reſide at Londonderry, he removed to England; and ſettled in Yorkſhire, where, by his influence and activity, he did great ſervice to the royal cauſe; but, after the battle of Marſton-moor, when the king's affairs became deſperate, he embarked with ſeveral perſons of diſtinction for Hamburgh, in 1644; and from thence he went to Bruſſels, where he moſtly reſided, and exerciſed his miniſtry till the year 1648. In that year he viſited Ireland, but was ſoon obliged to withdraw again to the continent; and he remained abroad until the reſtoration. Upon this event he was recompenſed for his loyalty, by being tranſlated, in January 1660, to the archbiſhopric of Armagh, the primacy and metropolitan ſee of Ireland. Soon after his promotion he viſited his dioceſe, and by prudence, moderation, and firmneſs, allayed the diſcontents that prevailed in it, removed ſeveral prejudices that were very generally entertained, both againſt himſelf and the church, and gained over many adherents to the cauſe of conformity. In the parliament of 1661 he was choſen ſpeaker of the houſe of lords; and as a further evidence of the high eſtimation in which his character was held, both houſes concurred in expunging from their records every charge both againſt himſelf and the earl of Strafford. In this parliament he alſo obtained many ſubſtantial advantages for the church. Whilſt he was meditating other plans for the benefit of the church and its miniſters, he was diſabled from proſecuting them by a ſecond ſtroke of the palſy; and this was ſucceeded by a third fit, which terminated his life, in June 1663. His works were collected and reprinted at Dublin in 1667, in one volume, folio, which was divided into four ſeries or parts. The *firſt* contains his diſcourſes againſt the Roman Catholics; the *ſecond* conſiſts of various pieces againſt the Engliſh ſectaries; the *third* includes his writings againſt Mr. Hobbs, which have been deemed very valuable; and the *fourth* comprehends his controverſies about the Sabbath and the Lord's day, ſingle ſermons, and occaſional tracts. Mr. Granger obſerves, "that Dr. Bramhall was one of the moſt learned, able, and active prelates of the age in which he lived, an acute diſputant, and an excellent preacher." Although his conduct in the Iriſh convocation of 1634 be not entitled to any very extravagant applauſe, and the latter part of the canon, which is ſaid to have been procured by his arguments, be totally inconſiſtent with a proper reſpect for free inquiry, or any juſt ſentiments of religious liberty; and although he coincided in many reſpects with Laud, and more eſpecially in his principles of civil government, he poſſeſſed much greater moderation in religious matters. The temper and prudence, likewiſe, with which he conducted his deſigns, for the intereſt of the eſtabliſhed church, were far ſuperior. Whilſt he approved himſelf a firm friend to the church of England, he manifeſted a great degree of charity towards perſons of different perſuaſions; and, accordingly, he diſtinguiſhed between articles neceſſary for peace and order, and thoſe that are neceſſary for ſalvation; often declaring, "That the church was not to be healed but by general propoſitions." Biog. Brit.

BRAMICIDE, the crime of killing a Bramin, reputed in the Eaſt Indies one of the five moſt enormous ſins.

BRAMINS. See BRACHMANS.

BRAMNEE, in *Geography*, a river of Hindooſtan which runs into the bay of Bengal, 40 miles S. of Balaſore.

BRAMPOUR. See BURHAMPOUR.

BRAMPTON, a market town in Cumberland, England, is ſituated in a deep and narrow vale, 311 miles N.W. from London. Camden ſuppoſes it to have been the Roman Bremeturacum, "where the Cuneus Armaturarum were in garriſon on the decline of the Roman empire;" and from its general appearance, it ſeems to have been of much greater importance than at preſent. At the eaſt end is a vaſt conical mount, called the Moat or Caſtle-hill; which is about 360 feet in perpendicular height, and its acclivity very ſteep. Near the ſummit are a trench and rampart, which entirely ſurround the hill, the crown of which has been formed into a plain, about forty paces in diameter, and defended by a breaſt-work. Brampton principally conſiſts of one ſpacious ſtreet, irregularly built; but a few modern houſes, and a good inn, have been lately erected. Its chief ſupport are a large weekly market (Tueſday), and two annual fairs, for which the grant was obtained in the reign of Henry the third, by Thomas de Multon, lord of Gilſland. The houſes are 346, and the inhabitants 1682, who are not well employed, there being no manufacture of any extent in the town: it appears, however, to be improving; and a railed waggon-way, which the earl of Carliſle has lately made from his collieries at Tindalefell, will probably conduce to the augmentation of its trade. Religious worſhip is performed in a chapel, which was conſecrated in 1789, having been built with the materials of the church, which ſtood about a mile from the town, on a bold eminence, near the banks of the river Irthing. The chancel yet remains, and the burial-ſervice is generally read there, moſt of the inhabitants preferring to be interred in the ground that had entombed their anceſtors.

About two miles diſtant, on the face of a rock overhanging the river Gelt, is the celebrated Roman inſcription, noticed by Camden, and almoſt every antiquary ſince his time. The rock is of an angular form; and, from its expoſed ſituation, the letters have been partially obliterated, but leſs ſo than could have been expected from the ſtorms of fifteen centuries.

Near the junction of the rivers Irthing and Gelt is Edmond-Caſtle, the ſeat of Thomas Graham, eſq. beautifully ſituated, but greatly improved by the plantations, and other taſteful and judicious alterations of the preſent proprietor. Near this manſion, on a riſing ground, is a mound of earth, called Caſtle-Hill, raiſed about twelve feet from the adjacent land, hollow on the top, and upwards of thirty yards in diameter. Between one and two miles north-weſt from Edmond-Caſtle, is Watchcroſs, the fourteenth ſtation ad lineam Valli, and ſuppoſed to have been the Aballaba of the Notitia. It is ſituated on the ſummit of an eminence, of an eaſy aſcent, and commanding a very extenſive proſpect. On the ſouth ſide are ſeveral irregular lines and breaſt-works, and the ſite of the Prætorium is ſtill diſtinct. The military way, which generally accompanied the Prætenturæ, runs in this part of the county at ſome diſtance, in order to avoid the marſhes and bogs through which both the walls of Severus and Hadrian were carried. Its comparative direction, therefore, from Carr-voran to Stanwix, is that of a ſtring to a bow; and hence it paſſes this ſtation, which is ſeveral hundred yards ſouth of the wall.

BRAMSCHE, a town of Germany, in the circle of Weſtphalia, and biſhopric of Oſnabruck, on the Haſe; 5 miles S.W. of Vorden.——Alſo, a town in the circle of Weſtphalia, and county of Lingen; 5 miles S.S.E. of Lingen.

BRAMSTEDT, or BRAHMSTEDT, a town of Germany, in the circle of Lower Saxony, and duchy of Holſtein, ſituated on the river Bram, and having near it a medicinal ſpring diſcovered in 1681; 21 miles N. of Hamburgh.

BRAN, the ſkins or huſks of corn, eſpecially wheat, ground, ſeparated from the farina or flour, by a ſieve or boulter.

Of wheat bran it is that ſtarch-makers make their ſtarch, which is nothing elſe but the fæcula remaining at the bottom of the veſſels, wherein the bran has been ſteeped in water.

Bran is held detergent, and, on that account, is of ſome medicinal uſe in gargariſms and glyſters. It is alſo a chief ingredient in the compoſition of cataplaſms. Some apply it hot againſt the pleuriſy; boiled, it purges ſcurf and dandriff, and cleanſes the hands in lieu of ſoap. Among the ancients, it was alſo uſed as an erotic, to excite love.

Bran has been given to horſes; but it has been obſerved that thoſe of bakers and mealmen, which have principally ſubſiſted on this article, with the addition of a few ſplit beans or peas, have become purſive and thick-winded, then aſthmatic, and laſtly, dull, heavy, and inactive; and when they have died at 9 or 10 years old, a large ball, or mealy concretion, of different ſizes in different ſubjects, has been found in the ſtomach and inteſtinal canal, impenetrably hard, and about 10 or 12 pounds in weight. However, bran, though an improper food for horſes in its dry ſtate, is an uſeful ingredient in maſhes with meal, and ſerves to prevent the ſatiating richneſs of that article alone; and alſo in common maſhes with oats, when a horſe is under a courſe of phyſic; and with a proper impregnation of honey in the maſhes for colds, during the ſeverity of the winter ſeaſon. Taplin.

Dyers rank bran in the number of non colouring drugs; becauſe it yields no colour of itſelf. It ſerves for the making of their ſour waters, uſed in preparing ſtuffs to take the dye. This water is made by boiling wheaten bran, and into the decoction putting a little leaven.

BRANA, in *Ancient Geography*, a town of Spain, in Bœtica. Pliny.

BRANAW, in *Geography*, a town of Bohemia, in the circle of Konigingratz, in which is a manufacture of coloured cloth; 11 miles N.W. of Glatz, and 29 N.E. of Konigingratz.

BRANCA URSINA, J. Bauh. in *Botany*. Bear's breech. See ACANTHUS.

BRANCA *Urſina Germanica*, J. Bauh. See HERACLEUM *Sphondilium*.

BRANCA, in *Geography*, a ſmall iſland in the Atlantic, being one of the Cape de Verd iſles, near the coaſt of Benin, in Africa.

BRANCA, in *Middle Age Writers*, the paw, or extreme part of the foot of a wild beaſt, or bird of prey. Du Cange.

BRANCA, or BRANCHIA, alſo denotes a right of lopping or cutting off branches of trees in the foreſt for firing. Du Cange.

BRANCALEO, JOHN FRANCIS, in *Biography*, a Neapolitan phyſician, publiſhed, in 1534, "De balneis, quam ſalubria ſint, tum ad ſanitatem tuendam, tum ad morbos curandos. Dialogus adverſus neotericos." Rome, 8vo. He defends bathing againſt the objections of his cotemporaries, on the authority of Galen, and from his own experience recommends the practice in intermitting fevers, and as an aſſiſtant in the cure of the lues venerea. He reproves his brethren for their too frequent uſe of purgative medicines, the common reſource, at that time, againſt moſt diſeaſes. The work has been ſeveral times reprinted. Haller Bib. Med. Pract.

BRANCALEONE, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Calabria Ultra; 9 miles S.E. of Bova.

BRANCAS, ST. a town of France, in the department of the Indre and Loire; 4 leagues S. of Tours.

BRANCH, in *Botany*. Branches are the diviſions of a ſtem or trunk, which are found on many herbaceous plants, but are chiefly noticed on ſhrubs and trees. The primary branches ſpring immediately from the trunk; the ſecondary ones from the primary; and ſo on in a regular ſubordination, till they terminate in ſlender twigs. They conſiſt of preciſely the ſame anatomical parts as the trunk, and with the exception of a root, are in fact little trees, which if ſeparated from their parent ſtock, and planted in the earth under favourable circumſtances, would throw out roots, and become independent plants. They proceed from buds formed within the ſurface of the trunk which interrupt the paralleliſm of its fibres, and form knots in the wood. Theſe knots afford a point of ſupport, and centre of motion to the growing branches, and are ſunk more deeply in the wood in proportion to their age.

The lower branches are often nearly parallel to the horizon at right angles with the trunk: thoſe above them make angles more and more acute, as they are placed nearer the ſummit; but theſe angles differ in different ſpecies, and in every individual tree are ſubject to numerous varieties, from the influence of external cauſes. Some branches produce only leaf, and new branch buds: others produce only flower buds. The former are ſmooth in their ſurface, pliable and tough, with cloſe ſtraight fibres, eaſily ſeparable from each other: the latter are wrinkled at their baſe, have their fibres leſs compact, and break ſhort when ſtruck. There are alſo branches which pierce the bark without a bud, and form what is commonly called falſe wood. Theſe, as they are often luxuriant in their growth, and rob the more uſeful branches of their due nouriſhment, are carefully pruned away by the ſkilful planter and horticulturiſt. They have a rough bark, and produce only a few blackiſh buds.

BRANCH, in *Vegetable Anatomy*. Almoſt every plant or tree, when arrived at a certain period of its growth, exhibits at its ſuperior part, more or leſs of a divided or ramified appearance. The mode of increaſe by means of branches has been obſerved ſo generally amongſt vegetables, that it was formerly conſidered the excluſive diſtinction of that claſs of beings; but it is now well known that a numerous tribe of animals multiply themſelves by branches, and therefore this mode of propagation is not quite peculiar to the vegetable kingdom.

On a ſuperficial inſpection, the branches appear as ſo many diviſions and ſub-diviſions of the tree, in the formation of which the main trunk is diſpoſed of or expended; but a more accurate examination proves, that the trunk loſes none of its ſubſtance in the production of the branches; that both trunk and branches take their origin, and continue to increaſe preciſely in the ſame manner; that, in fact, every branch ſhould be conſidered as a leſſer trunk, differing only from the parent ſtem, in the circumſtance of not deriving its ſuſtenance immediately from the earth.

The branches are the product of the buds in which they enjoy, for a certain period, a ſpecies of fœtal exiſtence, as the embrio of the trunk did originally in the ſeed. See the articles SEED, FRUIT, TRUNK, BUD, and BULB.

The kind of attachment which continues to ſubſiſt between the trunk and the branches affords additional proof of the individuality of the exiſtence of the latter: although the external form of a tree would lead to the ſuppoſition, that the branches were formed by different detachments of the faſciculi compoſing the original trunk, in the ſame manner as one ſeparates into ſeveral portions the fibres of a rope; yet, to exhibit the contrary, it is only neceſſary to make ſome ſections of the branches where they are implanted into the trunk. Thus, ſuppoſe a tree, which divides into two primary branches, be cut tranſverſely about a foot above the bifurcation, the ſection will be found to repreſent that of two diſtinct trunks, each compoſed of concentric circles of woody fibres. (See *Plate* II. in *Vegetable Anatomy*, *fig.* 1.) If a tranſverſe ſection be then made of the ſame branches, at the place where they firſt appear to ſeparate from the trunk, the concentric layers correſponding to each branch will be perceived as before, but they will be found ſurrounded by ſeveral circles of the woody layers belonging to the trunk. (See *Plate* II. in *Vegetable Anatomy*, *fig.* 2.) If a tranſverſe ſection be again made ſimilar to the laſt, but a few inches lower down, the circles of woody layers which compoſe the branches will be ſeen diminiſhed in number and ſize, while the concentric layers of the trunk have become in the ſame proportion more numerous. (See *Plate* II. in *Vegetable Anatomy*, *fig.* 3.) If, laſtly, ſimilar ſections to theſe deſcribed be repeated at ſhort diſtances from each other, it will be found, that the number of woody circles which appertain to the branches, continue regularly to decline, in proportion as the ſections are performed lower upon the tree, until they diſappear altogether, there being at laſt exhibited only the appearance of the divided circles of the layers of wood, which conſtitute the main trunk. The connexion of the branches with the trunk is, therefore, by means of a cone, of which the apex is directed towards the centre of the tree, and the baſe correſponds with the ſuperficies. *Fig.* 4. of *Plate* II. in *Vegetable Anatomy*, repreſents the arrangement of the ligneous fibres, by means of which the origin of the branches is rendered of a conoid form.

When a branch is forcibly torn from the ſtem, it is commonly obſerved to bring with it a portion of a cone or pyramid, which leaves a correſponding depreſſion at the part from whence the branch has been removed. This ariſes from the woody fibres being moſt eaſily ruptured, where they are reflected into the angle, which forms the line of junction between the branch and the trunk.

The ſmall or ſecondary branches have preciſely the ſame kind of origin and connexion with reſpect to the large or primary branches, which theſe latter have with regard to the trunk. Hence every branch may be conſidered as a parent ſtem ſuſtaining others, which in their turn give origin to new branches, and theſe again to others, as long as the vegetable continues to grow.

Branches acquire bulk by the addition of ſucceſſive layers of wood, in the ſame manner as the trunk. See *fig.* 5. of *Plate* II. in *Vegetable Anatomy*, which is copied from the deſign of Duhamel, to illuſtrate the growth of branches. The entire figure is ſuppoſed to repreſent a tree of four years of age, furniſhed with ſeveral branches in the order in which they might naturally occur. The woody cone, N° 1, having developed a bud towards *a*, a branch would exiſt in the fourth year poſſeſſed of four layers of wood, as repreſented by *a b*. If another bud were formed upon the ligneous layer of the ſecond year, N° 2. 2, its branch in the fourth year would be compoſed of three layers, as ſeen in *c d*. Admitting further, that in the third year a bud was produced from the branch *a b* towards *f*, a little branch would be formed which could only have two layers; and laſtly, if in the fourth year, when the ligneous layer N° 4. 4, is depoſited, another bud were to grow towards *g*, the branch to which it would give origin would be made of only one layer of woody fibres, as ſhewn by *g h*. Thus the number of woody layers which compoſe any branch being aſcertained, its age becomes known, and the relation which this bears to the age of the parent trunk is diſcovered by finding the woody layer upon which the apex of the ligneous cone of the branch is implanted; or, in other words, obſerving the point where the paralleliſm of the longitudinal fibres of the trunk is firſt interrupted.

It is aſſerted by Parent, "Hiſtoire de l'Academie," 1711, that the branches are nouriſhed by the pith or medulla, but nothing can be more erroneous: the medulla of the branch does not even communicate with that of the trunk, although the ligneous cone of the branch is moſt frequently implanted upon the innermoſt layer of the woody fibres, or thoſe which immediately incaſe the medulla.

Du Hamel has remarked, that the longitudinal fibres, whether woody or cortical, take the direction of the chief current of the ſap: thus, if the ſap be propelled in the direction of the trunk, (which happens when either the branches have been originally inconſiderable, or have been early lopped off,) the cortical and woody fibres preſerve nearly a perpendicular poſition, only ſeparating to give paſſage to the branches and immediately after recovering their paralleliſm. (See *Plate* II. in *Vegetable Anatomy*. *Fig.* 6. exhibits a portion of a thick trunk, from the ſide of which had proceeded a ſmall branch. If a large branch ariſes from a trunk, it neceſſarily attracts a great portion of the ſap, and, in this caſe, the inclination of the cortical and woody fibres is obliquely towards that branch, as it is repreſented by *fig.* 7. of *Plate* II. in *Vegetable Anatomy*. This effect is ſtill more remarkable in trees, which have been topped immediately above the origin of a young branch; for then, all the ſap being obliged to paſs towards the branch, the fibres purſue the ſame direction, and hence, if a tree be examined in the ſpring, after having been thus deprived of its top the preceding winter, the new ligneous fibres will be obſerved to croſs the others, as appears in *fig.* 8. of *Plate* II. in *Vegetable Anatomy*.

The courſe of the ligneous fibres determines the nature and quality of what is called the *grain* of wood. In proportion as the fibres preſerve the parallel direction the grain is ſmooth and equal, and the wood tractable in the hands of the workman, and accordingly thoſe trees which furniſh but few or ſmall branches, ſuch as the different *firs*, are moſt uſed in carpentry: whilſt *mahogany* and ſeveral *fruit-trees* are preferred for making furniture, on account of the various diſpoſition of the fibres, and the number of large knots, which produce the beautiful diverſity of colours obſerved in theſe woods.

The branches occaſion that appearance in wood, known by the name of a *knot:* the longitudinal fibres being diverted from their courſe, and ſubjected to compreſſion, at firſt by the eruption of the bud, and afterwards by the growth of the branch, acquire a degree of ſolidity and compactneſs unlike any other part of the vegetable body. The ligneous cone of the branch itſelf generally acquires more or leſs of the knotty texture; the converſion of the origin of the branch into a knot is influenced however by ſeveral accidental circumſtances, the habit of the tree, &c. which are pointed out in another place. See KNOT.

The branches of the vegetables with one ſeminal leaf differ from the dicotyledons in this particular, that they are not produced by buds, but by the longitudinal fibres turning aſide, and prolonging themſelves in a diagonal courſe, until they penetrate the bark.

After the deſcription which has been given of the origin and growth of the branches, it is almoſt unneceſſary to add, that they poſſeſs the ſame anatomical ſtructure as the trunk; all the parts which compoſe the one are met with in the other, and are diſpoſed with perfect ſimilarity in each, as the epidermis, the parenchyma, the cortical layers, the wood, and the medulla.

The form of the larger branches is moſt frequently cylindrical, but the ſlender ones have ſeveral ſides, or exhibit in the tranſverſe ſection more or leſs of a polygon figure. The ſection of the branches of the *alder* and the *orange-tree* is triangular, that of the *Virginian poplar* is ſquare, and in the *plum-tree* and *willow* it is pentagonal.

The general appearance of a vegetable, which botaniſts have termed the *habitus*, depends chiefly upon the poſition which the branches and their ramifications obtain with reſpect to each other, and the different directions they aſſume. The branches like the leaves ariſe in various orders: ſometimes they are oppoſed to each other, as in the *hazel*, *oak*, and *coffee trees*; at other times they ſucceed one another alternately, as in the *pear* and *apple trees*, &c. They are arranged in a circle round the ſtem in the *protea argentea*: in ſome inſtances the branches are widely ſcattered on the tree, while in others, they are ſo thickly ſet, that they conceal from view the trunk and one another. The various ſituations of the branches depend upon that of the buds from whence they originate; and being conſtant in each ſpecies, more particularly with regard to the ſecondary branches, it furniſhes a botanical character, of which Adanſon has taken advantage. The branches, as well as the leaves, are ſtrongly attracted by the light; they avoid even the ſhade cauſed by the foliage of the adjoining branches of the ſame tree, and hence it is, that thoſe which are next the ground extend in a horizontal direction, in order to eſcape from the ſhadow of the ſuperior branches, and that the latter, in proportion as they approach the ſummit of the tree, aſſume more of an erect poſition. The leſſer ramifications obſerve a ſimilar poſition. The economy of ſome trees renders the direction of their branches ſomewhat peculiar: thus, in the *poplar*, they are nearly vertical, whilſt in the *weeping willow* they bend towards the earth, and in the *fig-tree* they are curved towards the root; but in theſe inſtances alſo the loweſt branches are ſtill the moſt prominent, in order that all may be equally and fairly expoſed to the light.

Du Hamel has made a number of experiments, to determine the proportionate thickneſs of the trunk to the primary branches, and again of theſe to the ſecondary branches: his experiments tend to prove, that the ſquares of the circumferences of the firſt branches exceed thoſe of the trunk, in the proportion of 5 to 4; and in comparing the ſquares of the circumferences of the primary and ſecondary branches, he found that the latter fell ſhort of the others in the proportion of 100 to 101 in one inſtance, and in another of nearly 50 to 51; the primary branches, therefore, not only exceed in quantity the trunk, but thoſe of the ſecond order alſo, which are nevertheleſs ſo much more numerous. Du Hamel explains this curious circumſtance, by ſuppoſing that the ſmaller branches are moſt liable to be deſtroyed, in which caſe they would not only ſuffer diminution themſelves, but their loſs would tend to make thoſe from which they ſpring more vigorous, and conſequently larger.

The Abbe Schabol diſtinguiſhes in fruit trees five ſorts of branches: the firſt kind are ſmooth on the ſurface, their fibres are ſtraight and cloſely applied to each other, but eaſily ſeparated; they are pliant, and break with difficulty; it is upon theſe branches the wood buds are found. The ſecond ſort ſuſtain the fruits; they are wrinkled at their baſe; their fibres appear to be more interwoven; they are ſuppoſed to be endowed with numerous veſſels and pores; they contain a thick ſap, and when bent are readily broken. The third kind of branches reſemble thoſe which become the wood, but are not produced from buds; they ariſe from the bark, and, as they never become hard, they are called the *branches with falſe wood*. The fourth ſet are very broad at their baſe; their bark is brown and rough; their buds are black and not numerous; theſe branches, like the laſt, are produced by the bark; they grow rapidly and ſoon periſh; they are injurious to the tree, in depriving more uſeful branches of their due proportion of nouriſhment. The fifth ſort are ſmall branches which abound upon unhealthy trees; they exhauſt feeble trees, and are uſeleſs upon the moſt vigorous; they die before they acquire any magnitude.

There is a remarkable relation between the branches and the roots; upon theſe parts mutually depend the aſcent and deſcent of the ſap; they muſt, therefore, act in harmony and in proportion to each other: hence, if a tree be deprived of ſome of the principal branches the correſponding roots periſh; or, if the ſmall branches be clipped to form the tree into any particular ſhape, the roots gradually aſſume the ſame figure; if the ſummit of the trunk be cut off, the lateral branches become more vigorous; in the ſame manner the lateral roots acquire ſtrength, by the removal of the extremity of the principal root. The fine fibres of the root periſh at the fall of the leaf; and laſtly, experiment has ſhewn, that the tops of the branches, when covered with the earth, will produce roots; and that the roots, when expoſed to the air, will put forth leaves.

BRANCH, in *Mythology*. Anciently branches were carried in the hands at the proceſſions and ceremonies of the gods; whence the *thallophori*, or branch bearers. The Theſpians adored a branch. The olive-branch was the ſymbol or enſign of peace. The natives of the iſlands of the South Seas uſe green boughs, &c. for the ſame purpoſe at this day.

BRANCH is alſo applied to the parts or ramifications of divers other bodies, which, in reſpect hereof are conſidered as ſtems. Thus chemiſts ſpeak of the branches of their metalline vegetation, branches of the *arbor Dianæ*, *arbor Martis*, &c. Phil. Tranſ. No. 286. Mem. Acad. Sc. 1692. 1710.

BRANCH, in *Anatomy*, denotes a diviſion of a vein, artery, or nerve. All the veins in the body are only branches of the *vena cava*.

BRANCH is alſo uſed in the *Military Art*, in ſpeaking of trenches, mines, and their ſeveral ducts, ways, returns, and the like, between one well and another. See GALLERY.

BRANCH is alſo uſed in ſpeaking of the veins in mines of gold, ſilver, or other metals, which divide like the veins in the body.

BRANCH in *Genealogy*, is applied to the ſeveral lines or ſucceſſions ariſing out of the ſame ſtock or origin. In which ſenſe, branches amount to much the ſame with cadets.

BRANCH alſo denotes a complex metalline kind of candleſtick, contrived for the reception of a number of candles. Theſe in ancient writers, are called *phari*, *cantharæ*, *jeſſe*; when made of glaſs *luſtres*, the richer ſort, *girandoles*.

BRANCH *of the trenches*, in *Fortification*. See BOYAU.

BRANCH-*ſtand*, in *Falconry*, ſignifies to make a hawk leap from tree to tree, till the dog ſprings the partridge.

BRANCH, in *Scripture*, is an appellation peculiarly given to the Meſſiah, as being of the branch or houſe of David.

BRANCHES *of vaults*, are ſometimes uſed to denote the arches of them.

BRANCHES *of arches*, denote ſeveral portions of arches ſpringing all from the ſame ſummer.

BRANCHES *of ogives*, in *Architecture*, the reins or arches of Gothic vaults; which traverſing from one angle to another, diagonal-wiſe, form a croſs between the other arches which make the ſides of the ſquare, whereof thoſe arches are diagonals.

BRANCHES *of a bridle*, in the *Manege*, are two crooked pieces of iron which ſupport the mouth-bit, the chain, and the curb: and which are faſtened on one ſide to the headſtall, on the other to the reins; ſerving to keep the horſe's head under command.

What way ſoever the branches of the bit incline, the horſe's mouth goes to the contrary. The duke of Newcaſtle is very particular on the head of branches; explaining their ſeveral kinds and their effects, which are reducible to thoſe of a lever. The branch is always to be accommodated to the deſign, either of bringing in, or raiſing a horſe's head, and to the neceſſary degree: accordingly, we have ſtrong and hardy branches, gentle branches, rude branches, &c.

With regard to their form and ſtructure, branches are either ſtrait, in form of a piſtol, for young horſes to form their mouth; or, after the conſtable of France's faſhion, for horſes that already carry the head well: others are in a form of a gigot, or leg; others of a bent knee; others in the French faſhion, &c.

Theſe are the laws in the *Manege:* 1. That the farther the branch is from the horſe's neck, the more effect it will have. 2. That ſhort branches, *cæteris paribus*, are ruder, and their effects more ſudden, than thoſe of longer. 3. That the branch is to be proportioned to the length of the horſe's neck.

That part of the branch of a bridle, whereby we judge of its effects, and which diſcovers its ſtrength or weakneſs, is called the *line of the banquet*. A ſtrong and hardy branch is that whoſe ſevile-hole, at the lower end of it, is placed on the out-ſide of the line of the banquet. A gentle branch is that, the ſevile-hole of which is ſet on the inſide of the ſaid line. A rude and hardy branch will bring in a horſe's head, proportionably as it is more or leſs hardy; whereas a gentle branch, by diminiſhing the effect of the bit mouth, makes a horſe more eaſily to bear the preſſure thereof, who before could hardly endure it. See Bits.

BRANCHED *velvet*. See Velvet.

BRANCHER, among *Fowlers* and *Falconers*, denotes a young bird well fledged, which, having quitted the neſt, is not yet in a condition to fly far, or ſhift for itſelf, but ſtill keeps in the buſhes or branches about its native dwelling, where it is fed by the dam.

The branches of hawks are alſo called *ramage falcons;* thoſe of nightingales, *puſhers:* becauſe, as ſome ſay, they are thruſt out of the neſt by the old ones. Canary birds of the firſt year are called branches; when juſt flown, and unable to feed themſelves, *puſhers*.

BRANCHERY, in the *Anatomy of Vegetables*, denotes the vaſcular parts of divers fruits, as apples, pears, plums, and berries. In which ſenſe the branchery ſtands contradiſtinguiſhed from the ſkin, pulp, &c.

The branchery of an apple is only the ramifications of the ligneous body through all the parts of the *parenchyma;* the greater branches being likewiſe, by the inoſculations of the leſſer, united together. Grew. Anat. of Plants, lib. i. cap. 6. § 2.

BRANCHIA, in *Ichthyology*. See Gills.

BRANCHIADÆ, in *Ancient Geography*, a people who are placed by Quintus Curtius towards the Oxus, and by Strabo in Sogdiana, the adjacent country.

BRANCHIALE, in *Natural Hiſtory*, a name given by Mr. Lhuyd to a peculiar ſpecies of fungitæ, which being of a deeply ſtriated texture, is ſuppoſed to reſemble the gills of a fiſh.

BRANCHIDÆ, in *Antiquity*, prieſts of Apollo ſerving in his temple at Didyma, near Miletus; which was famous for its oracle. The temple of the Branchidæ, or, as it was afterwards called, of Apollo Didymæus, together with the oracle, were ſeated on the promontory called Poſideum, at the diſtance of 18 or 20 ſtadia from the ſhore, and 180 from the city of Miletus; and both are recorded as occupying this ſpot before the Ionic migration. The appellation "Branchidæ," was derived from a very noted family, ſo called, which continued in poſſeſſion of the prieſthood till the time of Xerxes, deducing its pedigree from the real or reputed founder, and original proprietor, "Branchus." Several of theſe ſacred tribes flouriſhed in Greece, and intermixed, as the Branchidæ did, fable with their genealogy; and with a view of conciliating from the people a greater reſpect for their progenitor, raiſed him far above the level of common humanity. The ſtory of the Branchidæ is too ridiculous to be recited; and we ſhall, therefore, refer, for the relation of it to Varro. By ſome, however, this name is derived from Branchus, a Theſſalian youth, beloved by Apollo, who received him into his own temple, and commanded that divine honours ſhould be rendered him after his death. Stephanus Byzantinus informs us, that this oracle was ſacred to Jupiter, as well as to Apollo; and probably both theſe deities, as well as Branchus, were honoured in this temple. Whatever be the origin of the oracle, it is certain, that it had acquired a very early and extenſive reputation at Branchidæ; and it was particularly conſulted by Crœſus, who was profuſely munificent upon theſe occaſions, dedicating his choiceſt treaſure to a vaſt amount, in the ſame manner as at Delphi.

The Perſians, under Xerxes, the ſon of Darius, afterwards deſpoiled this temple and oracle of all their wealth, and then deſtroyed it by fire. The Branchidæ, who had betrayed this temple and oracle into the hands of the Perſians, became, on the miſcarriage of Xerxes, the voluntary companions of his flight, in order to avoid the puniſhment of their treachery and ſacrilege, and ſettled among the Bactri, in a region far remote from Greece. However, the deſcendants of thoſe who had fled with Xerxes, were cruelly extirpated by Alexander the Great; thus viſiting the ſins of the fathers on the children, in a manner which will for ever reflect the greateſt odium on the memory of the perfidious tyrant, who after receiving their ſubmiſſion, put them all to the ſword, and eraſed even the veſtiges of their towns: ſo that the city remained a bare ſolitude and barren waſte.

Although the Mileſians were too much impoveriſhed and depreſſed to attempt an immediate reſtoration of their temple, after the concluſion of the Perſian war, they exerted themſelves at a ſubſequent period, not preciſely aſcertained, in rearing the fabric from its ruins; and the architects employed by them for this purpoſe, were Peonius, an Epheſian, and Daphnis, of Miletus. With what magnificence and prodigious ſpirit this new edifice was deſigned, may in ſome meaſure be inferred from its preſent remains. Strabo has termed it, "The greateſt of all temples;" adding, that it continued without a roof, on account of its magnitude. Pauſanias mentions it as one of the wonders peculiar to Ionia; and Vitruvius numbers this among the four temples which had raiſed their architects to the ſummit of renown. In this temple was the famous ſtatue of Apollo, formed by Canachus, a Sicyonian, who had been a ſcholar of Polycletus the Argive; it was carried away by Xerxes, and reſtored by Seleucus Nicanor. It is ſaid, that the oracle of this Mileſian temple became ſilent, when it was deſerted by the Branchidæ, and that it afterwards reſumed its prophetic and oracular faculties. After Paganiſm began to decline, this oracle continued in ſome repute; and the emperor Julian was very ſolicitous to reinſtate the god in the full poſſeſſion of his Ionian territory; which, however, he was conſtrained to yield up to Chriſtianity, ſoon after the death of the royal apoſtate. Strabo, Geog. tom. ii. p. 517—634—814. Pauſanias, Græc. Deſcript. p. 533. 694, ed. Kuhnii. Ionian Antiquities, by Chandler, Revett and Pars. 1769.

BRANCHIER, St. in *Geography*, a town of Swiſſerland in the Valais, ſeated near the river Drance. N. lat. 46° 5'. E. long. 7° 3'.

BRANCHING, the *ramification* or *ſprouting* of the horns of deer, &c. which bears an analogy to the vegetation of plants. Phil. Tranſ. N° 227.

The hair at the ends is apt to *branch*, or ſplit and divide into whole bruſhes, which are eaſily viſible by a microſcope.

BRANCHIOPODA, in *Entomology*, a genus of cruſtaceous inſects eſtabliſhed by late continental naturaliſts to include thoſe ſpecies of the Linnæan *cancri*, and *gammari* of Fabricius, which have four ſimple, ſetaceous, unequal antennæ; the body oblong, and deſtitute of feet, but in lieu of which each ſide is furniſhed with either a ſingle, or a double ſeries of oblong, ciliated, branchioſtegous appendages, which are formed for ſwimming; and the tail naked, jointed, long, and forked at the extremity.

The two ſpecies of this new genus, deſcribed by Herbert, Ducheſne, and Boſc, are le branchiopode ſtagnal, which is cancer ſtagnalis of Linnæus, and a ſecond ſort delineated by Herbert, called le branchiopode palludeux.

BRANCHIOSTEGA, in *Zoology*, a kind of CORYPHÆNA, having for the aperture of the gills a tranſverſe cleft, or opening. It inhabits the Aſiatic ſeas.

BRANCHIOSTEGI, in *Ichthyology*, a term employed for that natural order of fiſhes which have gills deſtitute of bony rays. The genera of branchioſtegous fiſhes are, *mormyrus*, *oſtracion*, *tetrodon*, *diodon*, *ſyngnathus*, *pegaſus*, *centriſcus*, *baliſtes*, *cyclopterus*, and *lophius*.

BRANCHUS, in *Medicine*. The hoarſeneſs which accompanies a catarrh is ſo called from ϐρεχω, to be moiſt. See CATARRH.

BRANCHUS, or *branchæ*, alſo denotes a kind of glandular tumour in the *fauces*, reſembling two almonds, which render the breathing and hawking difficult.

BRANCION, in *Geography*, a ſmall town of France, in the department of the Saone and Loire, 1½ league W. of Tournus.

BRANCO, an iſland in the gulf of Mexico, and bay of Campeachy, between cape Condecedo, or point Delgado, and Vera Cruz.

BRANCO, *de Malambo*, a town in the province of St. Martha, in Terra Ferina, S. America; ſeated on the river Magdalen, having a good harbour, conſiderable trade, and a biſhop's ſee. N. lat. 11°. 40′. W. long. 75°. 30′.

BRANCOVAN, a town of European Turkey, in the province of Walachia; 28 miles N. of Nicopoli.

BRANCOURT, a town of France, in the department of the Aiſne; 10 miles W. of Laon.

BRANCZYCE, a town of Lithuania, in the province of Novogrodek; 10 miles N. of Sluck.

BRAND, in *Agriculture*, the name of a diſeaſe to which corn, and ſome other graſſes, are ſubject. It is a ſort of fungus, which derives its nouriſhment from the vegetable. Of theſe fungi, there are ſeveral ſpecies. One of them is named by Dr. Withering (Bot. Arrang. vol. iv. p. 388.) "Reticularia Segetum;" and in a pamphlet upon Brand, by the Rev. Henry Bryant, entitled, "A particular inquiry into the cauſes of that diſeaſe in wheat commonly called Brand, &c.;" Norwich, 1783, it is called "Duſt Brand." In other places its uſual name is "Smut," or "Burnt Corn." This ſpecies is common to wheat, oats, barley, and rye. The feſtuca fluitans, and other graſſes, are alſo affected by it. It is deſtitute of ſcent, and conſumes not only the farinaceous part of the grain, but even the arillus and chaff, diſperſing itſelf entirely before the corn is cut; ſo that the injury occaſioned by it is confined to the quantity of grain deſtroyed by it, which is not very great in any ſeaſon. The ear is often affected by this reticularia before it emerges from the folium vaginans, or hoſe; but about the root there is no appearance of diſeaſe. Barley and oats are more frequently attacked by it than wheat; which circumſtance may be accounted for by the latter being uſually *dreſſed* for ſowing. Mr. Lathbury examined the duſt of this fungus under a powerful magnifier, and thus found, that it conſiſted of a number of minute particles, uniform in ſhape and ſize, much ſmaller and blacker than thoſe of the "pepper brand," and leſs eaſily ſeparable; and they ſeemed to be contained in little irregular cells. This duſt, or ſeed, is the food of a ſmall, ſhining, black dermeſtes, the "Dermeſtes ater," of Marſham. Another ſpecies which Mr. Bryant diſtinguiſhed by the name of "pepper brand," is alſo called ſimply "brand," or "bladders." This ſpecies does not eat through the arillus, conſuming only the farinaceous part of the grain. The ears affected by it are eaſily diſcovered by their external aſpect; for the chaff opens as if unnaturally diſtended, the germen becomes ſhorter and rounder, and exhibits the appearance of ſwelling, and a ſort of inflammation; the grain aſſuming in this ſtate a deep and dingy hue, eaſily breaking when rubbed, and furniſhing a ſooty powder, which ſoils the fingers, and emits a very fetid ſcent. This ſpecies is very prejudicial to the farmers; becauſe it is carried with the corn into the barn, and when broken under the flail it diſcolours and otherwiſe injures the ſample, ſo as to render it unſaleable, or to reduce its price. For the prevention of this evil, farmers generally dreſs their ſeed-wheat with various preparations: ſome uſe a lixivium of wood-aſhes and water; others, ſalt and water only, or ſea-water, when it can be eaſily procured; others, the ley from the ſoap-boilers; others again, urine and cheeſe-whey; and others, it is ſaid, have infuſed arſenic for this purpoſe. All, as Mr. Kirby believes, dry their ſeed with freſh ſlacked lime. From this practice we may infer, that the diſeaſe is ſuppoſed to originate from the adheſion of the duſt or ſeed of the brand to the ſeed of the wheat; and theſe methods are adapted for the purpoſe of waſhing it off, or deſtroying it. The ultimate cauſe of this diſtemper has been variouſly aſſigned. Mr. Bryant (ubi ſupra) ſtrenuouſly maintains, that it is occaſioned by an injury which the antheræ receive by too great conſtriction, when the ear emerges from the folium vaginans; and therefore he condemns the common practice of dreſſing the ſeed, as not only uſeleſs, but deſtructive of the grain. Some take the duſt for the eggs of inſects; and others adopt the opinion, with which Mr. Kirby coincides, that this evil is occaſioned by a minute vegetable of the order of "Fungi." Mr. Bryant's method of accounting for this diſorder, is acknowledged by this ingenious naturaliſt to be plauſible; but he conceives that it is founded upon no arguments which can convince one who is in ſearch not of theories, but of truth. From a variety of experiments made by the Rev. Peter Lathbury, F.L.S., and recited by Mr. Kirby, (ubi infra) together with other facts that occurred within his own knowledge, he concludes, without heſitation, that the practice of dreſſing the ſeed previous to ſowing, in the way above-mentioned, is a very effectual prevention of the brand.

Rejecting Mr. Bryant's hypotheſis, and alſo that of the brand's being produced by inſects, Mr. Kirby proceeds to eſtabliſh the third opinion, that the diſorder is occaſioned by a vegetable ſubſtance. The fact, eſtabliſhed by the experiments which he recites, that the duſt of brand, carried into the field with the ſeed-wheat, like other vegetables, propagates itſelf, gives (he ſays) the higheſt degree of probability to this opinion. It is further confirmed by the recital of an experiment of Mr. Lathbury, of ſowing it, as it were, upon its native ſoil (eſpecially in the caſe of wheat taken from a clean ſample), which ſeems to have occaſioned the deſtruction of three-fourths of its produce. Beſides, this duſt, when placed under a powerful magnifier, exhibits every appearance of minute ſeed. As to the manner in which theſe ſeeds vegetate and aſcend from the ſeed with the growing plant, till they reach the heart of the grain, it is a ſubject of inquiry that may be extended to a great number of the fungi, which without impropriety may be denominated "ſubcutaneous" vegetables. With regard to the brand in particular, it is ſuggeſted, as a probable conjecture, that the uncommonly minute ſeeds of this fungus may attach themſelves either to the "plumula," and ſo paſs through the air-veſſels into the plant; or elſe to the "roſtellum,"

“ roſtellum,” which ſeems moſt likely ; and in that caſe they may be propelled through the ſap-veſſels with the ſap, till they at length arrive at their final ſeat, the heart of the germen. See obſervations upon certain fungi, which are paraſitics of the wheat, by the Rev. William Kirby, F.L.S. in the Linnæan Tranſactions, vol. v. page 112, &c.

Brand, in *Geography*, a town of Germany, in the circle of Erzgeberg, chiefly inhabited by miners ; 2 miles S. of Freyberg.

BRAND-Sunday, *Dimanche des Brandons*, in *French Eccleſiaſtical Writers*, denotes the firſt Sunday in Lent ; which is thus called on account of an ancient practice in the Lyonnois, where the peaſants, in the night of this day, walked about their orchards, gardens, &c. with torches lighted, or fire-brands in their hands ; in which plight they viſited every tree, and addreſſing themſelves to them one after another, threatened that if they did not bear fruit well the enſuing ſeaſon, they ſhould be cut down to the ground and burnt. This is evidently a relic of paganiſm ; the like of which was practiſed by the ancient idolaters in the month of February ; hence called *Februarius, à februando.* Meneſtr. Hiſt. de Lyon. p. 279. Menag. Orig. p. 126. & Du-Cange Gloſſ. Lat. tom i. p. 610.

BRANDAN, in *Geography*, a town of the Eaſt Indies, in the iſland of Java, belonging to the king of Sourahaya.

BRANDANO, a river of Italy, which runs into the gulf of Tarento, 10 miles S. of Caſtellanetta, in the kingdom of Naples.

BRANDARIS, in *Conchology*, a ſort of Murex, common in the Mediterranean and Adriatic ſea. The ſhell is ſomewhat ovate, and ſurrounded with ſtraight ſpines ; beak moderately ſubulate, ſtraight, and obliquely ſurrounded with ſpines. Gmelin, &c.

Many varieties of this ſhell are deſcribed by writers ; generally the colour is white, whitiſh, cinereous, or brown, with a triple row of ſpines, or ſometimes with only a ſingle row.

BRANDEIS, in *Geography*, a town of Bohemia, in the circle of Konigingratz, ſeated on the river Orlitz ; 21 miles S. E. of Konigingratz.

BRANDEL, Peter, in *Biography*, a painter of portrait and hiſtory, was born at Prague, in 1660 ; and having ſpent about four years in the ſchool of John Schroeter, principal painter at that court, a kind of jealouſy of his riſing merit was excited in the mind of his maſter, ſo that Brandel reſented the ill-treatment. He removed from him; and at the age of about 19 years, quitted his ſchool, and commenced a maſter himſelf. Moſt of the churches at Prague and Breſlau are embelliſhed with his works ; and the prince of Hazfeld is ſaid to have given 100 ducats for one picture of St. Jerome at half length. He ſpent moſt of his time at Prague, where the wealth which he acquired was diſſipated by profuſion and irregular conduct ; ſo that he died poor, and was buried by charitable contributions. The Jeſuits and monks, however, honoured his memory by appointing for him a ſolemn funeral proceſſion, in which 300 tapers of wax were carried by eccleſiaſtics. Brandel was diſtinguiſhed by a ready invention, an expeditious manner of painting, and natural colouring, except that his ſhadows were ſometimes too black. His pencil was broad, eaſy, and free. Pilkington.

BRANDEN, *in Geography*, a bay lying on the eaſt coaſt of China, in the Indian ocean, north of Harling's bay.

BRANDENBURG, Mark, or Marquisate of, a country of Germany, bounded on the north by Mecklenburg and Pomerania, on the eaſt by Poland, on the weſt by the duchies of Magdeburg and Lunenburg, and on the ſouth by Sileſia, the Luſatias, the electorate of Saxony, the principality of Anhalt, and part of the duchy of Magdeburg. Its greateſt extent from weſt to eaſt is about 200 miles, and from north to ſouth about 110 miles. The country is generally level, and the ſoil ſandy and barren, but by the induſtry of the inhabitants rendered productive of ſeveral ſorts of grain. They find, however, that the only very profitable crop upon theſe ſands is buck-wheat, which they ſow in large quantities, and which yields a product equal to that of the beſt ſoils applied to that grain. When a piece of land has been managed with greater care than ordinary, it will yield a good crop of rye ; but wheat and barley are rarely to be ſeen. In ſome parts the inhabitants cultivate millet and flax ; in other parts, potatoes and turnips ; and again in others, tobacco and woad for dyeing. By various improvements of modern times, the waſte lands and the large moraſſes, which have been drained, are become fertile. From their woods they derive an ample ſupply of fuel for their domeſtic uſe, and for their glaſs and iron furnaces, charcoal, tar, wood-aſhes, and large quantities of timber for houſe and ſhip-building, part of which is exported to Hamburg, Holland, France, and other places. Their breed of cattle, and eſpecially their ſheep, are objects of particular attention ; from the latter they are ſupplied with wool, which has enabled them to eſtabliſh ſeveral woollen manufactures ; and with a view to the improvement of their breed of ſheep, king Frederic II. cauſed rams to be imported from France and England. The culture of ſilk is alſo carried on with induſtry and with increaſing ſucceſs ; and beſides their ſilk and woollen manufactures, they have others of linen, cotton, and leather. At Berlin, and Potſdam in particular, they have alſo excellent painters, ſtatuaries, and engravers. By means of theſe manufactures and arts they not only preſerve in the country large ſums, but they alſo import an acceſſion from other countries to which their productions are exported. The country alſo furniſhes good clay, and fine porcelain earth, together with iron-ſtone, amber, ſalt-petre, alum, colour-earths, and medicinal ſprings. The principal rivers are the Elbe, the Oder, the Prignitz, the Havel, the Warte, the Spree, and the Doſſe. The Spree and Oder are united by a canal, begun in 1662, and finiſhed in 1668. The Havel and Oder are joined by the canal of Finow, which king Frederic II. cauſed to be begun in 1743, and completed in 1746, with thirteen ſluices. By theſe canals navigation is facilitated; and from their rivers and lakes they draw a ſupply of various kinds of fiſh. In the electoral mark they reckon 84 cities, 19 market-towns, about 1917 royal and noble villages, 2027 ancient villages, 44,749 hides of land liable to taxes, and 8421 hides of the nobility, 26,000 hearths in the towns, and 68 000 in the country, 1971 Lutheran churches, and 80 Calviniſtical churches. The population of Brandenburg, according to the ſtatement of Hoeck, conſiſts of 755,577 perſons. The ſtates conſiſt of the nobility and towns, whoſe houſe of aſſembly is in the Spandau ſtreet at Berlin, and who ſtill enjoy ſome ſmall remains of their ancient privileges. The hereditary offices of the marquiſate are, a marſhal, chamberlain, cup-bearer, purveyor, ſewer, treaſurer, and ranger. The religion of the country is Lutheran, which was adopted by Joachim II., elector of Brandenburg, in 1539 ; but the king of Pruſſia, who is alſo elector of Brandenburg, and thoſe of his court, are Calviniſts. The churches of both perſuaſions are well endowed ; and the laity jointly employed by the government. The Roman catholics are alſo tolerated ; and every inhabitant enjoys liberty of conſcience and a free exerciſe of his religion. For the education of youth, and the advancement of learning, this electorate, beſides Latin ſchools and gymnaſia in ſeveral places, has an univerſity at Frankfort on the Oder, and an academy of ſciences at Berlin.

The whole country of Brandenburg is divided generally into the Electoral Mark and New Mark. The Electoral

Mark is again ſubdivided into the Old Mark, the Vor-Mark, or Mark of Prignitz, the Middle Mark, and the Ucker Mark.

The *Old Mark*, extending from eaſt to weſt about 9 German miles, and from north to ſouth about 11 miles, is ſeparated, towards the eaſt, by the Elbe from the Prignitz and the duchy of Magdeburg, and bounded alſo by the latter to the ſouth and likewiſe, in part, to the weſt, but in other parts by the duchy of Lunenburg. It contains 13 cities, of which the capital is Stendal. Its taxable lands are 8058 hides.

The *Vor-Mark*, or *Prignitz*, is terminated by the Elbe and Havel, the duchy of Mecklenburg, and the circles of Ruppin and Havelland in the Middle Mark, and is 10½ German miles in length, and 7½ in breadth. It contains 20 towns, the principal of which is Perlberg. The hides of land that pay taxes are 5211.

The *Middle Mark* is bounded by the Prignitz, the duchies of Magdeburg, and the electorate of Saxony, the Lower Luſatia, the New Mark, the Ucker Mark, and the duchy of Mecklenburg. The moſt fertile part lies near the Oder, in the circles of Havelland and Ruppin; the marſhes having been drained, and the inhabitants cultivating millet, madder, and buck-wheat, producing alſo wine, and breeding ſilk-worms, and having manufactures of alum and vitriol, and ſome medicinal ſprings. Among its cities and towns, which are reckoned 48, the chief are Berlin, Brandenburg, and Potſdam; and its hides of taxable land are 24,901.

The *Ucker Mark* terminates to the ſouth and weſt on the Middle Mark and the duchy of Mecklenburg, from the latter of which it is principally ſeparated by the Havel; and to the north and eaſt on Pomerania and the New Mark, being moſtly ſeparated from the former by the Welſe and Rando, and from the latter by the Oder. Its greateſt extent is about 13 German miles in length, and 11 in breadth. This province was anciently called the Ucker, or Uckerland, from the river and lake of that name; and the title of the Ucker Mark was firſt applied to it towards the latter end of the 15th century. If we except a narrow ſlip, which runs along the Middle Mark, from the frontiers of Mecklenburg towards the Oder, it conſiſts of a very good ſoil, which, by the induſtry of the inhabitants, has been ſo much improved, that the province annually exports great quantities of grain, and more particularly ſupplies Berlin. It alſo produces a great number of ſheep, fruit, honey, hops, and tobacco. The inhabitants are Lutherans, but not without a mixture of French and German Calviniſts. The whole territory is divided into the two circles of Ucker-Mark and Stolp, and contains 15 towns, of which the capital is Prenzlo. The hides of land that are taxable are 6379.

The *New Mark* is a long narrow tract of land, ſeparated to the weſt from the Middle and Ucker Marks by the Oder, terminating to the north on Pomerania, and eaſtward on Pomerania, Poland, Sileſia, and the Lower Luſatia, and extending about 40 geographical miles in length, and in breadth 10 miles. Although the ſoil is generally ſandy, this province has ſome good corn lands, and near the rivers luxuriant paſture grounds and marſhes, the graſs of which is coarſe and ruſhy. It abounds in wood, and ſupplies fruits, fiſh, and game. The incorporated circles produce wine, and yield great quantities of iron ore. The New Mark, properly ſo called, extends from the river Rega to the river Warte; and contains, according to the ſtatement of Hoeck, 279,584 inhabitants. It appears to have been in the poſſeſſion of the margraves of Brandenburg as early as the year 1257; it was transferred by Otho the Tall to the knights of the Teutonic order in 1286, but ſoon redeemed. In 1429, it was wholly ceded to the ſame order; and in 1443, the ceſſion was confirmed at Francfort, by the elector Frederic II. But in 1455, their circumſtances required the ſale of it, and it was purchaſed by the ſaid elector; and ſince that time it has remained in the houſe of Brandenburg, under the appellation of the New Mark. It has a regency of its own, courts of juſtice, and other colleges. It conſiſts of Cuſtrin, or Kuſtrin, which is the capital, ſeven original circles, and four incorporated circles. Its cities are reckoned to be 39; its hides of taxable land 16,738; and the value of the eſtates is eſtimated at one million of dollars.

The ancient inhabitants of Brandenburg are ſaid to have been the Suevi, of whom there are ſeveral ſubdiviſions. As the Romans purſued their conqueſts as far as the Elbe, about the commencement of the Chriſtian æra, they were probably acquainted with this country. However, the Vandals checked their further progreſs in this direction; but, about the fifth century, they repaired more to the ſouth, abandoning their own country to the Wendi, Veneti, or Heneti, who, being too much confined by the Viſtula, occupied the territory which the Vandals had abandoned, and, poſſeſſing themſelves of the whole country along the ſouthern ſide of the Baltic, formed there a new nation, known by the general name of Sclavi or Slavonians, who were a barbarous people of very extenſive migration, and inveterate enemies to the Chriſtian religion. With theſe the kings of the Franks, and eſpecially Charlemagne, had frequent wars, and his ſucceſſors were indefatigable in their endeavours to ſubdue them. At length, Henry, ſurnamed the Fowler, ſucceeded about the beginning of the 10th century, A.D. 927, in the conqueſt of them, and planted Chriſtianity in the country. He then conferred it on his brother in-law Sigefrid, a Saxon count, with the title of margrave or lord-warden of the marches or borders; and he, with his ſucceſſors, new-planted and peopled it from the Netherlands, Weſtphalia, Franconia, and Saxony. At firſt this title was conferred by the emperor, according to his own arbitrary pleaſure; and it did not become hereditary till the time of Albert, ſurnamed the Bear, the firſt prince of the race of Anhalt, who was made margrave by Conrad II., and afterwards raiſed to the dignity of an elector by Frederic Barbaroſſa, about the year 1100. When this family became extinct in 1332, ſeveral others ſucceeded; and, in 1373, the emperor Charles IV. aſſigned Brandenburg to his ſecond ſon Sigiſmund, who, in 1415, being then emperor of Germany, ſold this margravate and electorate to Frederic, burgrave of Nuremberg, for four hundred thouſand ducats. Frederic, the anceſtor of the preſent reigning race, received the inveſtiture of Brandenburg, in 1417, at the diet of Conſtance, from the hands of the emperor Sigiſmund, who, two years before, had conferred upon him the dignity of elector and arch-chamberlain of the holy Roman empire. This Frederic was the firſt elector of the houſe of Hohenzollern, which ſome German genealogiſts have traced to Thaſſilo or Taſſilon, who lived in the beginning of the 9th century. From Frederic the electorate deſcended, through different branches of the family, to Joachim II. who, in 1539, embraced the Lutheran religion, and who, whilſt the war of religion deſolated Saxony, and the neighbouring countries, maintained his electorate in peace; having declined to enter into the union which the Proteſtants concluded at Smalkald: nor did he agree to the interim publiſhed by the emperor Charles V. In 1618, the elector, John Sigiſmund, received from the king of Poland, the inveſtiture of Pruſſia for himſelf and his deſcendants; and reſigned the electorate in favour of his ſon, George William, who, in 1640, was ſucceeded by his ſon, Frederic William, ſurnamed the Great, born at Berlin in 1620, and educated in the camp of Frederic Henry, prince of Orange. When he came to the government, he found a deſolated country in poſſeſſion of his enemies, allies in whom he could repoſe no confidence, few troops, and almoſt no reſources of ſupplies. Nevertheleſs, he compelled the king of Poland, in 1656, to declare Pruſſia an independent ſtate, which had been formerly held of the Poliſh ſovereigns: and cloſing a reign, which has been much celebrated, was ſucceeded, in 1638, by his ſon Frederic III. born at Konigſber, in 1637, who, ſupporting the emperor in the conteſt for the Spaniſh ſucceſſion, was by him acknowledged as king of Pruſſia, in 1700, and in the following year crowned by the emperor at his native place. This elector has been uſually diſtinguiſhed by the title of Frederic I. He died in 1713; when his ſon Frederic William II. aſcended the throne. By him the city of Potſdam was founded in 1721; but he was chiefly diſtinguiſhed as the father of that great prince Frederic II. who aſcended the throne in 1740, and died in 1786, after a long and glorious reign: the moſt memorable and permanent event of which was the acquiſition of Sileſia from the houſe of Auſtria, in 1742. The ſhort reign of his nephew is well known; during which the failure of the Pruſſian tactics in France and Poland, convinced Europe, that the great Frederic had been the ſoul of the machine. However, theſe checks were counterbalanced by the completion of the Pruſſian acquiſitions in Poland. Of the reign of his ſon, the preſent monarch, it is ſufficient now to ſay, that it has been marked by caution and prudence more than by enterpriſe. See PRUSSIA.

The elector of Brandenburg poſſeſſes the ſeventh place among the electors of the empire; and in the council of the princes of the empire he has five voices. As arch-chamberlain, he carries the ſceptre before the emperor at his coronation, and brings him water to waſh with in a ſilver baſon. For the government of Brandenburg, and the adminiſtration of juſtice, there are ſeveral ſupreme colleges and tribunals.

BRANDENBURG, an ancient city of Germany, in the circle of Upper Saxony, and the marquiſate to which it gives name; ſeated on the Havel, which ſeparates the old town from the new, and the caſtle from both, and likewiſe environs the new town to the left with a particular trench, on which a ſluice has been erected. Both theſe towns have, ever ſince the year 1714, been under the government of the ſame magiſtrates; and each of them contains two churches; the number of inhabitants does not exceed 6000. It was erected into an epiſcopal ſee by the emperor Otho I. in 949, but the ſee was aboliſhed at the reformation, in 1563. Manufactures of cloth, fuſtian, and canvas have been eſtabliſhed in this place by the French Calviniſts; and the navigation of the Havel affords it a conſiderable trade. The fort appears like a ſuburb, and contains, beſides the cathedral church, and reſidences for the members of the cathedral, a riding ſchool for the inſtruction of young noblemen. The members of the chapter, which ſtill ſubſiſts, and which is compoſed of a Lutheran provoſt, dean, ſenior, ſub-ſenior, and three other canons, are diſtinguiſhed by a croſs of gold, enamelled with violet, and terminating in eight points: an honour conferred by Frederic II. in 1755. In the vicinity is a mountain, on which Henry I. in 928, erected a church in honour of the Virgin Mary, from which time the mountain had the name of "Marienberg." The church has been deſtroyed, and its ſite planted with vines. Near the old town is a lake about two German miles long. Brandenburg is 31 miles W. from Berlin. N. lat 52° 25′ E. long. 13°

BRANDENBURG, NEW, a town of Germany, in the circle of Lower Saxony, and duchy of Mecklenburg, ſeated on a ſmall rivulet, which loſes itſelf in a neighbouring lake. The town is flouriſhing, and has two churches, a grammar-ſchool, and a ſuperintendency. Hops are much cultivated in its environs; 48 miles W. of Stettin, and 60 N. of Berlin.

BRANDENBURG, a town of Pruſſia, in the province of Natangen, near the Friſche-Haff, chiefly inhabited by fiſhermen; 12 miles S.W. of Konigſberg.

BRANDERI, in *Entomology*, a ſpecies of CIMEX, that inhabits Barbary, the ſnout of which is bent; thorax ſomewhat ſix-ſpined; wing-caſes with three white dots. Gmel. —Obſ. This is of the middle ſize, griſeous beneath, teſtaceous, and has the antennæ rufous.

BRANDERIANA, a ſpecies of PHALÆNA, (*Tortrix*) deſcribed by Linnæus in Fn. Suec. The firſt wings are teſtaceous, fuſcous, and without ſpots. A native of Europe.

BRANDERIM, in *Geography*, a town of France, in the department of Morbihan; 1 league E. of Hennebond.

BRANDEUM, in *Eccleſiaſtical Writers*, a linen cloth or veil put over the tombs of the apoſtles St. Peter and St. Paul, and left there for ſome time; by which it is ſuppoſed to acquire a degree of ſanctity, ſo as to be worſhipped as a relic; and for that purpoſe frequently ſent by the pope as a preſent to ſome prince. In this ſenſe, brandeum amounts to the ſame with what was otherwiſe called *ſanctuarium*, *ſudarium*, *orarium*, and *velum*. The uſe of Brandea was introduced as a means of diffuſing and propagating the virtues and influences of relics, without moving or any way impairing the ſubſtance of them; the tranſlation of relics in early days being forbidden. Fleur. H. E. l. 35. Du-Cange, Gloſſ. Lat. t. i. p. 909.

BRANDGANS, in *Ornithology*, the name given by Cluſius and Friſch to the ſheldrake or burrough duck, *anas tadorna*, Linn.

BRANDGUTH, in *Geography*, a town in Germany, in the circle of Upper Saxony, and country of Erzgeberg; 4 miles N.E. of Lauterſtein.

BRANDHIRSCH, in *Zoology*. See CERVUS HIPPELAPHUS.

BRANDI, GIACINTO, in *Biography*, an Italian painter of hiſtory, was born at Poli, about 20 miles from Rome, in 1623, and firſt inſtructed by Algarde, and afterwards, by Giacomo Sementa of Bologna, who painted after the manner of Guido. Upon quitting the ſchool of Sementa, he became a diſciple of Lanfranc: and having exerciſed his art in ſeveral of the churches and palaces at Rome, he roſe to ſuch reputation, that he became head of a ſchool, and was made preſident of the academy of St. Luke. He obtained the patronage of ſeveral perſons of rank, and eſpecially that of the pope, who created him a knight of the order of Chriſt; but leſs attentive to fame than fortune, and more remarkable for avarice than excellence, although he had a lively genius and free pencil, he was often very incorrect, and his colouring was feeble. He ſeldom aſſociated with perſons of his own profeſſion, of whom he generally expreſſed an unfavourable opinion; but took pleaſure in low company, diſſipating by profuſion and pleaſure the wealth which his induſtry acquired. He died in 1691. His works are chiefly at Rome, Verona, Milan, and Gæta. The daughter of this painter was married to the celebrated Roſa da Tivoli, of whom Giacinto conceived a mean opinion, becauſe he painted only beaſts. By this contemptuous behaviour Roſa was ſo incenſed, that he collected all the clothes belonging to his bride, on the morning after marriage, and ſent them back to her father with a meſſage, "that his daughter's perſon was fortune enough to make her huſband happy; and that a good painter of beaſts was as likely to become rich, as a bad painter of men." Argenville. Pikington.

BRANDING *in the face* or *hand*, denotes a puniſhment inflicted by law on various offences, by burning with a hot iron, after the offender has been once admitted to benefit of clergy.

By 4 Hen. VII. c. 13, a diſtinction was eſtabliſhed between mere lay ſcholars, and clerks in orders, by directing, that alſo laymen, who are allowed the privilege of clergy, ſhould be burnt with a hot iron in the brawn of the left thumb. This diſtinction, however, was aboliſhed for a time by 28 Hen. VIII. c. 1, and 32 Hen. VIII. c. 3, but it is held to have been virtually reſtored by 1 Edward VI. c. 12. After this burning, the laity, and before it the clergy, were diſcharged from the ſentence of the law in the king's courts, and delivered over to the ordinary to be dealt with according to the eccleſiaſtical canons. But the trial in the eccleſiaſtical courts, and conſequent purgation, were attended with ſuch perjuries and abuſes, that the ſtatute 18 Eliz. c. 7. enacts, that after the offender has been allowed his clergy, he ſhall not be delivered to the ordinary; but, upon ſuch allowance and burning in the hand, he ſhall forthwith be enlarged and delivered out of priſon; with proviſo, that the judge may, if he thinks fit, continue the offender in gaol for any time not exceeding a year. Thus the law continued for above a century; except only that the ſtatute 21 Jac. I. c. 6. allowed, that women convicted of ſimple larcenies under the value of 10s. ſhould be burned in the hand, and whipped, ſtocked, or impriſoned for any time not exceeding a year. And a ſimilar indulgence by the ſtatutes 3 & 4 W. & M. c. 9, and 4 & 5 W. & M. c. 24. was extended to women guilty of any clergyable felony whatſoever, who were allowed to claim the benefit of the ſtatute, in like manner as men might claim the benefit of clergy, and to be diſcharged, upon being burned in the hand, and impriſoned for any time not exceeding a year. The puniſhment of burning in the hand, being found ineffectual, was alſo changed by ſtatute 10 & 11 W. III. c. 23. into burning in the moſt viſible part of the left cheek, neareſt the noſe; but this proviſion was repealed by ſtatute 5 Ann. c. 6. It was farther enacted by the ſame ſtatute, that when any perſon is convicted of any theft or larceny, and burnt in the hand for the ſame according to the ancient law, he ſhall alſo, at the diſcretion of the judge, be committed to the houſe of correction or public work-houſe, to be there kept to hard labour for any time not leſs than ſix months, and not exceeding two years; with a power of inflicting a double confinement in caſe of the party's eſcape from the firſt. It was alſo enacted by 4 Geo. I. c. 11. and 6 Geo. I. c. 23, that when any perſons ſhall be convicted of any larceny, either grand or petit, or any felonious ſtealing or taking of money or goods and chattels either from the perſon or the houſe of any other, or in any other manner, and who by the law ſhall be entitled to the benefit of clergy, and liable only to the penalties of burning in the hand, or whipping, the court, in their diſcretion, inſtead of ſuch burning in the hand, or whipping, may direct ſuch offenders to be tranſported to America, (or, by ſtatute 19 Geo. III. c. 74. to any other part beyond the ſeas) for ſeven years. See TRANSPORTATION. It is alſo enacted by the ſame ſtatute, 19 Geo. III. c. 74, that, inſtead of burning in the hand, the court in all clergyable felonies may impoſe a pecuniary fine, or (except in the caſe of manſlaughter,) may order the offender to be once or oftener, but not more than thrice, either publicly or privately whipped: which fine or whipping ſhall have the ſame conſequences, as burning in the hand; and the offender, ſo fined or whipped, ſhall be equally liable to a ſubſequent detainer or impriſonment. See *Benefit of* CLERGY.

BRANDIS, in *Geography*, a town of Germany, in the circle of Upper Saxony, and territory of Leipſick; 9 miles E. of Leipſick.

BRANDLECHT, a town of Germany, in the circle of Weſtphalia, and county of Bentheim; 3 miles S.S.E. of Northorn.

BRANDMULLER, GREGORY, in *Biography*, a painter referred by the Germans to the firſt rank of artiſts, was born at Baſle in 1661; and, in conſequence of having diſcovered a genius for his art, and of having acquired a knowledge of deſign by ſtudying and copying ſome good prints in his father's poſſeſſion, he was placed under the tuition of Caſpar Meyer. From Baſle he removed to Paris, and was admitted into the ſchool of Le Brun, whoſe eſteem and preference he acquired by his proficiency in his profeſſion to ſuch a degree, that he became the object of jealouſy to others, and was under a neceſſity of retiring into his own country; having firſt obtained the prize in the Royal Academy at Paris. He excelled in hiſtory and portrait; and reſembled Le Brun in the fire, elevation, and grandeur of his ſubjects. His deſign is correct; his expreſſion juſt and animated; and his method of colouring good, ſo that it retained its original ſtrength and beauty without fading. He died in 1691. Pilkington.

BRANDO, in *Geography*, a ſmall iſland in the gulph of Bothnia, containing 6 or 7 villages, a church, ſome arable land, and ſmall woods.

BRANDO, a town in the iſland of Corſica, 6 miles N. of Baſtia.

BRANDOLINI, AURELIO, in *Biography*, an eminent Italian poet, divine, and polite writer, was born of a noble family at Florence in the 15th century, and ſurnamed "Lippus," on account of a defluxion from his eyes, which, at an early age, had nearly deprived him of his ſight. Notwithſtanding this misfortune, he acquired great eminence in various kinds of literature; and he found in theſe, ſources of conſolation, amidſt the afflictions occaſioned by a defect of ſight, and the loſs of his fortune. Among other excellencies for which he was diſtinguiſhed, he was ſingularly ready in his poetic compoſitions; and this talent he poſſeſſed in ſo eminent a degree, that he is ſaid to have put into very elegant verſe, without premeditation, all the topics of Pliny's 37 books of Natural Hiſtory. Corvinus, king of Hungary, hearing of his fame, invited him to his court; and employed him, for ſeveral years, in teaching rhetoric at Buda and Gran. After the death of that king, in 1490, he returned to Florence, and aſſumed the habit of the friars of St. Auguſtin. In this new profeſſion, he applied aſſiduouſly to the exerciſe of his miniſtry, and preached, with great applauſe, to crowded auditories in ſeveral parts of Italy. As to the character of his ſermons, it is ſaid, that they were diſtinguiſhed, not only by ingenious illuſtrations of the Scriptures, but alſo by a ſtrain of ſublime philoſophy derived from the ancients. After reſiding for ſome time at Naples, where he had for his ſcholar Giammaria del Monte, afterwards pope Julius III., he ſettled at Rome, and died there of the plague in 1498. The moſt valuable of his numerous works were his 3 books, "De Ratione Scribendi," containing the precepts of good writing, and written with ſingular learning and elegance; his two books, entitled "Chriſtiana Paradoxa," firſt printed at Baſil in 1543, 8vo.; "De Humanæ Vitæ Conditione, et tollenda Corporum Ægritudine." Theſe, with ſome others, were printed at Baſil in 1498. He alſo publiſhed, in heroic verſe, the hiſtories of the O. and N.T., a commentary on St. Paul's epiſtles, a treatiſe "De Lege," ſome orations, and ſome Latin and Italian poems: and left ſeveral treatiſes in MS. on political and hiſtorical ſubjects. Tiraboſchi. Gen. Dict.

BRANDON, in *Geography*, a market-town of Suffolk, England, is pleaſantly ſituated on the banks of the leſſer Ouſe, which is navigable from Lynn to Thetford, and forms part of the boundary between the counties of Suffolk and Norfolk. By the navigation of this river, various articles of trade and commerce are imported to, and exported from the town. An ancient bridge is thrown acroſs the river, upon which there was a hermitage in 1406, belonging to the biſhop of Ely. Upon the decay of this ſtructure, that prelate granted 40 days' pardon to all perſons who contributed towards the repairs, and to the hermit, a pardon for three years. This town gives the title of duke of Brandon to Archibald Hamilton, which title was firſt conferred by queen Anne in 1711.

Simon Eyre, lord mayor of London, who built Leadenhall, was a native of this town. Here are a weekly market on Thurſdays, and four fairs annually.

In the vicinity of Brandon, are ſome very extenſive rabbit warrens, which ſupply the London markets with vaſt numbers of this animal.

Brandon is 78 miles N. of London, and contains 203 houſes, with 1148 inhabitants. Gough's Edition of Camden's Britannia, vol. ii.

Brandon, a poſt-town of America, in Rutland county, Vermont, ſituate on both ſides of Otter Creek, containing 1075 inhabitants. Here Brandon Creek diſcharges itſelf into Otter Creek, from the North Eaſt.

Brandon, a harbour on the N. ſide of Long Iſland, New York, 9 miles W. of Smithtown, and at the ſame diſtance from Hampſtead plain.

Brandon, **St.** the name of an iſlet or rock lying in the Indian ocean, to the N.E. of the iſlands Bourbon and Mauritius. S. lat. 16° 45′. E. long. 64° 48′.

Brandon, a mountain in the county of Kilkenny, Ireland, below which the river Barrow flows; it is the laſt of the granite chain which takes its riſe in the county of Wicklow, and though its elevation is not conſiderable, it commands a very extenſive proſpect.—Alſo, a very high mountain in the county of Kerry, Ireland, which is ſeen at the diſtance of 15 leagues, and is an important land-mark for mariners. Its ſummit is generally covered with clouds: and it is eſteemed a certain token of fine weather when its top is viſible. It received its name from St. Brandon, who had an oratory, or chapel, near its ſummit.

Brandon *Bay*, a bay on the weſtern coaſt of Ireland, near Tralee bay, in the county of Kerry. On the weſt it has Brandon mountain, and, on the eaſt, a flat low land called Magherebeg, off which is a cluſter of ſmall iſlands. This bay is open to the north, and has neither ſafe anchorage nor tolerable ſhelter. Smith's Kerry.

Brandon *Head*, a cape of Ireland, forming the weſtern extremity of Brandon bay, and projecting from the lofty Brandon mountain. It is about 15 miles weſt of Tralee, and 10 north of Dingle. N. lat. 52° 17′. W. long. 10° 1′. Beaufort.

BRANDRITH denotes a trevet, or other iron ſtand, whereon to ſet a veſſel over the fire.

Brandrith, among *Builders*, denotes a ſence, or rail, about the mouth of a well.

BRANDT, **Gerard**, in *Biography*, an eminent hiſtorian, was born at Amſterdam, in 1626, and, after a courſe of preparatory ſtudy, commenced his miniſtry with a congregation of remonſtrants at Nieukoop. Having married a daughter of the celebrated Gaſpard Barlæus, he removed firſt to Hoorn, and finally to Amſterdam in 1667. His principal works are, "A ſhort account of the Reformation in the Low Countries, and the War with Spain," 1658; "Hiſtory of the Reformation, and other particulars concerning the Church of the Low Countries." 4 vols. 4to. 1671, &c. This work, written in Dutch, contains a faithful and accurate repreſentation of the important event, concerning which it treats; and ſo highly was it eſteemed, that penſionary Fagel told biſhop Burnet that the peruſal of this alone would amply recompenſe the trouble of learning the Dutch language. We have an Engliſh tranſlation of it by Chamberlayne, and it has been abridged in French, in 3 vols. 8vo. 1730. Brandt alſo wrote "A Hiſtory of the Town of Enkhuyſen;" "Life and Exploits of Admiral Ruyter;" "Account of the Proceedings againſt Barneveldt, Hoogerbeets, and Grotius;" "Poems," &c. He died in 1685. Moreri.

Brandt, **Nicholas**, or, as ſome call him, *Sebaſtian*, a German chemiſt, much addicted to the fanciful reſearches of the period in which he lived, was born in 1458, and died in May, 1521. Leibnitz, in the Melanges de Berlin for 1710, cited by Chaptal, in his "Elements of Chemiſtry," vol. iii. p. 350, mentions Brandt as a chemiſt of Hamburg, who, during a courſe of experiments upon urine, with a view of extracting a fluid proper for converting ſilver into gold, diſcovered phoſphorus in 1667, or, as others ſay, in 1669. He communicated his diſcovery to Kraft, who imparted it to Leibnitz, and, as it is pretended, to Boyle. (See **Boyle**.) Leibnitz, ſays Chaptal, introduced Brandt to the duke of Hanover, before whom he performed the whole operation; and a ſpecimen of it was ſent to Huygens, who ſhewed it to the Academy of Sciences at Paris. It is ſaid, that Kunckel had aſſociated himſelf with Kraft to purchaſe the proceſs from Brandt; but Kunckel having been deceived by Kraft, who kept the ſecret to himſelf, knowing that urine was made uſe of, ſet to work, and diſcovered a proceſs for making the ſubſtance; and hence it has been called Kunckel's phoſphorus. See **Phosphorus**.

BRANDY. This valuable ſpirit is produced by the diſtillation of wines of all kinds, and, properly ſpeaking, by no other fermented liquor, though, as we have explained fully, under the article **Alcohol**, the purely ſpirituous part of all fermented vinous liquors, procured by diſtillation, is eſſentially the ſame, and, therefore, an infinite variety of imitations of the intermediate products of diſtillation, may be produced by adding flavouring and colouring matters to any kind of pure ſpirit.

Brandy is prepared in many of the wine countries of Europe, and, with particular excellence, in Languedoc, in Anjou, whence the well-known Cogniac brandy, and other parts of the ſouth of France.

The general mode of preparing it is extremely ſimple, being nothing more than a well-regulated diſtillation of wine from ſuitable veſſels. This manufactory is technically termed, in France, *Brulerie*, and the makers, *Bruleurs d'eau de vie*.

Though every wine will give a certain portion of brandy, by diſtillation, it is not every kind that can be uſed with advantage. In general, the ſtrong heavy wines are to be preferred. Thoſe that do not yield a ſixth of their quantity of ſpirit, are not worth the expence of working.

The apparatus is compoſed of three parts, the *alembic*, or boiler, the *capital* fitted on the top of the boiler to receive the ſpirituous vapour, and the ſerpentine, or *worm*, a convoluted pipe fitting to the beak of the alembic, and immerſed in water, in which the vapour is condenſed, and flows out at the bottom, in the form of diſtilled ſpirit.

The alembic is a cylindrical copper boiler about 30 inches (French) high, and 24 in diameter, flattened at the bottom to preſent a greater ſurface to the fuel, and drawn out into a neck at the top, about 2 inches high, and only 9 or 10 in diameter. The capacity of this alembic is about 320 quarts. The capital, which fits on the neck of the alembic, is ſomewhat in the form of a very flattened cone, with the apex downwards, and truncated where it joins the alembic. Its diameter here is of courſe a trifle more than that of the neck of the alembic over which it fits; above, its diameter is about 7 or 8 inches more. A tube, or beak, projects laterally from the lower part of the capital, to convey the vapour into the pewter ſerpentine or worm, which makes ſix or ſeven turns before it reaches the bottom of the large tub of water in which it is immerſed. The diameter of the worm is about an inch and a half at the upper part, where it joins the beak of the capital, and leſſens gradually to one inch towards the bottom.

The alembic is built into brick-work, which lines the whole, except the bottom, and a few inches below the neck. Beneath the alembic is the fire-place, made ſo that the flame of the fuel (generally wood) immediately touches the flat bottom of the alembic, and furniſhed with an aſh-pit, flue, and regiſters, or dampers.

In diſtilling, the alembic is firſt filled to about five-ſixths of its capacity, with wine, (which, in the above dimenſions, is from 5 to 6 quintals,) and the fire kindled beneath. When the wine is near boiling, the capital is put on, and all the joints luted with clay and aſhes, and preſently a thin ſtream of brandy begins to fall from the lower extremity of the worm, into a large caſk ſet to receive it. The fire is kept up, and the diſtillation continued, till all the ſpirit is got from the wine; after which, the fire is let out, and the remaining contents of the alembic are drawn off by a cock at the bottom, and thrown away as uſeleſs.

In diſtilling, care ſhould be taken not to urge the fire too much at firſt, otherwiſe the wine boils up into the capital, and comes over into the worm, mixing with, and fouling the ſpirit. In general, the ſlower the proceſs, and the ſmaller the ſtream of ſpirit from the worm-pipe, the finer and better is the brandy. The diſtillers make a diſtinction between the former and the latter runnings of the ſpirit. What firſt comes over has the ſtrongeſt, richeſt, and higheſt flavour, and this is gradually leſſened, and the ſpirit becomes more and more watery to the end. Therefore, when the brandy becomes weak, the portion already diſtilled is ſet apart, and the remainder is collected in a ſeparate veſſel, and is called *ſeconds*, or *petite eau*, or *feints*, in the term of Britiſh diſtillers, and is not immediately fit for uſe, but is re-diſtilled with freſh wine, in the next proceſs, being ſtill too valuable to be loſt. It is obvious, that the preciſe point at which this diſtinction is made, muſt be arbitrary, and, therefore, it is determined, in ſome countries, by the proportional quantity of ſpirit obtained, to the wine put into the alembic; and, in others, by a certain ſpecific gravity; in Spain and Portugal, (as with rum in the Weſt Indies,) the ſinking of olive oil in the ſpirit is the eſtabliſhed proof. The wine is known to be entirely exhauſted of its ſpirit by taking a ſmall quantity of the liquor at that time diſtilling over, laying it on the heated part of the alembic, and putting a lighted match to it. If the ſteam which it gives, takes fire, burning with a blue flame, it is ſtill ſpirituous; if not inflammable, the liquor is little elſe than water. It takes about nine or ten hours to run off the quantity above mentioned, in which time about 60lb. of coal is uſed, when this is the fuel.

Brandy is naturally clear and colourleſs as water; for the different ſhades of colour, which it has in commerce, ariſe partly from the caſks in which it is kept, but, chiefly, from the addition of burnt ſugar, ſaunders wood, and other colouring matters that are intentionally added by the manufacturer, and which appear to do neither good nor harm to the quality of the ſpirit.

There are ſeveral ways of judging of the ſtrength of the ſpirit. Many are mentioned under the article ALCOHOL. The following is alſo much uſed by the dealers: a phial is filled three quarters with the brandy, ſtopped with the thumb, and ſuddenly knocked, with ſome force, againſt the knee, to prevent breaking it. This raiſes a froth on the ſurface, and, by the ſize and durability of the bubbles, a good idea may be formed of the ſtrength of the liquor by thoſe who are in the conſtant habit of examining ſamples. This is, however, as liable to error as the trial with gunpowder, burning, &c.; for it is well known, that certain additions may be made to brandy which will very much alter the frothing. After all that has been done, it is ſtill a difficult problem to determine, with perfect accuracy, the ſtrength of all kinds of made ſpirits, by any ſhorter method than that of diſtillation, though the improved *hydrometers* anſwer moſt of the purpoſes of trade and revenue.

The ſtrength of the ſpirit, of courſe, depends on the ſtrength of the wine from which it is made, and this, again, depends on the quantity of ſaccharine mucilage contained in the muſt or grape juice, and the perfection of the fermentation. Generally ſpeaking, the wines of hot-climates furniſh much more ſpirit than thoſe of colder; and ſweet, rich, well-ripened grapes give much more than the cold, ſour, watery fruits. The richeſt wines furniſh as much as a third of ſpirit; and the general average of the wines in the ſouth of France and Spain is ſtated to be, by Chaptal, about a fourth. On the other hand, ſome of the northern wines (though perfect as wine) give no more than a fifteenth of ſpirit.

The principal differences in the quality of brandies are *ſtrength*, or quantity of alcohol, and *flavour*, which laſt is given, apparently, by ſeveral principles contained in the wine. There appears to exiſt in wine a peculiar aroma, or flavouring principle, which is imparted (ſomewhat altered, indeed, by diſtillation) to the brandy procured from it. This, whatever it is, is leſſened by every ſubſequent rectification of the brandy, and is entirely loſt when the alcohol or purely ſpirituous part is extracted. There are alſo ſeveral unpleaſant flavours found in different kinds of brandy, and which greatly impair its excellence and delicacy for the table. The flavour of *empyreuma*, or *burning*, is the commoneſt. This is properly ſo termed, ſince it is ſcarcely ever found in the very firſt portions of any diſtillation, but increaſes as the proceſs continues; when the wine, therefore, has undergone a longer impreſſion of heat, and when, from the decreaſing ſtrength of the ſpirit, a higher temperature than at firſt is required to keep the wine boiling in the alembic. This burnt flavour is alſo more prevalent where the conſtruction of the ſtill is ſuch as to require a longer continuance of the boiling, and may, at any time, be given by raiſing the heat much at the end of the proceſs. Though this flavour is diſagreeable to the fineſt judges of brandies in the wine countries, it has become, through the caprice of faſhion, an excellence in ſome exported brandies, and muſt, accordingly, be given by the manufacturer.

Chaptal, with great probability, attributes this burnt taſte, in a great meaſure, to the preſence of the malic acid in the wine, which alſo appears, in ſome degree, in the ſpirit diſtilled from it. He obſerves, that the thin or ill-fermented wines contain much of an acid which, by its forming inſoluble ſalts with lead, ſilver, and mercury, and lime, and by other chemical teſts, is proved to be the *malic*, and it alſo appears in great abundance in cyder, perry, and other ſuch harſh wines. All theſe, when diſtilled, yield a ſpirit which is of bad quality, acrid, empyreumatic, eſpecially in the laſt-diſtilled portion, and even contains a ſenſible quantity of the ſame acid which has paſſed over in diſtillation. The addition of chalk, alkali, or lime water to the wine does indeed keep down the acid, and prevents it from paſſing into the ſpirit, but with a very remarkable diminution of the quantity yielded, and even then, the empyreumatic odour remains. On the other hand, the richer wines are thoſe that are the moſt free from this acid.

Another ſubſtance, which gives a very ſtrong, and moſtly, unpleaſant flavour and ſmell to brandy, appears to be an eſſential oil of peculiar nature, which is found in the ſpirit of ſome of the richeſt and fulleſt bodied wines. The exact nature of this oil is not known, nor can it be well aſcertained, whether it is different from the common flavouring principle, or aroma of wines, except in being ſo abundant, as to be in part altered by diſtillation, and changed thereby from a grateful to a nauſeous ſubſtance. When ſpirit, charged with this oil, is rubbed in the hands till dry, a ſtrong ungrateful ſmell is left by this oil, reſembling, in ſome degree, the breath of drunkards. Sometimes this oil is in ſuch a quantity as to ſeparate, in part, from the ſpirit as it cools, and is found in the capital, as a concrete, ſuetty oil, ſtrongly nauſeous to the ſmell and taſte. Brandy diſtilled from this oily wine is, in fact, a ſaturated ſolution of this eſſential oil in alcohol. It is much improved by a ſecond rectification, with the previous addition of pure water, which immediately renders the ſpirit milky, ſeparates it from a great part of its oil, and, by very careful re-diſtillation, the ſpirit riſes much more pure than before. Any artificial ſolution of an eſſential oil in alcohol may be rectified, and the oil ſeparated in the ſame manner.

The manufacture of brandy, in other countries, very cloſely reſembles the French proceſs which we have juſt deſcribed. Thus, in Spain, the ſtill is filled to four-fifths of its contents with wine, the capital luted on, a fire kindled, and, in about an hour and a half, the ſpirit begins to come over. About a fifth of the entire quantity of wine is proof-ſpirit, in which olive oil ſinks, and comes over fit to be uſed, without farther proceſs; and, as much of inferior and weaker ſpirit comes over afterwards, which is re-diſtilled and rectified. When the wines are old, heavy, and oily, and a fine clear ſpirit is wanted at once, water is added to the wine before diſtillation, to keep down the oil. The principal diſtilleries in Spain are in Catalonia.

In Portugal, the olive-oil proof is alſo eſtabliſhed, and the wines are there alſo ſo heavy and oily, as often to require the addition of water, which, however, is not added to the wine, but only to the brandy before rectification.

An inferior kind of brandy is made from the *marc* of grapes, or the reſidue of the grapes after the juice has been preſſed out. This ſtill retains enough of the grape-juice to be readily brought into fermentation, when properly arranged, and, therefore, to be capable of yielding afterwards a ſpirit by diſtillation. In Switzerland, it is thus performed: Wine-caſks are filled with the freſh marc quite full, and preſſed down by trampling, to make it lie cloſe, and prevent it from moulding; the caſks are then headed, and the bung-holes and joinings are cloſed up with clay. In two or three days, fermentation begins, the marc heats, and when the firſt working has ſubſided, and it has got an agreeable vinous ſmell (which happens in from two to four or five weeks,) it is fit for diſtillation. The alembic may be filled quite to the top with the fermented marc, and juſt water enough is added to wet it thoroughly. The fire ſhould be very ſlack, and kept up very moderately in the proceſs, otherwiſe, the marc, neareſt to the bottom, will burn, and give a very unpleaſant taſte to the brandy. Thirty-two cubic feet of fermented marc will give about ten gallons of ſpirit. If not wanted immediately, the marc will keep without ſpoiling in the barrels, if well cloſed, for two, three, or even four months. This ſpirit ſhould be rectified over aſhes or lime-water to become very drinkable.

M. Beaumé, in his experiments, found, however, that he could obtain a very good ſpirit from the marc, by a ſingle diſtillation, either by immerſing the alembic in a water-bath, and thus regulating the heat, or by making a kind of wicker cradle within the alembic, raiſed an inch or two from its bottom, and letting the marc reſt upon it, ſo as to be prevented from coming in contact with the bottom, where the heat is ſtrongeſt, and adding water, as before, and diſtilling with a ſlow fire. By this contrivance, all the burnt flavour was avoided, and the ſpirit roſe at firſt very pure and good.

Various improvements have been propoſed, and partly adopted, in the conſtruction of the alembics and diſtillatory apparatus, the chief of which, with other obſervations relating to the general art of preparing Distilled Spirits, will be deſcribed under that article. See alſo Wine and Alcohol.

Encycl. Meth. (Art. Alcool et Diſtillateur liquoriſte) Beaumé et Rozier, in Jour. de Phyſ. tom. xii. et xviii. An. Chim. Tom. xxxvii.—Report to the H. of Commons on the Scotch Diſtilleries.—Chaptal, &c. For the laws relating to brandy; ſee Spirits.

Brandy-*Cherry*. See Cherry.

Brandy-*Pots*, in *Geography*, the name given to iſlands, in the river St. Lawrence, 40 leagues below Quebec.

BRANDYWINE, a townſhip of America, in Cheſter county, Pennſylvania.

Brandywine *Creek*, a creek of America, which falls into Chriſtiana creek from the northward, at Wilmington, in the ſtate of Delaware, about 25 miles from its N. and N. W. ſources in Cheſter county, Pennſylvania. This creek is famous for a battle, fought on the 11th of September 1777, and terminating with conſiderable loſs by the Britiſh troops. In conſequence of this battle, Philadelphia was taken poſſeſſion of by general Howe on the 26th.

BRANE, a river of South Wales, which runs into the Towy, near Llanimdovery, in the county of Carmarthen. —Alſo, a river of South Wales, which runs into the Uſk, 3 miles W. of Brecknock.

BRANFORD, a townſhip of America, in the county of New Haven, and ſtate of Connecticut, lying on the ſouth ſide of a river of the ſame name, which runs into Long Iſland ſound, 10 miles E. of New Haven, and 40 S. of Hartford. It is conſiderable on account of its iron works.

BRANG, a town of Poland, in the palatinate of Volhynia; 44 miles S. W. of Lucko.

BRANGES, a town of France, in the department of the Saone and Loire, and chief place of a canton, in the diſtrict of Louhans, half a league N. W. of Louhans.

BRANITZ, a town of Sileſia, in the principality of Oppau; 4 miles S. E. of Jagerndorf.

BRANITZY, a town and diſtrict of Ruſſia, in the government of Moſcow, ſeated on the Moſcva, between Moſcow and Kolomna.

BRANK, in *Botany*, polygonum fagopyrum, buck-wheat.

Brank. See Scolding Bridle.

BRANKER, or Brancker, Thomas, in *Biography*, an eminent Engliſh mathematician, was born in Devonſhire, in 1636, admitted butler of Exeter college, Oxford, took the degree of B. A. in 1655, and that of M. A. in 1658, and became a preacher. Upon the reſtoration, objecting to conformity to the eſtabliſhed church, he reſigned his fellowſhip at Oxford in 1662, and retired to Cheſter; but changing his mind with reſpect to conformity, he was epiſcopally ordained, and was appointed miniſter of Whitegate. By his attention to mathematics and chemiſtry, in the ſtudy of which he employed his intervals of leiſure, he obtained the patronage of lord Brerewood, who gave him the rectory of Tilſton. Being afterwards appointed maſter of the well-endowed ſchool at Macclesfield, he ſpent the remainder of his life in that place, and died there in 1676. His mathematical writings were "A Piece on the Doctrine of the Sphere," in Latin, publiſhed at Oxford in 1662; a tranſlation of Rhonius's algebra, entitled "An Introduction to Algebra," 4to. Lond. 1668, in which he liberally acknowledges the aſſiſtance of Dr. Pell. He alſo correſponded on ſubjects of mathematics, with Collins, and other eminent men. Hutton's Dict.

BRANKYRKA, in *Geography*, a town of Sweden, in the province of Sudermania.

BRANLE, *Fr.* a kind of dance, very gay, brought hither from France in the time of Charles II.

BRANLIN, in *Ichthyology*. See Samlet.

BRANNE, in *Geography*, a town of France, in the department of the Gironde, and chief place of a canton, in the diſtrict of Libourne; 2 leagues S. of Libourne. The town contains 544, and the canton 10,726 inhabitants: the territory includes 155 kiliometres, and 21 communes.

BRANNOGENIUM, in *Ancient Geography*, a town of the Ordovices, in Ptolemy's deſcription of Britain, placed by Camden and Baxter at Worceſter, ſuppoſing that ſome tranſcriber had committed a miſtake in aſſigning it to the Ordovices, from which territory Worceſter is too remote. Mr. Horſley places it near Ludlow, which might belong to the Ordovices.

BRANNOVII, a people mentioned by Cæſar, who were under the protection of the Ædui, and who furniſhed him with troops. They are placed in a ſmall canton of Burgundy in France, called the "Briennois," to the weſt of Maçonnois.

BRANNY, in *Botany*, furfuraceous, covered with branny ſcales; a term applied to the ſtipes, or ſtalks of ſome ſpecies of fungi.

BRANODUNUM, in *Ancient Geography*, one of the nine forts ſubject to the command of the count of the Saxon ſhore in Britain; garriſoned by the equites Dalmatiæ, and ſeated on the Sinus Metaris; now Branceſter in Norfolk, on the waſhes.

BRANSEE, in *Geography*, a ſmall iſland of Denmark, in the Little Belt; 5 miles W.N.W. from Aſſens.

BRANSK, a town and diſtrict of Ruſſia, in the government of Orel, ſituate on the Deſna.—Alſo, a town of Poland, in the palatinate of Bielſk; 16 miles W. of Bielſk.

BRANSKA, a town of Tranſylvania, ſeated on the Mariſh. N. lat. 46° 0′. E. long. 23° 15′.

BRANSON, a town of Swiſſerland, in the Valais, north of the Rhone, and about two miles N.E. of Martiguy. N. lat. 46° 11′. E. long. 6° 57′.

BRANT, a river of North Wales, in the iſle of Angleſea, which runs into the Menai, about 3 miles S. from Newburgh.—Alſo, a town of Germany, in the archduchy of Auſtria; 8 miles E. of Zwetl.

BRANTA, Brenta, and Brent-Goose, in *Ornithology*, ſynonymous names of *Anas Bernicla*, the common brent gooſe of the Engliſh.

Branta Torrida, is the name given by Scopoli to *Anas torrida.* Gmel.

Branta Albifrons, Scopoli, *Anas albicans*, Gmel.

BRANTHOME, in *Geography*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Perigueux; 3½ leagues N. of Perigueux. The town contains 2461, and the canton 10,765 inhabitants; the territory comprehends 265 kiliometres, and 12 communes.

BRANTOME, in *Biography*. See Bourdeilles.

BRAQUE, and Braque de Bengale. Buff. *Canis avicularius*, the ſpaniel.

BRARUP, in *Geography*, a ſmall iſland of Denmark, in the gulf of Schley; 10 miles E.N.E. of Sleſwick.

BRAS, a town of France, in the department of the Var, and diſtrict of the Brignolles; 4 miles E.N.E. of St. Maximin.

BRASCHEN, a town of Germany, in the circle of Upper Saxony, and duchy of Croſſen; 5 miles S.S.E. of Croſſen.

BRASCHEVSKOI, a fortreſs of Siberia, on the Irtiſh; 50 miles E. of Semipolatnoi.

BRASCHI, in *Biography*. See Pius VI.

BRASENIA, in *Botany*. Schreb. 938. Claſs, *polyandria decagynia.*

Gen. Char. *Perianth* one-leaved, ſix-parted, permanent; ſegments lanceolate, curved, obtuſe, coloured; three of them interior, alternate, a little longer and narrower than the others. *Cor.* none. *Stam.* filaments from eighteen to twenty-five, capillary, erect, attached to the receptacle, ſhorter than the calyx; anthers oblong, erect. *Piſt.* germs from five to ten, oblong, compreſſed, attenuated at the apex; ſtyles erect, bent inwards towards the top, pubeſcent, ſhorter than the ſtamens; ſtigmas obtuſe. *Pericarp*, as many capſules as germs, oblong, compreſſed, the outer ſide flat, the inner gibbous, acuminate, rather fleſhy, one-celled, without valves. *Seeds* two or three, oval, compreſſed. Obſ. Calyx, before flowering, erect, green. Allied to nectris. In both genera the pericarp might, perhaps be more properly called a berry. Only one ſeed often comes to perfection.

Boſc, in Nouveau Dictionaire, gives the ſame generic character, except that he conſiders the three inner ſegments of the calyx as a corolla. He gives no farther deſcription of the plant, nor does he mention any habitat. The genus is not taken up by Willdenow, nor is there any figure of it in La Marck's illuſtrations.

BRASIDAS, in *Biography*, a famous Lacedæmonian general, who diſtinguiſhed himſelf, on a variety of occaſions, in the Peloponneſian war, which began in the 431ſt year before Chriſt. Having gained the reputation of one of the greateſt generals of his time, he received a mortal wound in the action between the Lacedæmonians and Athenians, near Amphipolis, in which the former proved victorious, B. C. 422. See Athenians. Braſidas, no leſs diſtinguiſhed by his modeſty than by his prudence and bravery, wrote a letter from Thrace to the Ephori, which cloſes with this heroic declaration: "Whatever the honour of the ſtate requires, I will perform or die;" and he fulfilled his promiſe. Plutarch (Apothegm.) records, that having caught a mouſe among ſome figs, he let it go after having bitten his fingers, obſerving to thoſe who attended on the occaſion; "That there is no creature ſo contemptible as not to be able to free itſelf from a foe, if it exerts all the power it poſſeſſes." Public honours were decreed to his mother for the ſpeech uttered by her on occaſion of his death (ſee Athenians); and a monument was erected to Braſidas at the expence of the public. See the next article.

BRASIDIA, in *Antiquity*, anniverſary feaſts held at Sparta in honour of Braſidas, famous for his great atchievements in favour of that ſtate, at Methone, Pylus, and Amphipolis.

The Braſidia were celebrated with ſacrifices and games, at which none were allowed to contend but free-born Spartans. To be abſent from theſe ſolemnities is ſaid by ſome to have been held criminal, and puniſhed with fines. Meurſ. Græc. Ferial. Potter. Arch. Græc. lib. ii. cap. 20.

BRASIL, or Brazil, in *Geography*, an extenſive and opulent country in South America, belonging to the Portugueſe, and of ſuch importance as to be almoſt eſſential to the exiſtence of their monarchy. It derives its name from the wood which is ſo called, mentioned by Chaucer, and known many ages before his time. It is bounded on the north by the river of the Amazons and the north Atlantic ocean, on the eaſt by the ſouth Atlantic ocean, on the ſouth by the mouth of the river La Plata, and on the weſt by a multitude of moraſſes, lakes, rivers, and mountains, which ſeparate it from the dominions of the Spaniards; and extends from the frontier of Dutch Guiana, N. lat. 3°, to Port St. Pedro, S. lat. 32°, including 35° of latitude, or 2100 geographical miles, and in breadth from Cape St. Roque, to the fartheſt Portugueſe ſettlement on the river of Amazons, called St. Paul de Omaguas, comprehending at leaſt the ſame number of miles. Some have aſcribed the firſt diſcovery of Braſil to Martin Behem, in 1484 (ſee Behem); but this, however, has been more generally allowed to Pedro Alvarez Cabral, who being entruſted with the command of a powerful fleet, deſigned by the king of Portugal not only for the purpoſes of trade, but alſo of conqueſt, ſet ſail in 1500; and in order to avoid the coaſt of Africa, where he was likely to be retarded in his voyage by variable breezes or frequent calms, he ſtood out to ſea, and kept ſo far towards the weſt that he found himſelf, to his ſurpriſe, upon the ſhore of an unknown country, in the 10th degree beyond the line. He firſt thought that it was ſome iſland in the Atlantic ocean that had not been before obſerved; but proceeding along its coaſt for ſeveral days, he was led gradually to believe, that a country ſo extenſive formed a part of ſome great continent. This country proved to be that called by its diſcoverer "St. Croix," but now known by the name of Braſil. Here he landed; and having conceived a high idea of the fertility of the ſoil, and the agreeableneſs of the climate, he took poſſeſſion of it for the crown of Portugal, and diſpatched a ſhip to Liſbon, with an account of that event, which appeared to be no leſs important than it was unexpected. The Portugueſe, however, notwithſtanding the flattering report of Cabral, entertained, for ſome time, no very favourable opinion of this country; becauſe they found, after a ſurvey of its harbours, bays, rivers, and coaſts, that it afforded neither gold nor ſilver, and accordingly they ſent thither none but condemned criminals and abandoned women. Two ſhips were annually ſent from Portugal for this purpoſe, and they returned with parrots, and woods for the uſe of the dyers and cabinet-makers. In 1548, when the Jews were perſecuted by the inquiſition, they were plundered of their poſſeſſions and baniſhed to Braſil. But receiving encouragement from ſome of their mercantile friends in different nations, with whom they had formerly been connected, they were enabled to procure ſugar canes from the iſland of Madeira, and to eſtabliſh ſugar plantations. The court of Liſbon, perceiving that the mother-country might derive conſiderable advantage from this colony, although it furniſhed them neither gold nor ſilver, ſent thither in 1549, Thomas de Souza to regulate and ſuperintend it. This governor, notwithſtanding the talents which he poſſeſſed, found it very difficult to reduce thoſe who had been accuſtomed to anarchy to due ſubordination, and to induce the natives, who were diſperſed through the foreſts and plains, and who had no ſettled habitations, to aſſociate with one another, and to ſubmit to the yoke which the Portugueſe ſeemed deſirous of impoſing upon them. A diſſatisfaction enſued between both parties, which at length terminated in war; nor was the force that had accompanied Souza ſufficient to bring it to a peaceful termination. This was in ſome meaſure effected by the eſtabliſhment of a kind of central and rallying point for the colony at St. Salvadore, which was built in 1549, on the bay of All-Saints, and which was the firſt Portugueſe ſettlement in the country; but the object was chiefly accompliſhed by the addreſs of the Jeſuits, who, diſperſing themſelves among the Indians, contrived to engage their eſteem and attachment, and thus to extend the influence of the Portugueſe, and to enſure, as well as to augment, the advantages which the mother-country derived from this ſettlement. The Indians, inſtructed by the Jeſuits, and employed by them, diſtributed among the ſavage natives hatchets, knives, and looking-glaſſes with ſuch effect, that they were induced to regard the Portugueſe as an inoffenſive and humane people. The increaſing proſperity of the colony became gradually known in Europe; and excited the envy of the French, Spaniards, and Dutch ſucceſſively. The latter, however, were the principal enemies with whom the Portugueſe had to contend in their new ſettlement. In 1624, the Dutch Admiral Willekens was detached with a powerful ſquadron, and a conſiderable number of ſoldiers and marines for Braſil; and having caſt anchor before St. Salvadore, the capital of the country, and the reſidence of the Portugueſe viceroy, he landed his forces, expelled the inhabitants, and took poſſeſſion of the town. After having plundered it of its wealth, he appointed colonel Van Dort as governor, and left with him a ſtrong garriſon for his ſupport. His firſt act was the publication of a manifeſto, in the name of the States, allowing liberty of conſcience to all who were willing to take an oath of fidelity to the republic of the United Provinces. When an account of the ſucceſs of Willekens arrived in Holland, it was received with great ſatisfaction, and it was concluded, without heſitation, that the entire conqueſt of Braſil would enſue. Upon the return of Willekens to Europe, the Spaniards were prepared with a ſquadron of 56 ſail, under Frederic de Toledo, which was deſtined to drive the Hollanders out of Braſil. The fleet was manned with 12,000 ſoldiers and marines, who, immediately upon their arrival, laid ſiege to St. Salvadore, which, after an obſtinate reſiſtance, and the loſs of its governor, Van Dort, was obliged to capitulate. When the affairs of the Dutch at home aſſumed a more favourable aſpect, they diſpatched admiral Lonche, in 1630, with a ſtrong armament to the South American ſea, and he arrived on the coaſt of Pernambucco, or Fernambucco, one of the moſt conſiderable and beſt fortified provinces in Braſil, and, after ſeveral obſtinate engagements, ſucceeded in reducing it. He left behind him troops which reduced, in the years 1633, 1634, and 1635, the three provinces of Temeraca, Paraiba, and Rio Grande. Theſe four provinces furniſhed annually a large quantity of ſugar, wood for dyeing, and other commodities, which ſupplied the Hollanders with ſuch an acceſſion of wealth, that they determined to conquer the whole country; and entruſted Maurice of Naſſau with the conduct of the enterprize. After reſiſting many well-conducted efforts for ſelf-defence on the part of Albuquerque, Banjola, Lewis Roca de Borgia, and Cameron of Braſil, idolized by his people, and himſelf devoted to the intereſt of the Portugueſe, the Dutch took poſſeſſion of the provinces of Siara, Seregippe, and the greateſt part of that of Bahia. Having thus acquired ſeven out of the fourteen provinces into which Braſil was divided, they expected ſoon to conquer the other ſeven, when Portugal recovered its independence by the elevation of the family of Braganza to the throne. The Dutch, then as enemies to the Spaniards, became friends to the Portugueſe, who were likewiſe the enemies of the Spaniards. They agreed, therefore, to leave that part of Braſil which they had not conquered to the king of Portugal, who alſo agreed to leave that part which they had conquered, as a matter not worth diſputing about with ſuch good allies. But the Dutch government ſoon began to oppreſs the Portugueſe coloniſts, who, inſtead of amuſing themſelves with complaints, took up arms againſt their new maſters, and by their own valour and reſolution, with the connivance indeed, but without any avowed aſſiſtance from the mother-country, drove them out of Braſil. The Dutch, therefore, finding it impoſſible to keep any part of the country to themſelves, were contented that it ſhould be reſtored to the crown of Portugal; to which it has ſince belonged, giving title to the preſumptive heir.

Geographers are not agreed as to the number of provinces or captainſhips into which Braſil is divided. Some have diſtributed it into three grand diviſions: 1. The northern, containing eight provinces, *viz.* Para, Maragnon, Siara, Patagues, Rio Grande, Paraiba, Temara, and Pernambucco. 2. The middle diviſion; comprehending five captainſhips, *viz.* Seregippe, Bahia, or the bay of All-Saints, Ilheos, Porto Seguro, and Spirito Sancto. 3. The ſouthern diviſion, including three captainſhips, *viz.* Rio Janeiro, St. Vincent, and Del Rey. Others reckon fifteen provinces, *viz.* Para, Maragnon, Siara, Rio Grande, Paraiba, Temara, Pernambucco, Seregippe, Bahia, Porto Seguro, Spirito Sancto, Rio de Janeiro, Angra, St. Vincent, and Del Rey. By others again the whole of the Braſils is divided into eight independent governments, beſide that of Rio de Janeiro, of which the governor retains the name only of viceroy of the Braſils. The others are thoſe of Para or Amazons, Maragnon, Pernambucco, Bahia, Santo Paulo, Matto Groſſo, Minas Geraes, and Minas Goyaves. The reſt are fiefs granted to ſome of the nobility, in recompence of their extraordinary ſervices, who do little more than acknowledge the ſovereignty of the king of Portugal, and his repreſentative the viceroy of Peru, who acts both in a civil and military capacity, and maintains the ſtate and grandeur of a ſovereign prince in the city of St. Salvadore. Formerly Bahia dos Todos os Santos, or St. Salvadore, was the principal ſeat of government and chief mart for commerce in the Braſils; but the diſcovery and improvement of the gold and diamond mines, within about 100 leagues of Rio de Janeiro, and communicating immediately with it, gave a decided ſuperiority to the latter. On the coaſt are three ſmall iſlands, where ſhips touch for proviſions on their voyage to the South Seas; *viz.* Fernando, St. Barbaro, and St. Catharine's. The bays, harbours, and rivers, are the harbours of Pernambucco, All-Saints, Porto Seguro, the port and harbour of Rio de Janeiro, the port of St. Vincent, the harbour of St. Gabriel, and the port of St. Salvadore, on the north ſhore of the river La Plata. "All the provinces of Braſil," ſays ſir George Staunton (Embaſſy to China, vol. i. p. 180.) "are growing faſt into opulence and importance. They manufacture of late ſeveral of the moſt neceſſary articles for their own conſumption; and their produce was ſo conſiderable, that the balance of trade became to be already in their favour; and remittances of bullion were made to them from Europe, in return for the overplus of their exports beyond their imports." It appears, from the account of this writer, that the Portugueſe ſettlers have manifeſted repeated ſymptoms of revolt from the parent country. It appears alſo, that during the adminiſtration of the marquis de Pombal, ſo long prime miniſter in Portugal, theſe colonies were delivered from ſome monopolies and reſtraints, which had contributed to depreſs them; and moreover, that the project of removing the ſeat of the Portugueſe government to the Braſils was, once, in fact, ſeriouſly in contemplation with this miniſter, when that country was invaded by the Spaniſh forces in 1761, and that calculations were made and precautions taken, as to the number of veſſels neceſſary to tranſport acroſs the Atlantic the royal family, with the principal officers of the court, and their ſeveral attendants. But the project vaniſhed with the danger that occaſioned it; and the Braſils continued to be conſidered as a colony, deſtined, excluſively, to enrich the parent ſtate.

The climate of Braſil has been deſcribed by two eminent naturaliſts, Piſo and Margrave, who obſerved it with philoſophical accuracy, as temperate and mild, when compared with that of Africa. This they chiefly aſcribe to the refreſhing wind, which blows continually from the ſea. The air is not only cool, but chilly through the night, inſomuch that the natives kindle fires every evening in their huts. Nieuhoff, who reſided long in Braſil, confirms their deſcription. The rivers in this country annually overflow their banks, and, like the Nile, leave a ſort of ſlime upon the lands; ſo that the ſoil, eſpecially in the vicinity of the rivers, is extremely rich. The northern provinces are ſubject to heavy rains and ſtorms; but thoſe of the ſouth are more temperate and fertile. Among the vegetable productions of this country, we may reckon Indian corn, wheat, rice, manioc, ſugar canes, coffee, cocoa or chocolate, indigo, pepper, cactus, on which is bred the inſect furniſhing cochineal, and the noted Braſilian tobacco. The red or Braſil wood, imported into this country, for the purpoſe of dyeing, is the property of the crown. To the claſs of eſculent plants, we may refer thoſe that are common to all the tropical regions of America, ſuch as, beſides the cocoa and chocolate nut, the plantain, the banana, palms, the yam, potatoe, caſava, together with many ſpecies of melons and gourds. The principal fruits are, the pine apple, the mango, and the tamarind. The warm aromatic plants found here in a truly indigenous ſtate, and much uſed by the inhabitants as condiments to their food, or as the baſis of various drinks, are the oranges and limes, the grapes, ginger, the turmeric, ſeveral ſpecies of pepper, American coffee, capſicum or Guinea pepper, and the wild cinnamon, (laurus canella.) Several medicinal plants of high eſtimation grow here ſpontaneouſly, and in great abundance, ſuch are the contrayerva, the Indian pink, the mechoacan, the jalap, the amyris which yields the gum elemi, and the guiacum. Beſides the Braſil wood, this country furniſhes for ornamental uſe, or for the purpoſe of dyeing, logwood, fuſtic, mahogany, ebony, roſe wood, ſattin wood, and many others. Among its ornamental plants are the Braſilian myrtle, the ſcarlet fuſchia, and the amaryllis formoſiſſima. Braſil abounds with horned cattle, which are hunted merely for their hides, of which 20,000, it is ſaid, are annually ſent to Europe. Theſe cattle are taken and killed, more for the ſake of their hides and tallow than their fleſh; though great quantities of the latter are applied to the uſe of ſuch ſhips as ſail from Pernambucco, Bahia, Todos os Santos, and Rio de Janeiro, to Guinea. The places which are chiefly frequented for procuring theſe cattle, are Rio Grande and Rio Paraiba, lying to the northward of Pernambucco; and they are inhabited by Indians, called Tapuyes; many of whom ſend anually large droves of cattle, through the Tupique nation, which extends from the ſource of Rio St. Franciſco in S. lat. 8° to that of Rio Doce in S. lat. 20°, to Bahia Todos os Santos, and Rio de Janeiro, where they ſell them for 3 or 4 cruſadoes a-piece, (a cruſado being in value about 2s. 8d. ſterling,) or exchange them for knives, hatchets, &c. or coarſe baize, for a yard of which they will give a good beaſt. Among its animals, we may reckon ſeveral ſpecies of the armadillo or daſypus, the cat or felis kind, the otter or lutra, the weaſel or muſtela, the opoſſum or dydelphis, the porcupine or hyſtrix, the cavy, the ſquirrel or ſciurus, the hare or lepus, the muſk or moſchus, the deer or cervus, the hog or ſus, &c. Among the fiſhes found on its coaſts, and in its rivers, are ſome ſpecies of the cachalot or phyſeter, and the globe-fiſh, beſet with ſpikes like a hedge-hog, &c. Many of its birds are curious and beautiful, particularly ſome of the parrot or pſittacus kind, the toucan or ramphaſtos, the motmot or momotus, the palamedea or anhinga, with a ſtrong nail or ſpur at each flexure of its wings, and a horn about 6 inches long growing from its forehead. The ſize and vivid hue of the flowers in the foreſts, and the gaudy plumage of the birds, are very ſtriking. Braſil breeds a variety of ſerpents and venomous reptiles; among which are the Indian ſalamander, an inſect with four legs, whoſe ſting is ſaid to be fatal; the ibiboboca, a ſpecies of ſerpent about ſeven yards long, and half a yard in circumference, (ſee Boiguacu;) the rattle ſnake of enormous ſize; and the liboya, or roe-buck ſnake, which is ſaid to extend to the length of between 20 and 30 feet, and to be two or three yards in circumference, and which is capable, as ſome authors have reported, of ſwallowing a roe-buck whole. The hiſſing noiſe of this large and formidable ſnake ſets the hearer on his guard, and they ſeldom, without provocation, advance to an attack.

The gold and diamond mines of Braſil were firſt opened in 1681; and our information concerning them is imperfect. The former are ſituated in the mountains, from which flow various ſtreams north and ſouth, which diſcharge themſelves on one ſide into the river Tocantin, and on the other into the Parana; but there are mines of gold, as far inland as the river Cuyaba, which runs into the Paraguay, and even near river Ytenas. Others are near the river Paixe and Saguitinhonha, the Riacho-Fundo, and Guarapara in St. Paul's. One fifth of the gold is exacted by government, and the people of Rio are prohibited from working up even the gold of their own mines, and the tools and inſtruments uſed for that purpoſe are ſeized and confiſcated.

The diamond mines are near the little river of Milhoverde, not far from Villa Nova de Principe, in the province of Serro de Frio, S. lat. 17° according to La Cruz, and W. long. about 44°. Theſe diamonds of Braſil are not of ſo fine a water as thoſe of Hindooſtan; being of a browniſh and obſcure hue; and ſuppoſing the weights to be equal, they are ſold 10 per cent. cheaper than thoſe of the eaſt. One of the largeſt diamonds that has been known, was ſent from Braſil to the king of Portugal. It weighed 1680 carats, or 12½ ounces; and it has been valued at 56,787,500l. Some ſkilful lapidaries, however, have ſuggeſted, that this ſuppoſed diamond is only a topaz. All the diamond mines belong excluſively to the crown. The mines of gold and ſilver are ſaid to have yielded above five millions ſterling annually: thoſe of diamonds have been uſually farmed at about 30,000l. yearly, which is thought to be ſcarcely a fifth of their actual produce.

The trade of Braſil, notwithſtanding the reſtraints and impoſitions to which it is ſubject, is very extenſive, and continually increaſing. This commerce is of ſuch importance to the parent ſtate, that it could not ſubſiſt without it. The confluence of people who reſort to the Braſils from Portugal, and from other countries, has much augmented the imports of gold, and, what is much more important to Europe in general, the exportation of the manufactures of this hemiſphere. Great Britain ſupplies Braſil with a variety of woollen manufactures; ſuch as fine broad medley cloths, fine Spaniſh cloths, ſcarlet and black cloths, ſerges, duroys, druggets, ſagathies, ſhalloons, camblets, and Norwich ſtuffs, black Colcheſter bays, ſays, and long ells, hats, ſtockings, and gloves. Holland, Germany, and France, have chiefly exported thither, fine hollands, bone-lace, and fine thread; ſilk manufactures, lead, block tin, and other articles are alſo ſent from different countries. England likewiſe trades with Portugal for the uſe of the Braſils, in copper and braſs, wrought and unwrought pewter, and all kinds of hardware. By this extenſion of its trade, Portugal, inſtead of 12 ſhips uſually employed in the commerce with Braſil, employs at leaſt 100 ſail of large veſſels, which are perpetually paſſing from one country to the other. Braſil alſo carries on a conſiderable trade with Africa in ſlaves, and thus Portugal occupies a great number of ſhips. All theſe ſhips, employed in different branches of trade, go and return at appointed ſeaſons, under the direction of government, and under convoy of a certain number of men of war; nor can a ſingle ſhip clear out or depart, without the fleet, except by a ſpecial licence from the king, which is ſeldom granted. By theſe reſtrictions, however, as well as by the infatuated policy of the country, it fails to derive that advantage from this extenſive commerce, which it is adapted to afford. The fleets ſail in the following order, and at the following ſtated periods: that deſtined for Rio de Janeiro ſets ſail in January; the fleet to Bahia, in February; and the third fleet to Pernambucco, in March.

The duties which the agents of Portugal levy upon the importation of goods from Liſbon and Oporto at Rio de Janeiro are 12 per cent., upon the value of each article. The chief duties paid at Liſbon, on the commodities of the Braſils, are as follow: upon gold, 1 per cent.; coffee 8 per cent: ſugar, rice, and ſkins, 10 per cent.; indigo, 12 per cent.; planks, 17 per cent.; and rum 4 dollars for every pipe of 180 gallons. All large ſhip timber, as well as the Braſil wood, is claimed as the property of the crown. Yet, notwithſtanding all monopolies, prohibitions, and heavy taxes, the whole revenue from the Braſils is ſaid not to be equal to a million ſterling, of which the expence of their government conſumes about a third part. The taxes are ſeverely felt eſpecially in the interior provinces, where the carriage and tranſit duties increaſe the price of every article ſo enormouſly, that a bottle of port wine, for inſtance, coſts 10s. ſterling to the conſumer. The hardſhips thus impoſed by the mother-country, excite a ſpirit of general diſſatisfaction and revolt. Hence it happens, that thoſe officers, both civil and military, who are natives of Portugal, and alſo the eccleſiaſtics, ſoon change their original affection for the parent ſtate, into an attachment to that where they are likely to ſpend their days, and are ſometimes tempted to ſacrifice to their own intereſt that of their employers. It is obſervable, that whatever difficulties the Portugueſe may be likely to encounter, in ſecuring their American poſſeſſions againſt internal enemies, they ſeem to have taken no mean precautions againſt any foreign attack. See Rio de Janeiro.

The population of this extenſive country has not been accurately aſcertained. Some have reckoned the Portugueſe and their deſcendants at half a million, and the natives at 3 or 4 millions. According to ſir George Staunton's account, (Embaſſy to China, vol. i. p. 172.) all the whites are computed at about 200,000, and the number of ſlaves, born in Africa, or deſcended from ſuch, is eſtimated at 600,000. Probably, the natives do not exceed one million. Labour is chiefly performed by ſlaves, of whom about 20,000 are annually imported, and of theſe about 5,000 are uſually ſold every year at Rio. In the harbour of Rio, at a place called Val Longo, are warehouſes for the reception and preparation for ſale of the ſlaves, that are imported thither, chiefly from Angola and Benguela. This ſpot is appropriated to the purpoſe of cleanſing, fattening, rendering ſleek and ſaleable, and concealing the defects of this claſs of beings, who, it is ſaid, ſeem little ſenſible of the humiliation of their condition. The average price on importation is about 28l. ſterling each. Before they are ſhipped from Africa, a duty of 10,000 reis a head is paid to the queen of Portugal's agent there; the whole amounting to about 60,000l. a-year, which goes into her privy purſe, and is not conſidered as part of the public revenue. The plantation ſlaves in the Braſils are allowed two days out of ſeven for their own purpoſes, which is a greater interval than that which is granted in the Weſt India iſlands. They are upbraided for being addicted to ſtealing and lying; their diſpoſition ſeems to be gay and active, and eaſily reconciled to their ſituation. They ſeldom recur to intoxication as a relief againſt any feelings of diſtreſs; and they are fond of muſic and dancing. Many of theſe ſlaves are the property of the crown, and of theſe, about 10,000 are employed in the diamond mines; and ſeveral of them are attached to convents. The Benedictines alone had 1000 upon their plantations; ſome of theſe fathers obſerved, that the offspring from the connection between the blacks and whites were generally endowed with much intelligence and ingenuity. Some of them they bred up carefully, and inſtructed with ſuch ſucceſs, that they thought themſelves under no neceſſity of ſending perſons to the univerſities of Portugal for a liberal education: one of this mixed breed, as they boaſted, having been promoted to a learned profeſſorſhip at Liſbon.

The European ſettlers, in all claſſes of ſociety, are much addicted to gaiety and pleaſure; and though at Rio, in particular, there are three convents for men, and two for women, the auſterity and ſelf-denial intended by their original inſtitution are little practiſed. Although the conqueſt of the country was at firſt profeſſedly undertaken for converting the natives to Chriſtianity, and ample endowments have been granted for this purpoſe, yet none of the friars now engage in the troubleſome, unſafe, and, perhaps, hopeleſs enterpriſe. No inquiſition or tribunal of the holy office has been eſtabliſhed in the Braſils. Nevertheleſs, the ceremonies of religion are regularly obſerved, and even multiplied at Rio. During the day-time, bells, and ſometimes ſky-rockets announce, at every hour, the performance of ſome ſolemnity in the churches; after ſun-ſet the ſtreets are crowded with proceſſions; and at every corner is ſtuck up, in a glaſs caſe, the image of the virgin Mary, which receives regular homage from paſſengers. Men of the lower claſſes generally wear cloaks when they walk abroad; and thoſe of the middle and higher ranks never appear without ſwords. The ladies wear their hair hanging down in treſſes, tied with ribbands, and adorned with flowers; their heads being uncovered. In their viſits to the churches, both at matins and veſpers, they are very regular; at other times, they are generally ſeated at their balconies or windows. Many of them have fine dark eyes, and animated countenances. In the evenings, they amuſe themſelves with playing on ſome kind of muſical inſtrument, chiefly the harpſichord or guitar. Among the more innocent pleaſures of both claſſes, are operas, plays, and maſquerades, and aſſemblies in a public garden. In Braſil, the convents and monaſteries are numerous, but the manufactories more rare.

The original inhabitants of the Braſils have been found incapable of being reduced to a ſtate of ſlavery, or even to the domeſtic habits of civil ſociety. Children of theſe natives have been taken into Portugueſe families, and pains have been taken, from motives of curioſity, or of humanity, to domeſticate and inſtruct them; but their nature, it is ſaid, is ſo intractable, that they conſtantly return to their original habits of ſavage life, without retaining any of the principles which might reſtrain their paſſions or caprices. Theſe people, though poor, ſeldom offer themſelves for hire, and are as ſeldom coveted by the Portugueſe, except for rowing their boats, in which practice they are remarkably expert. In their perſons they are generally ſomewhat under the middle ſize, muſcular, ſtout, and active, of a light brown complexion, black, ſtrong, uncurling hair, with very little beard; and large dark eyes, which diſcover no mark of imbecility of intellect; their aſpect, upon the whole, indicates no trace of meanneſs or vulgarity; but their looks and expreſſions are intelligent and diſtinct. Their chief pleaſure ſeems to conſiſt in boundleſs freedom; and whilſt they cheriſh an hereditary and implacable antipathy to the invaders of their country, they withdraw from the conſiderable ſettlements of the Portugueſe, and maſſacre individuals, without remorſe, wherever they are found diſperſed and unprotected. The coaſt between Rio and Bahia is ſtill very much inhabited and frequented by them; and this prevents any regular communication by land, between theſe two places. The language of the indigenous Braſilians has not been inveſtigated by the Portugueſe; but that which is moſt widely diffuſed is the Quarania, or that of the Guaranis. They have no books in their own language.

As to the government of the Braſils, each province has its reſpective chief, under the viceroy, but they receive their inſtructions from the court at Liſbon. They are uſually appointed for three years, but continued at pleaſure. Each diſtrict has a particular judge, from whoſe ſentences an appeal lies to the ſuperior tribunals of Rio Janeiro or Liſbon.

Braſil, or Brazil-*Wood.* Fernambouc Wood.—Sapan Wood. The tree which bears this important wood is the Cæsalpinia *Criſta.* Linn. This wood is very hard, takes a high poliſh, and is ſo heavy as to ſink in water. When chewed, it has a ſweetiſh taſte. It reſembles in appearance red ſaunders, but is diſtinguiſhed from it readily, by giving out its colour to water, which ſaunders-wood does not.

Braſil wood is valuable for the beautiful orange and red colour in various ſhades which it furniſhes to the dyer, and its analyſis is of ſome importance. Boiled in water for ſome time, the wood furniſhes a fine red decoction. The reſidue appears black, but alkalies will ſtill extract much colour from it. Spirit of wine and ammonia alſo readily extract a colour which is of a deeper red than the preceding.

When ſulphuric acid is added ſlowly to a freſh watery decoction of braſil wood, a ſmall quantity of red precipitate falls down, and the clear liquor now aſſumes a yellow. Nitric acid produces a ſimilar change, but the liquor is more of an orange. Moſt of the other acids alſo produce a red precipitate, and leave the liquor of various ſhades of yellow and orange. The alkalies reſtore the colour of the liquor, but with a tendency to crimſon and violet-brown.

The action of the ſolutions of tin and of alum is the moſt important. Alum gives a fine red precipitate in great abundance,

dance, inclining to crimſon, and ſubſiding ſlowly. The ſupernatant liquor alſo retains the original colour of the decoction, but a further crimſon precipitate is yielded on adding alkali enough to decompoſe the alum in ſolution. In this way, a fine crimſon LAKE and CARMINE are ſometimes prepared, which therefore conſiſt of alumine, united intimately with the natural colour of the wood, a little heightened.

Nitro-muriat of tin, added to the decoction, ſeparates the whole of the colouring matter, which falls down in great abundance, united with the oxyd of tin, and the liquor remains colourleſs. Even when the decoction has firſt been made yellow by an acid, as above-mentioned, the ſolution firſt reſtores the original colour, and then precipitates it, as with the ſimple decoction.

The ſolutions of iron blacken braſil wood, ſhewing the preſence of gallic acid.

Many of the other metallic ſolutions act ſimilarly to that of tin, forming a precipitate of the metallic oxyd with the colouring matter.

The colour of Braſil wood, though very beautiful, is fugitive, and has the additional diſadvantage of being readily darkened and rendered purple by alkalies, and therefore by ſoap. The colour is made permanent by acids, but is then changed to the ſhades of yellow; but it is peculiarly diſtinguiſhed from kermes and madder, by having the original crimſon reſtored by ſolutions of tin, after being altered by acids. Accordingly, the beſt practical dyers have employed acids and tin in their attempts to fix this beautiful colour. For further particulars as to its uſe, ſee the article DYEING.

BRASILIA, in *Ornithology*, a ſpecies of TANAGRA, of a ſcarlet colour, having the wings and tail black. Gmel. Inhabits Braſil, and other parts of South America. The ſynonymous names under which this beautiful bird is deſcribed by different authors are numerous; it is called Cardinal by Buffon, Cardinalis, Briſſon. Merula braſilica, &c. Aldr. Tye piranga, Marcgr. Chiltotl, Hern. Mex, &c. Latham names it the Braſilian Tanager. Its ſize is that of the common ſparrow. It is conjectured, that Cardinalis nævius, and Cardinalis torquatus of Briſſon, are varieties of the firſt-mentioned ſpecies.

BRASILIANA, in *Conchology*, a ſpecies of VENUS, that inhabits the ſhores of Braſil. The ſhell is lentiform, of a yellowiſh brown colour, with thin tranſverſe diſtant ſtriæ; anterior depreſſion, broad and blueiſh; poſterior one of the ſame colour, and heart-ſhaped. Bonan.

BRASILIANA, in *Ornithology* a ſpecies of STRIX, the Braſilian owl of Latham. The body above is pale and ferruginous, brown ſpotted with white: beneath white, with ferruginous, brown ſpots. Gmel. This is of the ſize of a thruſh: bill, irides, and the feet (which are ſhort) together with the toes, yellowiſh. Called by Briſſon Aſio braſilienſis.

BRASILIANA, a ſpecies of PROCELLARIA, the Braſilian petrel of Latham, Puffin de Bréſil of Buffon; and majague of Ray. The colour is blackiſh: throat yellow.

BRASILIANA, a ſpecies of CERTHIA, deſcribed by Latham under the name of the black and violet creeper. The colour is black, with the crown of the head golden green: rump, chin and throat, violet: breaſt purple, inclining to cheſnut. Gmel. &c. Length of this bird 3½ inches. This is Le Guit-guit noir et violet, of Buffon. Inhabits Braſil.

BRASILIANORUM, in *Entomology*, a ſpecies of APIS, that inhabits America. This kind is hairy, and blueiſh black: thighs at the baſe black. Fabr. Obſ. the beak is conic, or rather ſubulate: eyes black; antennæ above fuſcous, beneath teſtaceous: jaws black, and bidentated: thighs teſtaceous, glabrous, and compreſſed: ſhanks, and ſoles of the feet, with teſtaceous pile.

BRASILIANUS, a ſpecies of CERAMBYX, the thorax of which is ſpinous and ferruginous: wing-caſes pointed, teſtaceous, with three little glabrous yellow lines. Fabr. Inhabits Braſil.

BRASILIANUS, a ſpecies of SCARABÆUS, found in the dung of cattle in Braſil. The colour is deep black: ſhield of the head emarginate: wing-caſes ſtriated.

BRASILIANUS, in *Ornithology*, a ſpecies of CAPRIMULGUS, of a blackiſh colour, varied with ſmall white ſpots, and yellow: beneath, varied with black and white. This bird inhabits Braſil. The wings and tail are equal: area of the eyes yellow: bill and eyes black: leſs white. Braſilian goat-ſucker of Latham.

BRASILIASTRUM, in *Botany*, falſe Braſil wood. Aubl. Guian. Pl. 390. Claſs *diœcia*. Gen. Char. Male flowers unknown. Female flowers. *Cal.* villous without, deeply divided into five pointed ſegments. *Corol.* petals five, lanceolate, a little longer than the calyx. *Piſt.* germ. ſuperior, ovate, ſmooth; ſtyle none; ſtigma two-lobed, pubeſcent. *Pericarp.* drupe, ſoft, pulpy, ſhaped like an olive, but rather ſmaller, coral-red, ſlightly acid.

Sp. 1. B. *hirſutum*, a ſhrub from eight to ten feet high. *Stem* ſtraight, near two inches in diameter, with a browniſh grey bark, finely wrinkled. *Branches* alternate, growing near the ſummit of the ſtem. *Leaves* in tufts, near a foot and half long, pinnate with an odd one, on a pubeſcent reddiſh petiole. Folioles from fifteen to nineteen, about three inches long, on ſhort petioles, oval-pointed, entire, or ſlightly angular, ſmooth, green, and ſhining above, villous at their edges. Flowers in terminal, branched racemes, very ſmall, of a dull red colour. It is a native of St. Domingo. Jamaica, and Guiana, and, like the true Brazil (Cæſalpinia) is uſed for dyeing red, but does not produce ſo fine a colour. Aubret relates, that its leaves bruiſed when freſh communicate to cotton a green colour, which ſoon becomes violet. It is ſaid by Plumier, that its ſtem, if wounded, yields a cauſtic juice, which fixes an almoſt indelible ſpot upon whatever part of the human body it happens to fall. Deſcribed by La Marck from a dried ſpecimen without flowers. 2. B. *glabrum*, differs from the preceding in being ſmaller, leſs proper to be uſed in dyeing, and in having its leaves perfectly ſmooth. It is a native of St. Domingo. A ſingle female plant has been cultivated in the royal garden at Paris, which flowered in the beginning of November.

BRASILIENSIS, in *Entomology*, a ſpecies of CICADA, (*Membracis* Fabr.) The thorax of this kind has two horns, is ſpotted with white, and is produced behind beyond the length of the abdomen. Inhabits Braſil.

BRASILIENSIS, a ſort of GRYLLUS (*Acheta*), that inhabits Braſil. Its general colour is fuſcous; wings tailed and longer than the elytra; back pale; tail aſcending, and the length of the body. Fabr. &c.

BRASILIENSIS, in *Ornithology*, a ſpecies of FALCO, with yellow feet; body rufous, varied with white and yellow dots; tail variegated with white and fuſcous. Gmel.

Willughby and Latham deſcribe this under the name of the Braſilian kite, being found in Braſil, where, we are informed, it is highly deſtructive to the domeſticated poultry. It is as large as our common kite. The beak and claws are long, very ſharp, and black: eyes with the irides yellowiſh. Buffon has deſcribed it by the name of *caracara*. The ſame bird is *circus braſilienſis* of Briſſon.

BRASILIENSIS, a ſort of PSITTACUS, or parrot, that is found in Braſil. It is of the ſize of a pigeon, of a green colour, with the face red, the temples blue, and the orbits of the eyes cinereous. Gmel. Whether it be diſtinct from the *leſſer green parrot* of Edwards (*pſittacus autumnalis* of Latham),

tham), remains doubtful. It is the ſame bird as Buffon calls *crick à tête bleu*.

Brasiliensis, a ſpecies of Alcedo, the plumage of which is variegated with rufous, cheſnut, fuſcous, and white; beneath white; greater quill feathers and tail rufous, with tranſverſe ſpots. Gmel.

This bird is of the ſize of the common European king's fiſher: the bill and eyes are black; band acroſs the eyes, with the legs and claws brown. Buffon calls it *gip-gap*. It is *iſpida Braſilienſis* of Briſſon; and the *Braſilian king's fiſher* of Engliſh writers.

Brasiliensis, a ſpecies of Merops, of a fine red colour, variegated above with fuſcous and black; wings and tail pale blue. Gmel. &c.

This is the *Braſilian bee-eater* of Latham; *merops rouge et bleu* of Buffon; *apiaſter Braſilienſis* of Briſſon; and *pica Braſilienſis* of Seba. The length of this bird is nine inches. As the name implies, it is an inhabitant of Braſil.

Brasiliensis, the ſpecies of Anas, called by Engliſh writers the *marecā duck*. The colour of its plumage is fuſcous; beneath cinereous and gloſſy; between the eyes and beak is a yellowiſh or ochraceous ſpot; chin white; tail wedge-ſhaped and black. This is a native of Braſil.

Brasiliensis, a ſpecies of Ardea, with a ſmooth head; body blackiſh, dotted with yellow; quill and tail feathers, with the bill and legs blackiſh. Gmel. Briſſ.

This is a bittern of large ſize, meaſuring two feet eight inches. Brown, in his Natural Hiſtory of Jamaica, calls it the *clucking hen*. It is named *ſoco* by Marcgraave; by Buffon *onore des bois*. Inhabits Braſil and South America in general.

Brasiliensis, a ſpecies of Emberiza, deſcribed ſpecifically by Gmelin, as having the crown, collar, and body beneath yellow; back, wings, and tail greeniſh, variegated with fuſcous and yellow.

Inhabits Braſil; its ſize that of the common ſparrow. Latham names it the *Braſilian bunting*. Ray has it under the title of *guiram heemgata*. It is *le guirnegat* and *bruant du Breſil* of Buffon.

Brasiliensis, a ſpecies of Turdus, of a black colour, beneath ruſty yellowiſh; rump ferruginous; tail ſomewhat wedged, and having the outer feathers totally white, and the reſt white only at the tips. Gmel. *Obſ.* Acroſs the wings is a white ſtripe; legs brown.

This is the yellow-bellied thruſh of Latham.

Brasiliensis, a ſpecies of Tanagra, of a ſmall ſize, being about ſix inches in length, that is found in Braſil. The general colour is black, beneath white; throat and rump blueiſh; face and breaſt black. Gmel.

Obſ. The beak is blackiſh; head blueiſh. Called by Latham *turquoiſe tanager*. Marcgraave has it under the name of *guira genoia*; and Buffon, thoſe of *turquin* and *tanagra bleu du Breſil.*

Brasiliensis, in *Zoology*, a ſpecies of Rana, or toad of a yellowiſh aſh-colour, with waved red ſpots; beneath glabrous. Laur. Inhabits Braſil.

BRASLAW, in *Geography*, a city of Lithuania, in the palatinate of Wilna, on the ſide of a lake, which communicates with the Dwina; 76 miles N.N.E. of Wilna. N. lat. 55° 36′. E. long. 27° 20′.

BRASMA, in the *Medical Writings of the Ancients*, a name given by Dioſcorides and others to a light, empty, and good for nothing kind of black pepper. This was no peculiar ſpecies of pepper, but, as John Bauhine has well obſerved, it was the ſame with the pepper we now frequently meet with, which has decayed upon the plant. Dioſc. lib. ii. cap. 189.

BRASPARS, in *Geography*, a town of France, in the department of Finiſterre, and chief place of a canton, in the diſtrict of Châteaulin, 8 miles N.E. of Châteaulin.

BRASS, or Latten, *Laiton Jaune*, Fr.; *Meſſing* G. This very important alloy is a mixture of copper and zinc in various and uncertain proportions, ſo intimately united as to form a homogeneous malleable yellow metal, applicable to a vaſt variety of purpoſes in the arts, and capable of being wrought in various ways with the greateſt facility.

Mere fuſion will ſcarcely produce a perfect union between copper and zinc; for the latter metal, being highly volatile and combuſtible, readily takes fire, and burns off at a heat neceſſary to melt the copper; and hence, when the metals are ſimply melted together, before an uniform alloy can be obtained, the proportion of zinc is every moment leſſening by its volatilization, and would continue to fly off in this manner, by the continuance of the fuſion, till at laſt ſcarcely any thing but the copper would be left behind. In order, therefore, to combine copper with as much zinc as it can take up, ſo as to retain its malleability, the very ingenious proceſs of *dry cementation* has been reſorted to in the manufacture of braſs, which is performed by ſtrongly heating ſmall pieces of copper in cloſe veſſels with zinc in the ſtate nearly of vapour, whereby it is thoroughly penetrated with the zinc, and unites with it into a perfect alloy.

Zinc being a volatile metal, it can only be procured from its ores by ſublimation; and the proceſs of obtaining it (which will be deſcribed at length under that article), is to heat ſtrongly a mixture of the native oxyd with charcoal in a cloſe veſſel, with no other exit for the vapour than a tube dipping its further end in water. As ſoon as the charcoal reduces the oxyd to the metallic ſtate, the zinc riſes in vapour, paſſes through the tube, and is condenſed in the water. A ſimilar reduction takes place in braſs-making, only, inſtead of conveying the vapour of the zinc out of the crucible, in which it is formed, copper is incloſed in the ſame veſſel, which being then thoroughly heated, readily abſorbs the zinc as ſoon as reduced to the metallic ſtate, fixes it, contracts a very intimate union with it, and the reſult is perfect braſs.

Braſs is made in many countries, but no where more extenſively and better than in England, in which both the materials are in great abundance. The ores of zinc are ſeveral ſpecies of *calamine*, and of *blende* termed by the miners *black jack*, which are found abundantly in Devonſhire, Derbyſhire, and North Wales, accompanying the lead ores, and in other places. Theſe are chiefly oxyds or carbonated oxyds of zinc, and require a previous calcination before they are fit for braſs-making. At Holywell, in Flintſhire, the calamine, which is received raw from the mines in the neighbourhood, is firſt pounded in a ſtamping mill, and then waſhed and ſifted, in order to ſeparate the lead with which it is largely admixed. It is then calcined on a broad ſhallow brick hearth, over an oven heated to redneſs, and frequently ſtirred for ſome hours; or, in ſome places, a conical pile is compoſed of horizontal layers of calamine alternating with layers of charcoal, and the loweſt layer is of wood in large pieces, with intervals left for the draught of air through the centre of the pile, to maintain the combuſtion thoroughly.

The calamine being fully calcined is then ground in a mill, and mixed at the ſame time with about a third or fourth part of charcoal, or in ſome places with pit-coal, which laſt, however, injures the malleability of the braſs. This mixture is then put into large cylindrical crucibles along with alternate layers of ſmall bits of copper, conſiſting either of the clippings of copper plates, or of copper ſhot, made by melting any refuſe pieces of this metal, and pouring it into cold water, which divides it into very ſmall rounded ſhot-like fragments. Powdered charcoal is put over all, and the crucibles are covered and luted up. The braſs furnace has the form of the fruſtum of a hollow cone, or a cone with the baſe downwards, and the apex cut off horizontally. At the bottom of the furnace is a circular grate, or perforated iron plate, coated with clay and horſe-dung, to defend it from the action of the fire. The crucibles ſtand upon the circular plate, forming a circular row with one in the middle. The fuel, which in England is coal, is thrown round the crucibles, and is thrown into the furnace at the upper part of it, or the truncated apex of the cone. A perforated cover, made of bricks or clay, and kept together by iron bars, is fitted to this opening. This cover ſerves as a regiſter to regulate the heat; ſo that when it is to be increaſed, the cover is to be partly or entirely removed, and a free draught admitted to the external air, which paſſes along an underground vault to the aſh hole, through the holes in the circular grate betwixt the crucibles, and through the upper mouth, along with the ſmoke and flame, into an area, where the workmen ſtand, which is covered by a large dome with a chimney to conduct the ſmoke out of doors. To diminiſh the heat, the regiſter cover is put on the mouth of the furnace, leaving thereby no other exit for the ſmoke and flame than the holes of the cover. The time requiſite for heating the crucibles varies conſiderably in different works, being determined chiefly by the nature of the calamine or other ore of zinc employed, and alſo by the ſize of the crucibles. In the great way, at leaſt ten or twelve hours are required. At Holywell about twenty hours are employed.

During the proceſs, and eſpecially towards the latter end, part of the reduced zinc which eſcapes, being abſorbed by the copper, finds its way in vapour through the crucible lids, and burns around them with the beautiful blue flame and white ſmoke peculiar to this volatile metal.

The heat required for braſs-making is ſomewhat leſs than what is neceſſary to melt copper, for braſs is more fuſible than copper, and the zinc is able to penetrate copper when kept at a full red heat. When the braſs is judged to be made, the heat is increaſed to fuſe the whole down into one maſs at the bottom, and the crucibles are then removed, and the melted braſs poured out into moulds. At Holywell, ſix crucibles are uſed to one furnace; and the quantity of braſs procured from them all is ſufficient to fill one of them. This makes a ſingle large braſs plate, which is manufactured in the ſame way as copper plate. Or, more accurately, from forty pounds of copper and ſixty pounds of calamine, about ſixty pounds of braſs are obtained, beſides that a conſiderable quantity of zinc burns off in the proceſs above-mentioned.

The above is the uſual proceſs of making braſs in moſt parts of England, and is eſſentially the ſame wherever this alloy is manufactured, but with ſome variation as to the choice of ingredients, their proportions, the time of fuſion, and other ſmaller circumſtances. In Goſlar in Saxony, inſtead of a native calamine, the *cadmia*, or ſublimed oxyd of zinc is uſed, which is collected in a particular part of the chimnies of the reverberatory furnaces, in which the lead ores and blendes are roaſted. The proportions of the ingredients alſo vary conſiderably. According to Swedenborg, they are in Goſlar, 30 parts of copper, 40 to 45 of cadmia, and twice the volume of charcoal; in many of the manufactories in France, 35 of copper, 35 of old braſs, 40 of calamine, and 20 to 25 of charcoal; in Sweden, 30 of copper, 20 to 30 of old braſs, and 46 of calamine, with charcoal ſufficient; or 40 of copper, 30 of old braſs, and 60 of calamine; in this country, generally about 40 of copper, and 60 of calamine. The product of braſs varies alſo; but it ſeems to be in few places ſo great as in ſome of the works of England, where, as already mentioned, 40 pounds of copper increaſe to 60 pounds of braſs. This ſuperior quantity is aſcribed to the ſmallneſs to which the copper is previouſly reduced by pouring it melted into water, which, it ſeems, is not always practiſed elſewhere, and probably too to the goodneſs of the calamine.

At Stolberg, near Aix la Chapelle, where braſs is made to a very great extent, the furnaces are cylindrical, and each contains eight crucibles arranged in two tiers of four each. The crucibles are fifteen inches high, twelve inches deep, and eight or nine wide. The proportions are 40 pounds of copper, 65 of calamine, and double its volume of charcoal. After the fire has been kept up for twelve hours, a workman takes off with an iron trowel all the ſcum and charcoal which ſwim upon the liquid, and when cooled form a maſs called *arkeſt*. This, examined by a glaſs, is found to conſiſt of calamine and copper particles cohering together, but not completely united. The braſs reſulting from this firſt proceſs is coarſe, brittle, and unequal in texture, and requires a ſecond fuſion, before it is fit to be wrought. For this purpoſe the ſame crucibles are again employed, and are filled, firſt with three handfuls of the mixture of calamine and charcoal, over which are put two or three pounds of the impure braſs broken in pieces, then more calamine and charcoal, with a piece of the *arkeſt*, and over all the calamine and charcoal powder. They are then heated ſtrongly for two hours, after which the braſs is fit to be caſt into plates.

A ſingle fuſion, where the fire is kept up long enough, and the materials are good, is certainly ſufficient to make good malleable braſs; but it is probable, that the fineſt ſorts undergo a ſecond operation with freſh calamine and charcoal. Some ſecrecy is, however, obſerved by thoſe individuals who have the reputation of making the very fineſt article.

In the laboratory, by way of experiment, braſs may be made in a much ſhorter time by uſing the ſame materials, that is to ſay, copper-ſhot buried in a mixture of calamine and charcoal, putting the crucible in a wind furnace, and heating ſlowly for half an hour, till the zinc begins to burn off in blue flame round the cover of the crucible, and then raiſing the fire, and heating briſkly for an hour longer. This proceſs of cementation of copper is alſo ſhewn very neatly by a ſomewhat different management, as given by Cramer. Put the mixture of calamine and charcoal into a crucible; cover it with a thin layer of clay, over which, when dry, lay a thin plate of copper, and cover the whole with fine charcoal powder, and a luted cover to the crucible. Apply heat gradually, and the vapour of the reduced zinc will riſe through the floor of clay, will penetrate the red-hot copper above it, and convert it gradually into braſs, which, at the end of the operation, will be found lying melted upon the ſtratum of clay; and the increaſe of weight, which the copper will be found thus to have gained, will afford a good practical teſt of the goodneſs of the calamine, and its fitneſs for braſs-making in the great way.

Braſs is wrought into plates by caſting and laminating. At Stolberg the plates are firſt caſt into a mould formed of two blocks of hard granite five feet long, three and a half broad, and eight inches thick. Theſe are placed one above the other, and the upper one is raiſed by a pulley, and ſmeared with cow-dung previous to caſting. To give the plate the requiſite thickneſs, hoops of iron of different dimenſions are adapted to the under ſtone, ſo as to confine the melted metal, and regulate its thickneſs. The ſtones are gently inclined before the metal is run into them. Theſe plates are afterwards laminated and manufactured in a thouſand different ways.

The moſt important properties of braſs, compared with copper, are the following: its colour is much brighter, and more approaching to gold; it is more fuſible than copper, as is ſeen from the circumſtance, that leſs than a copper-melting heat is ſufficient for the making of braſs; it is leſs ſubject to ruſt, and to be acted on by the vaſt variety of ſubſtances which corrode copper; and laſtly, it is equally malleable when cold, and more extenſible than either copper or iron; and hence is peculiarly fitted to be made into wire. Braſs, however, is only malleable when cold. By hammering, braſs is found to become magnetic, perhaps only from the particles of the iron hammer which may have been beaten into its ſurface; but this makes it neceſſary to uſe unhammered braſs about compaſs-needles, and ſimilar magnetic apparatus. The expanſion of braſs has been very accurately determined, as this metal is moſt commonly uſed for mathematical and aſtronomical inſtruments, where the utmoſt preciſion is required. Mr. Smeaton found that 12 inches in length of caſt braſs at 32°, expanded by 180° of heat, (or at the boiling point of water,) 225 ten thouſandth parts of an inch: braſs wire in the ſame circumſtances expanded 232 parts; braſs 16 parts, with one of tin, expanded 229 parts. The expanſion of hammered copper is only 204 parts, but that of zinc is 353; ſo that braſs holds a middle place in this reſpect between its two component metals.

The zinc is readily ſeparated from braſs by fire. When braſs is heated ſtrongly in open veſſels to at leaſt a copper-melting heat, the zinc of the braſs takes fire, and ſlowly burns away. If this is continued long enough, little elſe is left but copper, though ſtill retaining a ſmall portion of zinc, which no further continuance of the heat will entirely ſeparate.

Some kinds of very fine braſs, it is ſaid, are not made by cementation in the way already deſcribed, but by a more ſpeedy and direct union of copper and zinc, care being taken to prevent the acceſs of air to the materials while in fuſion. Very fine braſs may alſo be made in the ſmall way, (and doubtleſs alſo in manufacture,) by mixing the oxyds of copper and zinc, and reducing them together. This plan is ingenious, and the intimate mixture of the two metals, the great object in braſs-making, is probably more accurately obtained in this way than even by the common proceſs of cementation. The following experiment on this plan is given by Sage: Mix together 50 parts of oxyd of copper, remaining after the diſtillation of verdigris (which is a very pure oxyd) with 100 parts of lapis calaminaris, 400 parts of black flux, and 30 parts of charcoal powder; melt together, till no longer any blue flame is ſeen to burn round the top of the crucible. When cold, a fine button of braſs is found beneath the ſcoria, weighing a ſixth more than the copper obtainable from the oxyd of this metal reduced in the ſame way, but without the calamine. This braſs has a very fine colour, like gold. On this experiment M. Sage obſerves, that a ſixth increaſe of weight gained by the copper, is the proportion which conſtitutes the fineſt braſs, and that which copper will always retain, however long kept in fuſion, provided the acceſs of air is prevented, as in this caſe, by the alkaline ſcoria. When the copper retains a fifth of zinc, the colour is not ſo fine; and any quantity above a ſixth will be expelled by the heat, even when the alloy is covered; and, on coming to the air, the zinc will burn. Hence the ceſſation of the zinc flame is in this experiment the proof, that the copper now retains no more than a ſixth of zinc, and is fine braſs.

The analyſis of braſs is a point of ſome conſequence, and ſeveral modes have been propoſed, ſome good, others defective.

Braſs may, in ſome degree, be analyſed by ſtrongly heating in an open veſſel, as above mentioned. The zinc then burns off, and when no more flame is given out, the copper is ſuppoſed to be pure. But Dizé has found that this mode is very uncertain; ſo that no two aſſays of the ſame ſample correſpond, for it is not eaſy to tell when all the zinc is burnt off that can thus be volatilized; and the increaſe of weight, cauſed by the oxidation of part of the copper, throws a further uncertainty on this method.

Neither will a ſimple ſolution of braſs in the ſulphuric, or any other acid, and cryſtallization, anſwer the purpoſe; for, though much of the cryſtallized ſulphat of copper may readily be picked out from the ſulphat of zinc, the perfect ſeparation of the two kinds of cryſtals is impracticable, and at laſt one ſpecies becomes mixed with a portion of the other, even in the reſpective cryſtals.

M. Dizé propoſes the following methods:

1. Diſſolve the braſs in nitric acid, which takes up the copper and zinc, and leaves any tin with which it is often alloyed. Decompoſe the clear nitrated ſolution by pot-aſh, rediſſolve the precipitate in ſulphuric acid, and add a piece of clean bright iron to the ſolution, previouſly diluted with ſix parts of water. The copper is thus precipitated in the metallic ſtate, and the ſolution now holds ſulphat of iron, and ſulphat of zinc. Theſe M. Dizé propoſes to ſeparate by gallic acid, which ſlowly precipitates the iron, and leaves the zinc. Laſtly, the ſulphat of zinc may be decompoſed by a carbonated alkali, and the quantity of zinc in the carbonat may be eſtimated according to proportions, which will be preſently mentioned.

This method is uſeful, but the ſeparation of the iron from the zinc by the gallic acid, is exceſſively tedious. Sulphuretted hydrogen gas would be much ſhorter, and to be preferred.

2. Diſſolve braſs in nitric acid, dilute with ſix parts of pure water, and immerſe in the ſolution a cylinder of bright clean lead. The copper ſpeedily ſeparates in the metallic ſtate round the lead, which laſt takes its place in the ſolution. As this advances, the liquor loſes its blue colour; and when all the copper is ſeparated, it becomes ſlightly yellow. To determine, however, whether all the copper is ſeparated, add a freſh clean piece of lead, and boil the ſolution for ſome time. This now contains nitrat of lead, and nitrat of zinc. Sulphuric acid will precipitate thence the lead in the form of an inſoluble ſulphat, and the nitrated zinc may then be decompoſed by a carbonated alkali. On this precipitation, however, there are ſome obſervations to be made. Copper, when diſſolving in nitric acid, abſorbs nearly $\frac{40}{100}$ of its weight of oxygen; but lead, under the ſame circumſtances, abſorbs only $\frac{16}{100}$. Hence (as Vauquelin remarks on this ſubject of the analyſis of braſs) 100 parts of copper diſſolved in nitric acid would require, for their diſoxygenation, (which takes place whenever one metallic oxyd in ſolution is precipitated in a metallic form by another metal immerſed in it,) full 250 parts of lead, which laſt is of courſe oxidated in proportion as the copper precipitates in the metallic form. But this large quantity of oxyd of lead cannot be held in ſolution by the nitric acid, except this is largely in exceſs; and this explains why, as M. Dizé has obſerved, a portion of oxyd of lead is apt to form at the latter end of the proceſs, and to mix with the copper, ſo as to require a ſubſequent operation to get the copper free from it. Nor will an exceſs of acid enſure the purity of the precipitated copper; for M. Vauquelin finds that

if 50 grains of pure copper are diſſolved in nitric acid to exceſs, and then precipitated by metallic lead, of which about 220 grains are requiſite, the cupreous precipitate weighs 138 grains inſtead of the original 50 grains, and therefore is not pure copper, but an alloy of this metal, with a very large proportion of lead. This method, therefore, of analyſing braſs is highly erroneous, unleſs the ſuppoſed copper precipitate be ſeparately treated, in order to free it from the large proportion of lead with which it muſt be alloyed.

The following methods are given by Vauquelin:

3. Diſſolve a given quantity of braſs in nitric acid, put it in a well-cloſed bottle, and add cauſtic pot-aſh to exceſs, ſo that there ſhall be a ſenſible alkaline taſte in the liquor; ſhake the mixture well, and keep it a ſhort time in digeſtion. By this ſimple proceſs the oxyd of copper is precipitated by the alkali, but the oxyd of zinc is re-diſſolved in it; and if the liquor be now filtered, the alkaline ſolution of zinc paſſes through clear, and the oxyd of copper is left behind. This oxyd is brown, and nearly metallic in appearance. When thoroughly waſhed, and gently dried, it contains 65 per cent. of metallic copper. If one is aſſured by a previous aſſay, that the braſs only contained copper and zinc, when the quantity of copper is thus obtained, that of the zinc may be inferred from the difference between the copper, and the weight of the braſs employed; or elſe the alkaline ſolution of zinc may be ſuperſaturated with ſulphuric acid, ſo as at firſt to precipitate, and afterwards to re-diſſolve the zinc, after which this metal may be precipitated as a carbonat, by adding carbonat of pot-aſh or ſoda. A very trifling quantity of copper paſſes into the alkaline ſolution of the zinc, occaſioned by a ſmall portion of ammonia formed by the nitrated metals when the cauſtic alkali is added, which takes up this atom of copper. If neceſſary, the copper might be again precipitated by heating the alkaline ſolution, ſo as to expel the ammoniac; but not to boiling, otherwiſe ſome of the zinc would ſeparate from the alkali, and cauſe a greater error.

4. Diſſolve braſs in ſulphuric acid, dilute with 20 times as much water, and immerſe a ſtick of zinc exactly weighed. The copper ſoon precipitates completely in the metallic ſtate, which is to be well waſhed and weighed. The ſolution now contains only the zinc of the braſs, and the zinc diſſolved out of the ſtick of metal immerſed. By weighing the undiſſolved ſtick of zinc, and precipitating the whole by carbonat of pot-aſh or ſoda, an eaſy calculation will give the portion of zinc belonging to the braſs: or, more ſimply, this may be inferred from the copper obtained, and the quantity of braſs originally employed.

It only remains, on the ſubject of analyſis, to give the metallic contents of carbonat of zinc. Dizé diſſolved 100 parts of zinc in nitric acid, precipitated it by carbonated ſoda, and this product, well waſhed and dried, now weighed 180 parts. Hence 100 parts of carbonat of zinc thus obtained, contain 55.5 of metallic zinc.

On the other hand, Vauquelin found that carbonat of zinc obtained from the ſulphat by carbonated pot-aſh, well waſhed and calcined in a crucible to expel all the carbonic acid, contained 69 per cent. of metallic zinc. Hence the carbonat obtained by Dizé, it is obvious, muſt only have been dried at a low temperature, probably that of boiling water; and from either of the above data the quantity of zinc may be eſtimated: or elſe the carbonat or oxyd may be mixed with charcoal, and ſtrongly heated in an earthen retort, without the acceſs of external air, by which the zinc will be reduced, and will diſtil over, and condenſe in the cool neck of the retort in the metallic ſtate.

Analyſis ſhews a vaſt variety in the proportions of the different ſpecies of braſs uſed in commerce; nor is it eaſy to determine whether the perfection of this alloy depends on any certain proportion of the two metals, or the mode of manufacture. In general, the extremes of the higheſt and loweſt proportion of zinc are from 12 to 25 parts in the hundred. Even with ſo great a quantity of zinc as 25 per cent., the ductility of braſs is not injured, provided it be manufactured with care, though zinc itſelf is ſcarcely malleable. In proof of this, Dizé analyſed a ſpecimen of a remarkably fine braſs, which is made at Geneva for eſcapement wheels, and other nicer parts of watch-making. This metal unites great beauty of colour to a high degree of ductility; and the bars that are perfect fetch a very high price with the watch-makers of this town, ſo celebrated for this delicate manufacture. This braſs was found to conſiſt of 75 of copper, and 25 of zinc. Probably, too, the copper was Swediſh, or of ſome other very ſuperior kind. The common braſs of Paris appears to contain no more than about 13 per cent. of zinc. The Engliſh, probably, contains more zinc.

The uſe of braſs is of very conſiderable antiquity; but from the inaccuracy of the ancient deſcriptions, and their ignorance of the true nature of zinc and its ores, much uncertainty prevails on this ſubject. Moſt of the genuine relics of antiquity of this kind are compoſed of various mixtures of braſs, with tin and other metals, and are rather to be termed *bronzes*. For this and the other yellow alloys of copper, ſee Copper.

Keir, in a note to the article braſs in Macquer's dictionary; Watſon's Eſſays; Sage in J. Phyſ. vol. xxxviiii.; Dizé in ditto, vol. xlviii.; Repertory, vol. xiv.; Vauquelin in An. Ch. vol. xxviii.; Encycl. Meth.; Original, &c.

Brass, in *Antiquity*. See Æs.

Brass, in a more extenſive ſenſe, includes copper, and all the mixtures or alloys of copper with other minerals. In which ſenſe, braſs amounts nearly to the ſame with the Roman æs, and the French *airain*.

Brass-*lumps*, or Brasses, in *Mineralogy*, a common name among the colliers for the maſſes of pyrites that are found to accompany, more or leſs, the different kinds of coal.

Brass *d'Or*, in *Geography*. See *Cape* Breton.

Brass, St. *Bay of*, lies eaſt by north from cape d'Aguillas, on the eaſt ſide of the cape of Good Hope. S. lat. 34°.

Brass *iſland*, one of the ſmaller Virgin iſlands, ſituate near the N.W. end of St. Thomas's iſland, on which it is dependent.

Brass *town*, a town of America, in the ſtate of Teneſſee, ſituate on the head waters of Hiwaſſee river, about 100 miles ſouth from Knoxville. Two miles S. from this town is the "Enchanted mountain."

Brass *wire*. See Wire.

BRASSA. See Bressay.

BRASSAC, a town of France, in the department of Puy de Dôme, and chief place of a canton in the diſtrict of Iſſoire, ſeated on the Allier; 3 leagues S. of Iſſoire.

Brassac *de Belfourtas*, a town of France, in the department of the Tarn, and chief place of a canton in the diſtrict of Caſtres; 4 leagues E. of Caſtres. The town contains 1149, and the canton 4190, inhabitants; the territory includes 195 kiliometres and 5 communes.

BRASSAU. See Cronstadt.

BRASSAVOLA, Antonio-Musa, in *Biography*, profeſſor in medicine and philoſophy at Ferrara in Italy, who flouriſhed in the early part of the 16th century, was a diligent inveſtigator into the properties of medicines, both ſimple and compounded. He was educated under Manardi and

Leonicini, two celebrated profeſſors at Ferrara, but finiſhed his ſtudies at Paris. On his return, he was made phyſician to Hercules II. his ſovereign, to whoſe daughter he dedicated one of his works. As he ſoon came into great requeſt in his profeſſion, and had acquired conſiderable knowledge in botany, and other parts of natural hiſtory, to which he had, in a particular manner, turned his attention, he was able, from his own experience, to correct ſeveral errors of his teachers, on the nature and qualities of drugs. The firſt work by which he became known, is "Examen omnium ſimplicium medicamentorum, quorum uſus in publicis officinis eſt." Romæ, 1536, fol. This work has been frequently re-printed. In the courſe of it he examines the qualities of ſome poiſonous drugs, and their effects on dogs, and other animals. He twice ſaw a cartilage, he ſays, of the form of a croſs, in the hearts of two ſtags. He had received manna from Syria, but preferred the Calabrian. He ſhews that calcined mercury had been early given in the cure of the lues venerea, though then diſuſed. "De medicamentis tam ſimplicibus, quam compoſitis, quæ unicuique humori ſunt propria," Tiguri, 1555, 8vo.; containing many valuable obſervations, principally from experience, on the effects of various purging medicines. He effected the cure of a maniacal complaint, in a perſon of rank, by the uſe of black hellebore, which had been many years diſuſed and proſcribed. "Examen omnium ſyruporum, quorum publicus uſus eſt," Lugduni, 1540, 8vo. This, as well as ſeveral other of his works, is written in the form of a dialogue, between himſelf and an apothecary. In the commencement, the apothecary gives an account of his manner of treating his wife, from whom he exacts the ſame implicit ſubmiſſion that Petruchio requires from Catherine, on their wedding-day. When retired to their chamber, he ſays, he threw a pair of breeches on the ground, and giving his bride a ſtick, ſimilar to one he held in his hand, inſiſted on her contending with him who ſhould thereafter wear them; and having then conquered her, he had taken care to keep up his authority. The doctor reproves his gueſt, and gives him ſome good rules for his future conduct. He afterwards, and in ſucceſſion, publiſhed "Examinations of the compoſitions of electuaries, pills, lohochs, trochuſes, &c." beſides "Commentaries on parts of the works of Hippocrates," "A Complete liſt of Galen's works," "A Treatiſe on the venereal diſeaſe, on the uſe of China root, guiacum, &c." in all of which he has many original obſervations. He died, according to Carrere, in 1554. His ſon,

BRASSAVOLA, JEROM, publiſhed, in 1590, "De officiis medicis libellus," 4to. Ferrara. In this he treats largely on the duties of phyſicians, on their conduct in conſultation, on the ſigns from which the prognoſtics in diſeaſes may be drawn; alſo, "In primum Hippocratis aphoriſmorum librum expoſitio," 4to. Ferrara. Haller. Bib. Med. Botan. Eloy Dict. Hiſt.

BRASSBRIDGE, THOMAS, of Northampton, publiſhed, in 1578, "The poor man's jewel," "A treatiſe of the peſtilence, and a declaration of the virtues of the herbs carduus benedictus, and angelica," 8vo. London. Haller. Bib. Botan.

BRASSE, in *Ichthyology*, a ſpecies of PERCA.

BRASSI, in *Geography*, a town of France, in the department of the Nievre, and chief place of a canton, in the diſtrict of Clamecy; 10 miles E. of Corbigny.

BRASSICA, in *Botany*, is derived by C. Bauhine from βραζω or βρασσω, which he ſays ſignifies to devour, becauſe it is eagerly eaten by cattle; but this is a ſenſe in which the Greek word does not appear to be uſed by ancient writers. Linnæus derives it from the ſame word, and rightly rendering it to boil, ſuppoſes the plant was ſo called from its being a common pot-herb. Scaliger conjectures that it was originally written πρασικης, from πρασια, a diviſion or bed in a garden. But as the word was not known to the Greeks, who firſt called the plant from which Linnæus has named the genus ραφανος and afterwards κραμβη, it is probably of Latin origin. By Varro and Feſtus it is derived from præſica, on account of its being cut off from the ſtem. This ſeems forced, and the etymology muſt be allowed to be altogether uncertain. Lin. gen. pl. 820. Reich. 884. Schreb. 1096. Juſſ. 238. Gært. 434. Tab. 143. La Marck Pl. 565. Smith Flor. Brit. 311. Claſs, *tetradynamia ſiliquoſa*. Nat. ord. *ſiliquoſæ* or *cruciformes*. *Cruciferæ*, Juſſ.

Gen. Char. *Perianth* four-leaved, erect, a little converging. Leaves lanceolate-linear, concave channelled, gibbous at the baſe, erect, parallel, deciduous. *Cor.* four-petalled, cruciform. *Petals* ſubovate, flat, expanding, entire, gradually leſſening into claws about the length of the calyx; nectariferous glands four, ovate, one between each of the ſhorter ſtamens and the piſtil, and one between each of the longer ſtamens and the calyx. *Stam.* Filaments ſix, awl-ſhaped, erect, of which two oppoſite to each other are the length of the calyx, and four longer. Anthers erect, acuminate. *Piſt.* germ, columnar, the length of the ſtamens; ſtyle ſhort, the thickneſs of the germ: ſtigma capitate, entire. *Pericarp.* ſilique long, rather round, but flattened on each ſide, and in ſome ſpecies quadrangular, two-celled; partition prominent at the apex, two-valved, valves ſhorter than the diſſepiment. *Seeds* many, globular.

Eſſ. Char. *Cal.* erect, a little converging. *Seeds* globular. Diſſepiment prominent. Nectariferous glands four.

It is diſtinguiſhed from ſinapis by its firm and cloſe calyx, and from raphanus by its ſiliques not being articulated. Its diſtinctive character is however very obſcure, and ſome of its ſpecies might be referred to other genera.

* *Siliques ſlender, four-angled, with a very ſhort permanent ſtyle.*

Sp. 1. B. *orientalis*, Lin. *perfoliata*, La Marck. "Stem leaves cordate, embracing the ſtem, ſmooth; root leaves, rough, very entire." *Root* annual, ſpindle-ſhaped, ſmall, white: *Stem* generally branched at the baſe, about a foot high, round, ſmooth, glaucous. *Leaves* glaucous, very entire, obtuſe: root leaves obovate: ſtem leaves alternate: flowers ſmall: petals white or yellowiſh, narrow: ſiliques very long, erect. A native of Spain, France, &c. and rarely in England on the coaſts of Suffolk, Eſſex, and Suſſex. 2. B. *auſtriaca*, Jacquin Auſt. Tab. 283. "*Leaves* cordate, embracing the ſtem, very entire, ſmooth. *Siliques* deeply furrowed." Diſtinguiſhed from the foregoing by its furrowed ſiliques and yellow flowers. Willden. Dr. Smith deems it only a variety of the former. Corn-fields in Auſtria and Thuringia. 3. B. *campeſtris*, Linn. "Root and ſtem ſlender, leaves cordate-acuminate, embracing the ſtem; lower leaves lyrate, toothed, ſomewhat hiſpid." Smith. *Root* annual, ſpindle-ſhaped, ſmall. *Stem* erect, branched, round, ſmooth, rather glaucous: *upper ſtem leaves* alternate, very entire, ſmooth; *lower* a little toothed, *loweſt* and eſpecially *the root ones*, lyrate, toothed, and waved, hiſpid beneath at the veins; all glaucous, and paler beneath. *Leaves of the calyx* ſcarcely cohering, a little ſpreading. *Petals* yellow, three times larger than thoſe of the orientalis. *Siliques* erect, round, obſoletely quadrangular, reticularly veined, toruloſe, with an awl-ſhaped beak, quadrangular at the baſe, ſtriated. A clearly diſtinct ſpecies. Smith. A native of Europe, and plentiful in ſome parts of England. La Marck conſiders both the campeſtris and the auſtriaca as varieties of the orientalis. 4. B. *arvenſis*, Linn. Mant. "Leaves embracing the ſtem, ſpatulate, waved, the upper ones cordate, entire." *Root* perennial. *Stem* a foot high, ſmooth, branched, zigzag, perennial near the root. *Leaves* ſmooth, very obtuſe, a little fleſhy. *Calyx* cloſe, ſmooth, often a little coloured. Flowers ſpreading, emarginate, violet, with purple veins. South of Europe in corn-fields. 5. B. *alpina.* "Stem leaves heart-arrow-ſhaped, embracing the ſtem; radical leaves ovate; petals erect." Lin. Mant. *Root* perennial; *ſtem* about two feet high, not branched, with few leaves; *lower leaves* petioled, entire; *flowers* ſmall, white. Switzerland, Germany, Dauphiny, and Spain.

** * Siliques with a cylindric, rather obtuſe ſtyle.*

6. B. *Napus.* Rape or Navew. Linn. "Root cauleſcent, ſpindle-ſhaped; leaves ſmooth, upper ones cordate-lanceolate, embracing the ſtem, lower ones lyrate, toothed." Smith. *Root* biennial, calyx ſpreading, allied to ſinapis. *Flowers* yellow; *ſiliques* finally ſpreading, toruloſe. Corn fields; and ditch banks in England and other parts of Europe. 7. B. *Rapa.* Turnip. Linn. "Root cauleſcent, orbicular, depreſſed, fleſhy; radical leaves lyrate, rough; ſtem leaves very entire, ſmooth." Smith. *Root* biennial; *ſtem* erect, branched, round, ſmooth. *Root leaves* unequally toothed, deep green; ſtem leaves cordate-lanceolate, embracing the ſtem, a little glaucous: *flowers* yellow; *ſiliques* cylindrical. La Marck makes the Napus and Rapa one ſpecies under the trivial name aſperifolia, and alleges that the Linnæan ſpecific characters drawn from the root afford no real diſtinction. Ditch banks in England, &c. 8. B. *oleracea.* Linn. Cabbage. "Root cauleſcent, round, fleſhy; all the leaves ſmooth, glaucous, waved or lobed." Smith. *Root* biennial, from a ſpan to a foot long, ſcarred. *Flowers* large, lemon-coloured. *Siliques* toruloſe. 9. B. *richeri.* Villars. Allioni. "Leaves petioled, oblong, a little toothed; root cauleſcent." Willd. *Root* perennial; *ſtem leaves* very entire. Mountains of Dauphiny and Piedmont. 10. B. *cretica.* Willd. "Stem ſhrubby; leaves roundiſh, crenate, petioled, ſmooth." La Marck. *Root* perennial. Stem about a foot high and an inch thick. *Leaves* glaucous, a little fleſhy, from three to four inches long, and from two to three broad. *Petioles* channelled, from one to two inches long. Diſcovered by Tournefort in Crete and the iſlands of the Archipelago. 11. B. *ſuffruticoſa,* Willden. "Stem ſomewhat ſhrubby; leaves glaucous, a little fleſhy, very entire, ovate-oblong, attenuated at the baſe." *Root* perennial; *ſtem* branched, erect, ſmooth, round, a foot high. *Leaves* ſmooth, petioled, obtuſe. *Flower* violet, reticularly veined; *ſiliques* ſlender, erect, ſmooth, round, allied to B. *arvenſis,* but differs in the ſhrubby ſtem, and petioled leaves, attenuated at the baſe. On arid mountains in the north of Africa. 12. B. *chinenſis,* Linn. Amæn. "Leaves oval, nearly entire, floral ones embracing the ſtem, lanceolate; calyx longer than the claws of the petals." *Root* biennial; *lower leaves* large reſembling thoſe of cynogloſſum, but ſmooth. *Flowers* yellow. *Siliques* a little flattened. China. 13. B. *violacea.* Linn. "Leaves lanceolate-ovate, ſmooth, undivided, toothed." *Root* biennial. *Leaves* tough, not eſculent. China. 14. B. *ſubhaſtata.* Willd. "Radical leaves ſmooth, runcinate; ſtem leaves lanceolate, very entire, ſomewhat haſtate." *Root* annual; *ſtem* erect, branched. *Racemes* with few flowers; *flowers* yellow; *ſiliques* ſlender, round, erect. Iſlands of the Archipelago. 15. B. *polymorpha,* Murray. "Lower leaves linear-lanceolate, pinnatifid-toothed; upper awl-ſhaped, entire." Willden. *Root* perennial. 16. B. *teretifolia.* Willden. "Leaves fleſhy, round, ſmooth, pinnate; pinnules diſtinct." *Root* long, branched, crooked; *ſtem* ſmooth, branched, a foot high; leaves glaucous, ſmooth; ſoft pinnules unequal. *Flowers* in racemes pedicelled. *Calyx* coloured; leaves cloſe, linear. *Corol* large, violet; laminæ obovate, entire; *ſiliques* ſlender, ſmooth, two inches long, many-ſeeded. Moiſt ſandy ground in the north of Africa.

** Erucæ. Siliques with a ſword-ſhaped ſtyle.*

17. B. *Tournefortii,* La Marck. "Leaves runcinate, hiſpid; ſtem hiſpid; ſiliques toruloſe, ſmooth, ſpreading, with a very long beak." Gouan. *Root* anual, ſmall, fibrous. *Stem* ſlender, generally ſimple, almoſt naked near the top. *Leaves* oblong; upper ones almoſt linear. *Flowers* ſmall, pale yellow, in racemes. *Siliques* peduncled. Cultivated in the royal garden at Paris, and ſuppoſed to come from Spain. 18. B. *Erucaſtrum,* Linn. "Leaves runcinate-pinnate; ſtem hiſpid at the baſe; flowers without veins." La Marck. *Root* annual, ſpindle-ſhaped. *Stems* ſeveral, about a foot and half high, a little branched, ſlightly ſtriated. *Root-leaves* proſtrate on the ground. *Stem-leaves* alternate, one to each branch, a little decurrent, glaucous, often with a few hairs; petioles furrowed above. *Flowers* in a looſe, terminating raceme. *Peduncles* alternate, one-flowered. *Corollas* yellow. *Siliques* ſpreading, obtuſely quadrangular. Barren places and walls in the ſouth of Europe. 19. B. *Eruca.* Linn. "Leaves lyrate; ſtem hairy; flowers pale, with coloured veins." La Marck. *Root* annual. *Stem* two feet high, angular, branched. *Leaves* green, petioled. *Calyx* erect; claws of the petals erect, long; laminæ broad, roundiſh. *Siliques* on ſhort peduncles, preſſed to the ſtem. South of Europe. 20. B. *pinnatifida,* Willden. "Leaves pinnatifid, ſegments ſerrate, ſiliques cuſpidate, four-ſided." Stem a foot and a half high, ſmooth, ſometimes hiſpid at the baſe. *Flowers* pale yellow, nerved. *Siliques* ſmooth, acuminate. North of Africa. 21. B. *elongata,* Willden. "Leaves petioled, the lower ſinuate, pinnatifid, hiſpid, the upper ſmooth, toothed; ſiliques toruloſe, four-ſided, cuſpidate." *Root* biennial. *Stem* ſmooth. *Racemes* very long, looſe. *Siliques* little longer than the peduncle; valves half as long as the diſſepiment. Waldſtein. Barren land in Hungary. 22. B. *Cheiranthus,* Willden. "Leaves petioled, pinnatifid, dentate, hiſpid; ſiliques toruloſe, with a flat beak." *Root* biennial; ſilique one-ſeeded. Dauphiny and Piedmont. 23. B. *veſicaria,* Linn. "Leaves runcinate, ſiliques hiſpid, covered with a ſwelling calyx." *Root* annual, ſpindle-ſhaped. *Stem* hairy, branching. *Leaves* lanceolate, toothed, ſmooth above. *Racemes* erect, terminating. *Flowers* yellow, with darker veins. *Calyx* at firſt cylindrical, afterwards inflated. *Siliques* ſhort, oval, or elliptic, hiſpid backwards. 24 B. *lyrata,* Willden. "Leaves hiſpid, the root ones lyrate, ſtem ones toothed; ſiliques oblong, compreſſed." *Stems* half a foot high, ſimple or branching, ſeveral riſing from the root, with few leaves. *Stem-leaves* ſmall, oblong, petioled. *Flowers* violet, veined. *Siliques* ſhort, hiſpid. Sandy deſerts in the north of Africa. 25. B. *craſſifolia,* Willden. "Leaves pinatifid, ſegments linear." Vahl. In Egypt, about the pyramids; found by Forſkal.

The firſt five ſpecies are cultivated merely for curioſity. They ſhould be ſown early in the ſpring, on a bed of light earth, and when they are ſufficiently grown, thinned but not tranſplanted. They will flower in June, ripen their ſeeds in Auguſt, and afterwards ſow themſelves, requiring no farther care except weeding. Thoſe ſpecies that are cultivated in the garden or field, for the uſe of the kitchen or cattle, or for other purpoſes, are the B. Napus or Navew, under the name of coleſeed or rape, (ſee COLESEED;) a variety of the B. rapa, or TURNIP, (which ſee;) the cabbage; the cauliflower; and broccoli; the turnip cabbage and turnip rooted cabbage. We may here obſerve, that the cabbage has been reclaimed from its wild ſtate, and cultivated as a valuable eſculent vegetable, from the remoteſt antiquity. It was well known to Theophraſtus, and is mentioned

tioned by all the ſucceeding Greek and Latin authors who have written on the natural hiſtory of plants, or on ſubjects of rural economy; but, like all other cultivated plants, it has gradually undergone ſo many changes, and aſſumed ſo many permanent varieties, that it is not eaſy to form a deſcription which will apply to the whole. We may, however, obſerve in the general, ſays Ducheſne, who has written a particular treatiſe on it, that it has always a fleſhy, cylindric, aſcending caudex; a branched, ſmooth, and leafy proper caulis or ſtem; alternate, ſmooth leaves more or leſs green, or tinctured with red or violet; the lower ones petioled, runcinate at their baſe, and more or leſs ſinuate; the upper ones ſimple, ſmaller, and often embracing the ſtem; and flowers rather large, yellow or nearly white, in upright, looſe, and terminating racemes, ſucceeded by nearly cylindric ſiliques.

The numerous varieties are divided by Mr. Miller into three grand families. 1. Thoſe which grow in a natural way, without forming the leaves or ſtalks into a head, comprehending the wild colewort, the green colewort, the borecoles, and the turnip cabbage. 2. Thoſe which form their leaves into a head, and to which the Engliſh gardeners excluſively apply the term cabbage. 3. Thoſe which form their ſtalks into a head, as the cauliflower, and the different kinds of broccoli.

Ducheſne throws them into ſix diviſions. 1. The wild colewort, unaltered by cultivation. 2. The improved kinds, which do not form a head, or undergo any remarkable change in the ſtalk or root. 3. The proper cabbages. 4. The cauliflower. 5. The turnip-cabbage. 6. The turnip-rooted cabbage.

I. The wild colewort unaltered by cultivation.

Our Engliſh botaniſts agree in conſidering the ſea cabbage, the *maritima arborea ſeu procerior ramoſa maritima* of Morriſon and Ray's Synopſis, as the parent ſtock. But Ducheſne places this plant under his ſecond diviſion; though ſurely with little propriety, for he allows, at the ſame time, that it grows wild on the coaſts of England and France. Notwithſtanding this inconſiſtency, the arrangement is implicitly adopted by La Marck and Boſc. Ray aſſerts that the ſea cabbage is perennial, and ſuppoſes (Hiſt. Plant.) that the *braſſica rubra vulgaris* of John Bauhin is only a land variety of it. Hudſon, Robſon, Withering, (1ſt edit.) and even Dr. Smith, make it biennial. Miller, who, according to Mr. Martin, ſeems to confound it with the napo-braſſica or turnip-cabbage, ſays, that it grows naturally on the ſea-ſhore near Dover; that it has a perennial branching ſtalk, in which it differs from all the others; that the leaves are inclining to a purple colour, and are placed alternately on the branches, (exactly agreeing in this reſpect with the deſcription given by J. Bauhin). He inſiſts that it is a diſtinct ſpecies, having always found the ſeeds to produce the ſame plant, with this difference only, that in good ground the ſtalks will be much ſtronger than in poor; and adds, that the young ſhoots, after they are much frozen, are very ſweet and good, but at other times are ſtrong and ſtringy. He obſerves, afterwards, that the perennial colewort is little cultivated in the gardens near London, as not being ſo good for the table, unleſs in very hard froſt; though it is very hardy, will grow two years before it runs up to ſeed, and will afterwards produce many ſide ſhoots, continuing in poor land three or four years, but in a rich ſoil not ſo long. La Marck and Boſc, adopting the deſcription of Ducheſne, confirm the opinion of Ray and Miller. In France ſeveral other kinds have been grafted on this ſtock; and though the produce has not been of long duration, it has always been very remarkable. Upon the whole, it ſeems probable, that the perennial colewort of Miller is the only improved variety of the ſea cabbage, and that the French botaniſts are right in ſeeking for another origin of our common cultivated biennial kinds.

The plant which Ducheſne thinks the parent of the common garden colewort, the borecoles, true cabbages, &c. is what he calls *braſſica oleracea arvenſis*, which he deſcribes as growing from a ſmall, fibrous tap-root, about 15 or 18 inches high when wild, but riſing to the height of four or five feet when cultivated, and having a branched ſtem, with ſmall ſinuated leaves more or leſs deeply divided; the lower ones lyre-ſhaped, the ſtem ones heart-ſhaped, elongated and ſeſſile. It is much cultivated in the Netherlands, and eſpecially about Liſle, for the uſe of cattle, and for the ſake of an excellent oil compreſſed from its ſeeds, which muſt not be confounded with the oil of the navew, or rape oil of England. It is ſown in July, ſhould be tranplanted about the middle of September, and ripens its ſeeds about the middle of the July following. If deſigned for cattle, it ſhould be ſown in June, and the leaves may be plucked in November; but as it is hardy, it is better to preſerve it till other kinds of green forage begin to fail. After winter, if its ſtem be cut ſome inches above the ground, it will produce a ſecond crop of leaves for ſpring uſe.

II. Of the cultivated improved kinds which do not form a head, or undergo any remarkable change, either in the ſtalk or root, the principal are the common green colewort, or Dorſetſhire kale of the Engliſh gardeners; and the borecoles or curled coleworts. The common green colewort is cultivated in France, and in ſome parts of England, to feed milch cattle and ſheep, but is not uſed in the kitchen till it is tendered by froſt. It is nearly ſuperſeded in the gardens about London by the ſugar-loaf cabbage plants, which, from December to April, are the ſweeteſt greens yet known. The borecoles are more eſteemed than the common colewort, as being more delicate and equally hardy: but like it they are tough and bitter, till they have been expoſed to froſt. (See the next article.)

III. The proper cabbages, whoſe leaves form a head.

The effect of cultivation upon this variety is confined to the lower leaves, which are large, roundiſh, and nearly entire; and are ſet ſo cloſe together, that they lie upon each other like the ſcales of a bulb; and increaſing in compactneſs as they increaſe in ſize, prevent, for ſome time the developement of the flowering ſtem, and its branches. (See the next article.)

Cabbages were a favourite eſculent vegetable with the Romans; and as the late excellent Mr. White has obſerved, muſt have been known, in ſome of their varieties, to our Saxon anceſtors, ſince the month of February was called by them *ſproutale*. They are ſtill in univerſal uſe, but are often productive of flatulence and indigeſtion. The winter cabbages are moſt wholeſome, eſpecially when they have been tendered with froſt. They are ſaid to be improved in this reſpect at an earlier ſeaſon, by being kept ſome time after they are gathered, and ſuffered to wither a little before they are dreſſed. An agreeable pickle is ſometimes made of them, by cutting them into ſix or eight pieces, according to their ſize, putting them for a few moments into boiling water, and then plunging them in vinegar, which, eſpecially at firſt, ſhould be occaſionally changed, throwing in a little ſalt each time. In this form they are an excellent antiſcorbutic, and are found a valuable ſea-ſtore. The Germans and other northern nations have a ſtill more ſalutary and pleaſant preparation, which they call ſour-crout. With an inſtrument made for the purpoſe, they cut the head of a large variety (braſſica capitata maxima) into ſmall ſhreds, and then lay them on a cloth to dry in the ſhade. They afterwards put theſe ſhreds into a common caſk open at one end, and if it has contained wine or vinegar, it will be more favourable to the neceſſary fermentation, otherwiſe the inſide ſhould be rubbed with a little leven of old ſour-crout. The cover of the open end ſhould be ſtrong, that it may ſuſtain a large weight, and ſhould have a handle fixed in the middle that it may be readily put on and taken off. A quantity of very fine ſea ſalt ſhould be procured, in the proportion of two pounds to twenty cabbages. A layer of this ſalt is firſt evenly ſpread at the bottom of the caſk; on this is placed a layer of the ſhreds ſix inches thick. A man in ſtrong boots, well waſhed and very clean, then gets into the caſk, and treads down the maſs till it is reduced to the thickneſs of three inches. Similar layers of ſalt and ſhreds of cabbage are put in and trodden down in their turn, till the caſk is nearly full, but the laſt layer muſt be of ſalt. Some large freſh cabbage-leaves are then laid on, and covered with a wet cloth; and on the cloth is put the cover of the caſk preſſed down by heavy weights, to prevent the crout from ſwelling and riſing during the time of its fermentation. A ſeaſoning either of juniper berries, or, which is much better, of caraway ſeeds, is mingled with the cabbage, but not with the ſalt, and an empty ſpace of about two inches is left at the top. The ſhreds are ſoon deprived of part of their vegetable juice by the preſſure. This fluid, which naturally riſes to the top, is green, turbid, and fetid, and is drawn off by means of a cock placed two or three inches below it. A new brine is then added, which alſo ſoon becomes foul, and is drawn off in the ſame manner. After theſe operations have been continued twelve or fifteen days, more or leſs, according to the temperature of the place, the liquor will remain clear and ſweet: but care muſt be taken that there be always about an inch of brine at the top, and that no ſpace be left between the cover of the caſk and the cabbage, which will otherwiſe acquire a putrid offenſive ſmell. Sour-crout, well made, and well kept, has a very pleaſant acid taſte, eſpecially if it be waſhed after it is taken from the caſk, and mixed, before it is ſerved up, with a little vinegar. It has been found highly ſerviceable in long voyages, as a preſervative from the ſea-ſcurvy. For the IVth, Vth, and VIth diviſions, ſee the next article.

Brassica, in *Gardening*, comprehends cabbage, borecole, turnip cabbage, cauliflower, broccoli, cole, or rape, and turnip; and of courſe affords ſome of the beſt eſculent vegetables of the kitchen garden.

The ſpecies chiefly cultivated are ſuch as follow; *viz.* the B. *oleracea*, or common cabbage, which has a biennial root, and upright, fleſhy ſtalk, of oblong roundiſh leaves, which in ſome varieties cloſely cabbage into large compact heads; but in others they ſpread looſe and open.

The varieties of this are the common heading cabbage, with a roundiſh, oblong, cloſely cabbaged head, of roundiſh or oblong, plane, entire leaves; the Savoy cabbage, with a roundiſh and oblong cloſely cabbaged head, of roundiſh, crumply-curled leaves; the fimbriated open cabbage, or borecole, having a tall ſtem, crowned by an open looſe head, of oblong cut, fimbriated-curled leaves, ſpreading open but never cabbaging; the Siberian borecole, Scotch cole or kale, with a ſtrong ſtem, crowned by a large open head, of oblong, roundiſh, broad, thick, cut, curly leaves, not cabbaging; the green, common, open colewort, having a ſhort ſtem, crowned with an open head of oblongiſh plane leaves, not cabbaging; the turnip-cabbage, with the ſtalk and root ſwelling, turnip-ſhaped, being crowned by a head of open oblongiſh leaves, never cloſing to cabbage; the cluſtered braſſica, or cauliflower, with an upright ſhortiſh ſtalk, crowned by an open head of oblong, narrow, plane, entire leaves, not cabbaging, but having a large cluſtered flower-head in the centre; and the Italian cabbage called broccoli, having an erect robuſt ſtalk, crowned by a large open head of oblong, dark, and light-green plane leaves, not cabbaging, but affording a cluſtered flower-head in the centre, in the manner of a cauliflower.

B. Napus, navew, rape, or cole, has a ſpindle-ſhaped biennial root, and oblong, lyre-ſhaped, deeply divided, ſinuated, ſmooth leaves, not cabbaging; the ſtem leaves being oblong and cordate. This is ſeldom cultivated in the garden, but is valuable as a field crop; the culture, application, and uſe of which will be deſcribed hereafter. See Cole.

B. Rapa or turnip, produces a large round fleſhy annual root, crowned with oblong, cut, ſinuated, rough leaves.

As theſe plants are moſtly conſidered among gardeners as different, and as requiring different modes of culture, they may be treated of under ſeparate heads.

Of the B. capitatata or common heading cabbage, the varieties are numerous, and all denominated cabbages, from the circumſtance of their inner leaves turning in cloſely over one another, till by degrees they form a large, compact, globular, or oval head, ſome of them attaining a very large ſize. And as ſome of them are in perfection in ſummer, and others late in autumn, they are ſub-divided into ſummer and autumn cabbages.

Of the early ſummer kind the varieties are the ſmall, roundiſh, early cabbage, and the larger, oblong, early cabbage. The firſt comes early in May, and the ſecond about the middle, or latter end; both of them ſoon become very hard, and crack; and, therefore, no conſiderable quantity ſhould be raiſed, where the uſe of the family is only regarded.

Of the ſugar-loaf kind the varieties are the early dwarf ſugar, the large, and hollow ſugar-loaf. The firſt is a ſmall, longiſh, pyramidal cabbage, which comes in early in June, and is very ſweet while young, but ſoon grows hard. The ſecond is a large, pyramidal, hollow cabbage, that comes in about the end of June, and is in full perfection in July and Auguſt, ſeldom growing hard or cracking. It is a fine family and market cabbage.

The early Yorkſhire cabbage is a roundiſh, oblong, heading cabbage of a moderate ſize, growing cloſe, hearting quickly, and cabbaging early in ſummer, as in May, June, or July, &c. It is an exceeding good, tender-boiling, ſweet-eating cabbage, proper to cultivate with the large ſugar-loaf kind, &c. as a principal, early, and general ſummer crop, and for autumn and winter uſe as young light cabbages.

The early Batterſea cabbage is a roundiſh-oval-heading, rather ſmalliſh cabbage, that heads quick, comes in early, and is excellent for uſe while moderately young, or of middling light growth, before it becomes very hard.

The early Ruſſia cabbage is a ſmall roundiſh cabbage that comes in about June and July, heads very faſt, and ſoon grows hard; but if uſed while young and hollow is very ſweet and tender.

Of the autumn and winter kinds the principal ſorts are the common round white cabbage, which is a large middle-ſized, roundiſh, very white cabbage, that is in perfection about Auguſt and September, and which gradually acquires a degree of hardneſs. It is hardy enough to endure the winter.

The long-ſided cabbage is a large, oval, and roundiſh hollow cabbage, which never grows hard, is exceedingly ſweet and tender, and in high perfection in Auguſt, or September and October.

The drum-head, or great flat-topped cabbage, is a very large ſpreading cabbage, generally very broad, and flat at top, and pretty cloſe and firm. It is in perfection in September, and will continue till Chriſtmas, or longer.

The hollow cabbage is a large, roundiſh-oval, hollow cabbage, which ſeldom grows hard, is ſweet taſted, and comes into perfection from Auguſt to October.

The muſk cabbage is a middle ſized, roundiſh, hollow, very tender, criſp-eating cabbage, of a muſky ſcent. It is in perfection from Auguſt or September till Chriſtmas.

The giant, or great Scotch cabbage, is an admirable large roundiſh cabbage, heading very cloſe and hard, arrives to perfection in September and October, and will continue all winter. It is principally valued as a field cabbage for feeding cattle; but eligible alſo occaſionally for family uſe.

The American cabbage is a very large roundiſh cabbage, principally for field culture.

The Devonſhire cabbage is an exceedingly large very good cabbage, eligible both for the purpoſes of the two laſt ſorts, and as a profitable domeſtic cabbage, about the end of autumn and in winter.

The red cabbage is a middle-ſized, roundiſh, thick-leaved cabbage, heading very hard, the whole of a red colour; the darker the red, and the more thick and fleſhy the leaves, without any white in the ribs and veins, the more valuable. It is in perfection from autumn until the end of winter, as well as all the ſpring months till May; eſteemed principally as a choice pickle, and to eat raw as a ſallad.

All theſe ſorts or varieties of cabbage are biennial, being raiſed from ſeed, and attaining perfection the firſt year; and the ſecond ſhooting up into ſtalk, to flower, and ſeed, ſoon after wholly periſhing.

Both the ſummer and winter kinds are raiſed from ſeed ſown annually in beds of common earth, from which they muſt be afterwards tranſplanted. The chief periods of ſowing are autumn and ſpring; thoſe plants raiſed in the autumn arrive at perfection early the following ſummer; and the ſpring-raiſed plants cabbage the ſame year in ſummer and autumn, and attain full perfection. But the larger autumn ſorts, ſown in the ſpring, do not in general cabbage ſo ſoon in autumn, or to ſo large a ſize as the autumn-raiſed crop, planted out chiefly in the latter-end of that ſeaſon or the beginning of winter, or partly early in the following ſpring, but will be cabbaged in good perfection in Auguſt and September. It is of courſe always proper to ſow ſome in both the autumn and ſpring ſeaſons.

Method of culture in the ſummer kinds.

In the culture of theſe plants, for the early and firſt general ſummer crops, the proper ſorts are the dwarf and other ſmall earlier kinds, which it is neceſſary to obſerve ſhould only be ſown in ſmall portions; larger ſupplies of the Batterſea, or which is probably better, the large ſugar-loaf, and Yorkſhire, being put in, the former to come in early as in April and May, and the others to ſucceed them in June and July. Some of the early Ruſſia cabbage may alſo be provided.

Thus the autumn ſowing ſerves for the early and firſt main ſpring and ſummer crops of the following year, and the ſpring ſowing for ſucceſſion crops in ſummer and autumn. Where the autumn ſowing has been omitted, care ſhould be taken to put ſome ſeed in as early in the ſpring as the weather will permit, as the beginning or any time in February, or early in March, in a warm ſituation for the purpoſe of early cabbages.

In order to raiſe an early and general ſummer crop of any or all of theſe ſorts, a ſuitable quantity of good freſh ſeed ſhould be ſown preciſely about the firſt or ſecond week in Auguſt; as if ſown earlier, the plants are apt to run up to ſeed in ſpring; and if ſown much later, they do not acquire due ſtrength before winter.

For this purpoſe a ſpot of rich ground in an open expoſure is to be carefully prepared, by digging it nearly one ſpade deep, and dividing it into four feet wide beds; ſowing the ſeed immediately, each ſort ſeparately, and raking it in evenly. If the ſeaſon proves ſhowery, the plants will riſe in ten or twelve days; but if dry weather prevail, it is neceſſary to water the beds frequently, both before and after the plants appear, and to keep them clean from weeds. When the plants have leaves of an inch or two in breadth, it is proper to prick out a quantity of the larger plants from the ſeed-bed into nurſery-beds, in order that they may acquire due ſtrength, previous to their being planted out for good in October, and the following ſpring. In this intention, dig over an open ſpot of the beſt ground, and divide it into beds as before, raking the ſurface ſmooth; then prick out the plants in rows ſix inches diſtant, and three or four inches apart in the lines, giving them a full watering, which, if dry weather ſucceeds, muſt be repeated occaſionally.

The plants may remain in this ſituation, ſome till October or November, and the principal part till February, March, or April in the following year, at each of which periods a quantity of the ſtouteſt ſhould be tranſplanted into the places where they are to remain to cabbage; good ground in an open expoſure being allowed them, which, if well dunged, and dug in about a ſpade deep, will be the better. The plants are moſtly put in by line and dibble, in rows: the ſmall early kinds at two feet diſtant, and about one and a half in the lines; but the large ſugar-loaf and Yorkſhire kinds ſhould be ſet two feet and a half diſtant every way. A double quantity of theſe ſorts ſhould be planted, for the ſupply of a family; as the ſmall early kinds ſeldom continue long before they grow hard.

But in planting crops of early or ſummer cabbages, either in autumn or ſpring, ſome may occaſionally be planted cloſer than theſe diſtances adviſed for the principal ſtanding crops, in order to admit of thinning out for uſe, by degrees, in young ſmall growth, and a portion alſo planted in rows at only eighteen inches, as under, by a foot in the row.

It is neceſſary to obſerve, that, as the autumn plantings ſometimes ſuffer by the ſeverity of froſt or other cauſes in winter, the deficiencies ſhould be made good occaſionally from the plants in the nurſery beds.

Thoſe that have remained in theſe beds all the winter ſhould be planted out in February, if the weather be temperate and open, where they are to remain, though, if much cut by the winter froſt, it is better to let them remain until March or April to become ſtrong. When the winter happens to be ſo ſevere as to cut off moſt of the autumn-raiſed plants, recourſe muſt be had to an early ſpring-ſowing in February or March; the ſooner the better.

Where conſtant ſucceſſions of perfectly young cabbages are required through the ſummer and autumn ſeaſons, it is neceſſary to perform ſpring and ſummer ſowings, to ſucceed thoſe of the autumn-raiſing. Some ſeed of the large ſugar-loaf and Yorkſhire cabbage ſhould be ſown in February, March, or the beginning of April, and ſmaller portions in May, managing them as already directed, which will furniſh ſupplies of young cabbages in July, Auguſt, and September, &c. A ſmall crop may alſo be ſown in June, or early in July, to plant out for ſucceſſions of ſmall young cabbages, or good cabbage coleworts, in the latter end of autumn and early part of winter.

All the culture cabbage crops require, after being planted out where they are to grow, is hoeing the ground over occaſionally between them in dry weather to deſtroy weeds, and looſening the ſurface of the earth, in order to encourage the growth of the plants; and when they have advanced a little, drawing ſome earth once or twice about the bottoms of their ſtems, to ſtrengthen the plants and forward them; as in forward ſprings the earlieſt ſorts will often make efforts for heading the latter end of April or early in May; if anxious to have them as forward as poſſible, ſome of the beſt may be aſſiſted, by tying their leaves moderately cloſe together with an oſier twig, or piece of baſs, which promotes their cabbaging, whitens them internally, makes them more criſp and tender, and cauſes them to be ready for uſe a week or ten days earlier. In cutting ſummer cabbages it is proper to permit ſome ſtalks to remain to produce crops of ſprouts, which they afford abundantly. Theſe may either be gathered while young and green, or ſome left to ſtand for forming little heads, either of which are in many inſtances preferred to other ſummer greens; for this purpoſe ſugarloaf and Yorkſhire cabbage-ſtalks ſhould be preferred.

Method of culture in the autumn kinds.

In the culture of theſe ſorts it is neceſſary to conſider thoſe of the white or green kinds, and the red ſeparately. Theſe ſorts are adapted principally for autumn and winter uſe, as they rarely attain any degree of perfection before Auguſt; and ſome of the larger kinds not till September and October, but continue in excellent condition till Chriſtmas, or ſometimes till the end of winter, ſome of the ſorts arriving at a great bulk. When uſed while young, or before they grow hard, they are excellent for culinary uſe. The ſeaſon for ſowing all the late kinds is, as has been obſerved, either autumn or April; but to have a large ſucceſſion, it is neceſſary to ſow ſome ſeed at both ſeaſons, thoſe ſown in autumn and the firſt week in Auguſt arriving at perfection early in the following autumn, as Auguſt and September; and the ſpring ſowing coming in about the beginning or middle of September, or towards Michaelmas, though they ſeldom attain any tolerable perfection till the end of October. They are very fine in November and December, but rarely attain ſo large a growth as the autumn-raiſed plants.

The ſame method of putting the ſeed in, and pricking out the plants, is to be obſerved, as in the ſummer kinds. The time for planting out the autumn-raiſed plants is, for a few October or November, but for the principal part February, or early in March; and for the ſpring-raiſed plants, May and June. All of them muſt have an open expoſure of well dunged ground, and the plants ſet in rows two feet and a half at leaſt diſtant; and for the larger kinds, a yard diſtant each way ſhould be allowed.

All the culture they need is that of hoeing, to extirpate weeds, and drawing earth about their ſtems, which is an eſſential piece of culture in the whole cabbage tribe of plants.

The red cabbage is principally valued for pickling, and occaſionally for being ſhred ſmall and eaten as ſallad, ſometimes alſo for ſtewing. It attains perfection in autumn and winter.

The culture which it requires is nearly the ſame as in the former ſorts. The ſeed may be ſown in autumn and ſpring; but as it is a late cabbage, the ſpring-raiſed plants do not acquire the full ſize ſo ſoon in the proper ſeaſon as thoſe ſown and raiſed in the preceding autumn; though it is generally proper to ſow ſome ſeed in both theſe ſeaſons, in order to obtain a longer ſucceſſion.

It is moſt adviſeable to ſow the main crop in autumn, or in the beginning of Auguſt, as in that caſe the young plants will be fit to prick out in September or October in nurſery-beds. They ſhould ſtand four or five inches aſunder, and be watered if the weather be dry. The plants are to remain till they acquire a proper growth for planting out where they are to grow, ſome either the ſame year in November or beginning of December, and the reſt in the ſpring following; or the whole till that ſeaſon, as February or March. In either caſe, it is neceſſary to allot an open ſituation of good mellow ground, which ſhould be well dug over and manured with dung; a quantity of the ſtrongeſt plants being then drawn from the nurſery-bed, ſhould be planted out in rows at not leſs than two feet and a half diſtance every way. After being thus planted out where they are to ſtand, they only require the culture of occaſional hoeing in their advancing growth in ſpring, and beginning of ſummer, to deſtroy the riſing weeds, and looſen the ſurface of the ground, and at the ſame time drawing a little earth about the lower parts of their ſtems. They will by this means advance in their growth in a ſpreading open manner at firſt and towards autumn, gradually form cloſing hearts in the centre, and increaſe to large cabbaged-heads in full perfection in September and October, &c. continuing firm for ſix months or more, being hardy enough to reſiſt the ſevereſt froſts. Not only a ſpring ſowing is neceſſary to have a ſucceſſion to the autumn ſown main-crop ready, if wanted in winter, and the following ſpring, but alſo to continue longer in the latter ſeaſon before they ſhoot for ſeed. If the ſowing for a main-crop in autumn has been omitted, ſome ſeed muſt be ſown in the ſpring, as in February or early in March, but not later than that month.

The young plants may be pricked out in April or beginning of May four inches aſunder, and occaſionally watered, continuing a month or five weeks to gain ſome tolerable ſtrength, and then planting them out two feet and a half aſunder, where they are to grow, giving them the neceſſary culture of hoeing, as in the former-mentioned crops. They cabbage in moderate heads about September and October, and continue increaſing in ſize during November, if the weather be open, and are proper for uſe in that ſeaſon, and continue good late in the ſpring till April and May.

In order to obtain a ſpring ſown crop as forward as poſſible for finally planting out, ſome ſeed may be ſown in February, in a moderate hot-bed, and the young plants pricked out in March or beginning of April, in a warm ſituation, or in a frame, if an unkindly ſeaſon happens, to have occaſional protection, with glaſſes, &c. in cold nights and ſharp cutting weather, to continue them forward in proper growth for ſetting out in April or beginning of May, and thereby they not only cabbage ſooner but in greater perfection and ſize in autumn.

For the field culture and modes of application of this plant in feeding cattle, ſee Cabbage.

Method of culture in cabbage coleworts.

Cabbage coleworts are almoſt generally ſubſtituted in place of common green coleworts, which, though valuable on account of their hardineſs in being proof againſt froſt, yet, as table greens, are apt to boil tough and be rank taſted, being greatly inferior to the former. What were formerly underſtood by coleworts were ſuch cabbage-greens as never cloſed or cabbaged, but always remained quite open and green to the heart, and were raiſed for autumn, winter, and ſpring uſe as open greens; but at preſent cabbage plants, while they continue open and green, or juſt forming little central hearts, are moſtly denominated coleworts, and are the moſt ſweet and tender greens that can be cultivated for autumn and winter eating, continuing fine all the ſpring till ſummer cabbages are ready. For winter and ſpring ſupplies, a conſiderable quantity of theſe coleworts ſhould always be raiſed in autumn, and occaſionally in ſpring and ſummer, for ſummer and autumn coleworts, ſuch as ſome of more early and cloſe-growing, quick-hearting cabbage kinds, as theſe, even in their young ſtate, will generally have ſmall cloſing hearts; and what are not uſed in their young colewort growth may be permitted to ſtand to grow to proper full-headed cabbages. For this purpoſe, any of the ſmaller or moderate ſized ſorts of white or green heading cabbages may be cultivated, though it is moſt adviſeable, as juſt obſerved, to fix upon ſome of the early or ſummer kinds, as being of a more cloſe-hearting growth, more tender, and ſweeter than the larger ſorts. The moſt eligible of theſe are the ſugar-loaf, Yorkſhire, and Batterſea cabbages, though the ſugar-loaf kind generally ſurpaſſes all the other ſorts for eating.

The proper time for ſowing the ſeed in this view is any time in July, for the autumn and winter crop; but to have them continue, without running for ſpring drawing, ſome ſhould alſo be ſown the beginning of Auguſt, as in cabbages, as by this means the plants will continue in a colewort ſtate all the ſpring months till May, when ſuch as remain advance in growth to heading cabbages, either to cut young in ſmall hearts, or to ſtand and form proper cabbaged heads as may be required. But where a ſucceſſion of coleworts is wanted all ſummer and autumn, it is proper to ſow ſome of the ſame ſorts alſo in the ſpring, in February, March, or beginning of April, and in June and July to plant out at different times, and thus provide coleworts and ſmall-hearted young cabbages throughout the ſummer months.

In raiſing theſe different crops of coleworts, ſome ſeed for each ſhould be ſown in an open ſituation, moderately thick, raking it in evenly; and when the leaves of the plants are two or three inches broad, the plants ſhould be ſet out where they are to ſtand, in rows a foot aſunder, and half that diſtance in the rows: all the culture they afterwards require is, to have the ground occaſionally hoed to deſtroy the weeds and looſen it about the plants. When the plants are as large as a full grown coſs lettuce, they are of proper ſize to be drawn as coleworts.

In drawing them for uſe, eſpecially the ſpring crops, where there is a large quantity, every other row may be taken, permitting the intermediate ones to ſtand to cabbage, cutting for uſe alſo every other plant in the remaining rows, according as they form little hearts, leaving the others to cabbage more perfectly.

Method of culture in the Savoy kinds.

The Savoy is a variety of the cabbage, which, with care, always retains its difference from ſeed; it admits of ſome varieties, all of which have crumply curled leaves, and head or cabbage to a large ſize. The principal varieties are the common green Savoy, the large green Dutch Savoy, the yellow Savoy, the round-headed Savoy, the oval-headed Savoy, and the ſugar-loaf Savoy, which are all excellent for autumn and winter uſe.

They are propagated by ſeeds ſown at two or three different times, from the beginning of February till the middle of April; and for the very early autumn crop, a ſowing may be made in Auguſt. Each ſowing ſhould be made in an open ſituation, and the ſeed raked well in. When the plants have leaves an inch or two broad, and ſtand thick in the ſeed bed, it is proper to prick out a quantity of them on ſeparate beds three or four inches diſtant, to acquire ſtrength againſt the time of planting them out finally. Some of the autumn raiſed plants may be ſet out in October, or the following months, if the weather be open, and wholly in the beginning of ſpring; and thoſe raiſed from early ſpring ſowings ſhould be planted out finally as ſoon as the plants are of proper growths. The general crops of the later ſpring-raiſed plants may be planted out occaſionally, as ground is cleared, from May till Auguſt; thoſe planted out early being ſet two feet and a half diſtant every way, and the next crop about two feet; but the latter plantings need not be planted at more than a foot and a half diſtant.

It is ſometimes cuſtomary to plant out the ſummer crops of theſe plants between rows of forward beans, peas, kidney-beans, cauliflowers, early cabbage, and other plants, that ſtand diſtant in rows, and are ſoon to come off the ground; as by this practice ſome ground is gained; but the plants are generally fineſt when they are planted out in a clear open ſpot of ground, previouſly well dug over for their reception. In performing the ſummer plantings, it is of much advantage to chuſe moiſt weather for the work, otherwiſe watering muſt be practiſed ſeveral times till the plants have ſtricken freſh root.

All the culture that is afterwards required is, to hoe them well, to deſtroy the weeds, and to draw a little earth up to their ſtems occaſionally.

Method of culture in the borecole kind.

In the borecole varieties of cabbage, the plants are open, never cloſing to form a head or cabbage. They poſſeſs a peculiar degree of hardineſs, ſo as almoſt to bid defiance to the ſevereſt winter. The ſorts moſtly cultivated are the green curled borecole, the red curled borecole, the thick-leaved curled borecole, and the finely fringed borecole. They moſtly riſe with a thick ſtalk a yard or more in height, ſurmounted by a large head of thick leaves; in ſome ſpreading horizontally every way, being finely fringed and curled; but there are others that grow more contractedly. In all the ſorts the ſtems produce numerous fine ſprouts early in ſpring, cloſely ſurrounding them for ſome length, and which, as well as the principal or main top heads, boil exceedingly green and tender. The main heads come in for uſe in autumn and winter, and the ſprouts early in the ſpring.

They are raiſed by ſowing ſeed annually from March to the middle of April, for the main crops; and a ſmaller portion, in the beginning of May for a ſucceſſion. They ſhould all be ſown in open ſituations, not too thick, and the ſeed raked in. A quantity of the plants, when the leaves are an inch or two broad, ſhould be pricked out on beds four or five inches aſunder, to remain five or ſix weeks, ſo as to obtain a proper degree of ſtrength for the late crops to be ſelected out finally in June and July for the main crops, in rows two or three feet and a half aſunder; and for the late crops, early in Auguſt, placing theſe in rows two feet apart and eighteen inches in the rows. Moiſt weather ſhould, if poſſible, be choſen for this purpoſe.

A ſmall crop may alſo be ſown in autumn, or about the beginning of Auguſt, to ſtand the winter in young growth, and be planted out early in the ſpring, in order to be of the largeſt full ſize in the following autumn.

For the field culture of theſe plants, and their application as the food of cattle, ſheep, &c. ſee BORECOLE.

The Siberian borecole, or Scotch cole, is a ſort, ſome of which grow with very tall ſtems and large open heads; others more robuſt, with ſhorter ſtems and larger heads of broad curly leaves; in ſome ſorts, ſpreading; in others, ſtanding erect. Theſe ſorts are not ſo generally eſteemed as the common borecoles to cultivate in the garden in any conſiderable crops; they, however, boil tolerably tender and good in the winter, and the ſtems furniſh young ſprouts after the main tops are gathered; ſo that they might be cultivated for winter and ſpring uſe. They alſo anſwer well in the field. See BORECOLE.

There are ſome perennial varieties of the borecole kind, with variegated leaves, which are cultivated as plants of ornament and curioſity. There are others alſo of a ſomewhat perennial ſhrub by nature, riſing with tall branching ſtems, furniſhed with leaves all the year round; of which ſome are curiouſly variegated, the plants continuing ſeveral years. Thoſe with variegated leaves make an highly ornamental and curious appearance.

Theſe ſorts are propagated and continued principally by planting the offsets, ſlips, and ſlips of the ſide ſhoots, in the ſpring or ſummer ſeaſons, watering them till they become well-rooted.

The common or green colewort is a hardy biennial plant of the open-headed kind, with a ſhort ſtem producing a head of largiſh, oblong, plane, entire leaves, generally of a green colour. It is a very hardy plant, and was formerly cultivated for winter greens, but, till ſeverely pinched by froſt, is tough, rank-taſted, never boiling ſo fine and tender as the cabbage coleworts, for which reaſon it is rarely cultivated now for the table. They may be raiſed for winter uſe by ſowing the ſeed in July, as directed for cabbage coleworts.

The Anjou cabbage or colewort is a plant of the borecole kind, which grows tall, and produces very large open heads. It is raiſed as the preceding kinds, but muſt be planted out at a much greater diſtance.

Bruſſels' ſprouts, or *chou de Milan*, is a dwarf, perennial, open colewort, very productive of ſprouts all the year round. It is raiſed by ſeeds, as in the other open coleworts, and by the perennial roots, the ſmalleſt bit of which will grow and increaſe very faſt.

Method of culture in the turnip cabbage kinds.

This is a ſingular variety of cabbage, having its ſtalks ſwelled globularly, like a great turnip, and crowned by a large tuft of leaves, which never cloſe or cabbage. The ſorts are the turnip cabbage, with the turnip above the ground; and the turnip cabbage, with the turnip under the ground. The plants riſe and grow for ſome time, as in the common open colewort kind, till they form bulbs. It is the globular or turnip part of the plant that is uſed, being ſometimes ſliced in ſoups, and by ſome uſed as common turnips; but unleſs employed when quite young, they are rank and unpalatable. They are much recommended for culture in fields, as a green food for cattle and ſheep; their chief merit is their hardineſs, as they are capable of withſtanding the hardeſt winter. See Turnip Cabbage. Theſe plants are propagated by ſeed ſown annually in March, April, and June, being ſet out in an open ſituation, in rows two feet aſunder, keeping them clean from weeds, and throwing a little earth about the bottom of the ſtems occaſionally. The turnip part will be fully grown by Michaelmas, and continue all winter for uſe. They may likewiſe be ſown where the plants are intended to remain, and be hoed out to proper diſtances. This laſt is probably the beſt method of cultivating field crops.

Method of culture in the cauliflower kind.

The cauliflower is ſuppoſed to be a variety of ſome of the ſorts of common cabbage, brought up to its preſent improved ſtate by diligent culture. Mr. Miller inſiſts that the cauliflower is ſpecifically diſtinct from the common cabbage; becauſe, in a courſe of fifty years' experience, he could never find the leaſt appearance of one approaching the other; becauſe they are ſo different in their leaves, when the plants are young, as to be eaſily diſtinguiſhed; and becauſe the common cabbage puts out one upright ſtem from the centre, which afterwards divides into ſeveral branches; whereas the cauliflower ſends out many flower ſtems from the part that is eaten, which is a compact collection of the heads of theſe ſtalks, dividing afterwards into ſo many ſtems, and branching out into many ſpreading ſhoots, ſo as to form a large ſpreading head when in flower, but never riſing pyramidically like the cabbage. Boſc, however, aſſerts, that though in a well cultivated ſoil it may be kept from degenerating, by being properly watered, it will become a common cabbage, if neglected. It was firſt brought to England from the iſland of Cyprus, and, in the courſe of the laſt century, has been ſo much improved in our kitchen gardens, that moſt parts of Europe are now ſupplied with Engliſh ſeeds.

The varieties are the early cauliflower and the late cauliflower, which are alike in their growth and ſize, only the early kind comes in about a week before the other, provided the true ſort can be obtained, of which, however, there is no certainty, unleſs by ſowing the ſeed from the earlieſt ſorts, as is the practice of the London kitchen gardeners, who are always in poſſeſſion of an early and a late kind of the former, of which they are very careful. Both the varieties are of a delicate nature, being generally too tender to reſiſt the cold of the winter ſeaſon, without the occaſional aid of glaſſes, or other means. Thoſe who are curious in the culture of the cauliflower, have generally three or four crops in the year; as an early ſummer crop, a main ſummer crop, a late ſummer crop, and an autumn or Michaelmas crop.

The proper ſeaſon for ſowing the above crops are, for the early ſummer-crop, about the middle of Auguſt; the plants which riſe in the ſame ſeaſon are to be pricked out, and preſerved through the winter, under bell glaſſes, hand glaſſes, frames, or other conveniences, which, being planted out in ſpring, arrive at perfection the enſuing ſummer, from May to July and Auguſt. For the late ſummer crop to ſucceed the above, the ſeed muſt be ſown in February, or early in March, but not later than the firſt week in April, the plants being ſet out in May to come in for uſe in Auguſt and September. And for the Michaelmas or autumn crop, the ſowing ſhould be performed about the middle of May, the plants being ſet out in July. Theſe are ready after Michaelmas, and the following month, come to perfection gradually in October, but are never ſo large, fair, or perfectly headed as the ſummer crops.

In the culture of the early and main ſummer crops, great attention is neceſſary to procure good ſeed, ſuch as is not more than a year old, and which has been ſaved from the beſt ſorts. For the purpoſe of raiſing them in the greateſt perfection, a bed of the richeſt light earth, in the full ground, in a free expoſure, is to be prepared at the proper period, by digging it well over neatly, one ſpade deep, and breaking the ſurface fine, then, either ſowing the ſeed on the ſurface, and raking it in evenly and lightly; or firſt, raking the ſurface ſmooth, and then ſowing the ſeed, ſifting light earth over it to a quarter of an inch in thickneſs. When the weather is dry, gentle waterings in the evening are neceſſary, both before and after the plants appear; and if very hot dry weather, it is adviſeable to ſhade the bed moderately with mats in the heat of the day. The plants generally appear in a week or ten days. All the culture neceſſary afterwards, is occaſional watering and weeding, until towards the latter end of September, when their leaves will be an inch or two broad; a quantity of the beſt plants ſhould then be pricked out in four feet wide beds of rich earth, in rows three or four inches diſtant, rejecting all crooked and black-ſhanked plants. As ſoon as they are planted, a moderate watering ſhould be given, which, when dry weather prevails, ſhould be moderately repeated. The plants muſt remain there till about the end of October, when they ſhould be tranſplanted into their winter quarters, ſome being planted out under hand or bell glaſſes for the earlieſt crops;

others into garden frames, to be occaſionally protected by glaſſes till planted out in the ſpring.

The plants intended to be wintered in frames may alſo, occaſionally, be pricked out from the ſeed bed at once into the frames to remain. For the plants to be cultivated under glaſſes, a proper bed of the richeſt mellow ground ſhould be provided in the beſt defended and warmeſt part of the garden, in a free expoſure to the full ſun, being well dunged with the beſt rotten dung, ſuch as that of old cucumber or melon beds, or any other of ſimilar quality, ſpreading it equally over the ground at leaſt three or four inches thick, and the whole then regularly trenched in one good ſpade deep, burying the dung equally, then forming the ground into beds a yard wide, with foot-wide alleys for the convenience of going in to raiſe, and ſet off and on the glaſſes, &c. The plants are then to be put in, allowing three to each glaſs, though the London gardeners often plant more; but two of the beſt are enough to be left to come to perfection. At the time of planting them, a quantity of the handſomeſt, ſtraight, clear-ſhanked plants ſhould be choſen, which being ready, a line ſhould be ſtretched along the middle of the beds, and at every yard diſtance, and three plants put in a triangle, ſix or ſeven inches apart; a little water being given afterwards, and the glaſſes put on, which ſhould be kept cloſe about ten or twelve days. When the plants have taken freſh root, prop them up on the ſunny ſide, about three inches high, with forked ſticks, pieces of brick-bat, or wooden pegs, fifteen inches long, three or four notches being made an inch or two above one another to receive the edge of the glaſs, ſticking them in the ground. The glaſſes, by this means, may be readily propped higher or lower, or on any ſide as occaſion may require. During winter the glaſſes ſhould be kept almoſt conſtantly over the plants, only keeping them tilted on the props in mild weather, on the warmeſt ſide, for the admiſſion of air; but in fine, mild, dry days they may be ſet quite off, which if the plants be forward in growth, ſhould be practiſed at all opportunities, leſt by too conſtant glaſſing they be drawn up to flower in their ſmall winter growth, and be rendered uſeleſs. The glaſſes muſt always be put over the plants at night; and when cutting winds or froſty weather prevail, they ſhould be kept as cloſe down as poſſible, and long litter laid down cloſe about the lower part of each glaſs, raiſing it higher as occaſion may require.

In their ſpring culture, they muſt be thinned out, about the beginning or middle of March, to one ſtout plant or two at moſt under each glaſs, though in large bell-glaſſes the market gardeners frequently leave more, for the ſake of having the advantage of the glaſſes, to bring as many as poſſible to early perfection. The others ſhould be planted out into another place, as a piece of rich, well-dunged ground, the plants being raiſed with the point of a trowel, to preſerve the fibres of the roots, being planted two feet and a half diſtant each way, water being given to ſettle the earth about them.

The plants under glaſſes ſhould have the earth directly made good about them, and a little mould drawn up about their ſtems, continuing to cover them occaſionally with the glaſſes, which muſt now be raiſed conſiderably on props, in proportion to the advanced growth of the plants, not omitting to let them have the benefit of the full air in mild days, and that of warm ſhowers, by occaſionally ſetting the glaſſes wholly off. But the glaſſes are to be continued occaſionally over the plants until the middle or latter end of April, or longer, if it be neceſſary. When the plants are ſo far advanced that their leaves preſs againſt the glaſſes, they ſhould be raiſed, by forming a border or ridge of earth round each hole of plants, three or four inches high, on which ridge of mould the glaſſes ſhould be ſet, continuing to prop up one edge occaſionally as before, and according as the plants advance in growth, raiſing them on every ſide three or four inches in height; as the length of the days and warmth of the weather now increaſe, the plants grow freely, and require as much free air and ſcope to grow in as it is poſſible to allow them; at the ſame time being careful to continue to expoſe them occaſionally to the full air in fine days and moderate warm ſhowers, always carefully defending them in the nights, and in cold rains or boiſterous weather, until the weather becomes warm, and the plants are grown too large for the glaſſes; then they ſhould, by degrees, be fully expoſed night and day, ſo that by the middle or latter end of April they may be wholly diſcontinued. At this period, if the weather be not hot and dry, moderate waterings will be of utility in promoting the progreſs of the plants, as well as increaſing their ſize and ſtrength. Towards the latter end of May ſome of the forwardeſt plants may probably ſhew flower, at which period they ſhould be examined daily; and whenever a flower appears to be advanced in growth, turn down ſome of the inward leaves over the head, to ſcreen it from the ſun's rays, rain and full air, in order to preſerve it more white and cloſe, as when fully expoſed to the weather it generally changes the fine white colour to a yellowiſh hue, and occaſions the head to open before it acquires perfection. The excellence of the cauliflower conſiſts not only in ſize but in the whiteneſs, and compact curdy-like growth of the head; ſuch as have a frothy, looſe appearance being inferior in value. It is in its utmoſt perfection of growth when the outward parts of the head begin to open and expand, after which the whole ſoon divides and ſhoots up to flower and ſeed.

In gathering or cutting cauliflowers, the flower head ſhould moſtly be cut off with ſome inches of the ſtalk, together with moſt of the ſurrounding leaves, which ſhould be trimmed down nearly equal to the circumference of the head, eſpecially when for preſent uſe; but if required to keep a few days, and ſuch as are intended for market, ſhould have the full leaves to continue, and be trimmed off as wanted. As the ſtalks of theſe plants never produce ſprouts as in thoſe of the cabbage kind, they ſhould be moved as ſoon as the head is cut.

In the culture of the plants for the main ſummer crop, which have been preſerved in frames or other places during the winter, in order to be planted out in the ſpring, it is neceſſary to obſerve that the plants ſhould, during the winter, be every day in mild, open, dry weather, expoſed fully to the free air by ſhoving the glaſſes entirely off, but they ſhould always be drawn on again towards the evenings, and in exceſſive rains; though if this happen in the day, and the weather be mild, one end of the glaſſes may be raiſed on props three inches high, for the admiſſion of plenty of freſh air, as the plants muſt not be kept too cloſe in mild weather, as they would run up weakly and tender, or be forwarded too much in growth, and forced into ſmall button-flowers. They only need protection from froſt and immoderate rains while in the frames, their decayed leaves being picked off, and ſearch made for ſlugs, which often attack the plants in frames and hand glaſſes. When the weather is very froſty, the glaſſes ſhould always be kept cloſe, to protect the plants; and, if very ſevere, the additional protection of covering them at night with dry, long litter or garden-mats, ſhould be attended to, being laid round the outſides of the frames.

In open, mild weather, as the ſpring approaches, the plants ſhould be inured by degrees to the full air, by taking the glaſſes of entirely every day, and gradually leaving them fully expoſed at night in the more advanced part of the ſpring, to harden them for their removal into the places where they are to remain. From the latter end of February to the beginning of April, according to the weather and condition of the plants, all thoſe which have been wintered either in frames or other ways ſhou'd be planted out where they are to remain. An open ſpot of the beſt ground ſhould be choſen for this purpoſe, which ſhould be previouſly dunged, and dug over, as directed for the early crop; the plants being put in by a line, two feet and a half diſtant every way, watering them at planting, and in dry, warm weather, repeating it two or three times, till they have taken freſh roots.

In planting this crop, it is ſometimes the practice of market gardeners, who have occaſion to make every advantage of their ground, to ſow a thin crop of radiſh and ſpinach between the rows of cauliflower plants; but the practice is not much to be recommended. In May and June, when the plants have attained conſiderable growth, the ground ſhould be well hoed, to cut down all weeds, drawing earth about the ſtems of the plants; and when the latter month proves very hot and dry, occaſional waterings may be of great utility, baſons being formed round the plants for that purpoſe. In July this crop will be in full perfection, continuing in ſucceſſion until the middle of Auguſt, when it will be ſucceeded by the late ſummer crop.

In order to the culture of the late ſummer crop, it is neceſſary to raiſe a proper ſupply of plants in ſpring, to be planted out in April or May, to arrive at perfection in Auguſt and September, in time to ſucceed the autumn raiſed crops. The ſeed for this crop may be ſown any time in February, but not later than the firſt week in March; and, in order to forward the plants as much as poſſible, it is proper to ſow the ſeed on a ſlender hot-bed, made for one light box eighteen or twenty inches in depth, of hot dung, covered with light, rich earth, four or five inches in thickneſs. The ſeed ſhould be ſown on the ſurface, and covered a quarter of an inch deep with fine mould; the glaſs being then put on occaſionally, and light ſprinklings of water given, raiſing the glaſs daily for the evaporation of the ſteam and admiſſion of free air. The plants will riſe in a few days, at which time admit the air freely, by tilting the glaſs, and by taking it wholly off in fine warm days, and when there are moderate ſhowers. In dry weather, give frequent light waterings. When the plants have leaves an inch broad, prick them out; and if ſome of them are put upon another moderate hot-bed, it will forward them conſiderably. From the end of April to the middle of May, ſome of the forwardeſt plants may be fit to plant out, which ſhould be in an open ſpot of rich, well-dunged ground, as in the former crops, and in dry weather they ſhould have frequent waterings, till they have taken good root. The neceſſary culture afterwards is only occaſional hoeing to deſtroy weeds; and when the plants are ſomewhat advanced in growth, drawing the earth about their root-ſtems.

In the culture of the Michaelmas crop, ſome ſeed muſt be ſown about the middle of May, on a bed of common earth; and when the plants have leaves an inch or two broad, they ſhould be pricked out three or four inches aſunder, to remain until the middle or latter end of July, then planted out as in the other crops, ſupplying them occaſionally with water till rooted. They begin to ſhew heads towards the end of October, which will continue a great part of December, or ſometimes in mild weather till Chriſtmas. But this crop depends greatly on the ſtate of the autumn after Michaelmas, which, if moderately dry and warm, tolerably large, handſome cauliflowers are often produced in November; but if wet and cold, the heads are moſtly ſmall, irregular, and ill-coloured.

The method of culture in the broccoli kind.

This is another ſuppoſed variety of the common cabbage, which has different ſorts, that in their growth, habit, and eatable parts, much reſemble the cauliflower, all of them forming roundiſh heads in the centre of their leaves, compoſed entirely of a compact collection of numerous buds or ends of advancing ſhoots.

They are annual-biennial plants, as they attain perfection in the ſame year, in the early ſown crops; but in the later ſowings, ſtand all the ſecond ſeaſon, when, after producing heads, they ſhoot up into ſtalk, ripen, ſeed, and wholly periſh.

They are cultivated principally for autumn, winter, and ſpring uſe, theſe being the ſeaſons of their production in the beſt perfection, being obtained in the different crops by a ſpring and ſummer ſowing in March, April, and May; thoſe of the former months generally furniſhing heads in autumn and winter, and that of the latter principally after Chriſtmas, and all the ſpring months, in which they are commonly rather ſuperior to the foregoing in the production of larger and more perfect heads. They are ſo hardy as to reſiſt the cold of an ordinary winter, though very ſevere froſt often affects ſuch as are weak, or grow in expoſed cold ſoils, eſpecially the ſort called cauliflower broccoli. The chief ſorts and varieties are the early-purple, which is a moderate growing darkiſh green plant, producing ſmalliſh purple heads, but earlier by a fortnight or more than the others; and of which there are the purple, the green, and the blue, often riſing from ſeed of the ſame plants. This ſort is proper for the firſt crop, which, if ſown the latter end of March, or more generally in April, and a ſucceſſion crop in May, and planted out in June and July, comes in for uſe from Michaelmas till Chriſtmas; and when their heads are gathered, the ſtalks produce plenty of fine ſprouts.

The late purple is a large robuſt-growing darkiſh green plant, producing a large purpliſh head like a cluſter of buds, being generally much larger, and more perfectly headed than the former ſorts, and very delicate eating; of this there are the common purple headed, the dwarf purple, the blue broccoli, the brown broccoli, the green broccoli, and the yellowiſh broccoli; all of which frequently riſe from the ſame ſeed, though that of the true purple kind is ſuperior both in ſize and perfectneſs of heading, as well as delicacy of eating; and with care in ſowing the ſeed, the ſorts may be continued. This and all its varieties, by ſowing in April, May, and beginning of June, and planting out the plants in July and Auguſt, may be obtained for uſe from about Chriſtmas until the beginning or middle of May, but they are always in the greateſt perfection, in regard to ſize, in February, March, and April; and after the main head is cut, the ſtalks produce abundance of ſide ſhoots, or ſprouts, terminated by ſmall heads, which eat as ſweet and tender as the principal ones. The white, or cauliflower broccoli, is a curious variety. The plants are of robuſt growth, and lightiſh green colour, each forming a cloſe white head in the centre, ſometimes as large as a middling cauliflower, and greatly reſembling them in every ſtate of growth, and for delicacy of eating, they are equal to the fineſt ſummer cauliflower. This ſort admits of no varieties, except in degrees of whiteneſs, though the whiteſt generally aſſumes ſomewhat of a yellowiſh hue. By ſowing the ſeed in March, April, or May, and planting out the plants in June, July, and Auguſt, heads may be obtained for uſe all winter and ſpring; but thoſe that appear about March, and beginning or middle of

April, are conſiderably the largeſt and faireſt heads. The black broccoli is a tall growing plant, of a blackiſh green colour, which for the moſt part produces ſmaller and leſs perfect heads, being ſomewhat open and ſeedy like, but poſſeſſes the property of being ſo hardy as ſeldom to be injured by the ſevereſt froſts. There are of this black or dark-headed, the brown and the blue, all ſometimes from the ſame ſeeds. They are proper for cultivation to ſtand the winter by way of reſerve to ſerve for ſpring uſe, ſowing the ſeed early in May, and planting out the plants in June, and beginning of the following month. All the different ſorts or varieties are raiſed from ſeed ſown in the open ground. The principal ſeaſon for ſowing the main crops of all the varieties, is March and April for the autumn and winter productions, and May and the beginning of June for the principal ſucceſſive crops to come in for the ſpring ſupplies. Some may be occaſionally ſown ſo early as February, or beginning of March, of the cauliflower broccoli, as alſo any of the purple kinds, in order to obtain an earlier autumn production of ſmall heads in the latter end of Auguſt, or beginning of September, and beginning of October. The ſeed ſhould be ſown in an open expoſure, where the plants riſe much ſtronger than on narrow borders under walls. Each ſort ſhould be ſown ſeparately, moderately thick on the ſurface, and raked in lightly; the plants appear in ten or twelve days, occaſional waterings being given them in dry weather; and when the plants have leaves an inch or two broad, it is proper to prick them out in a nurſery bed three or four inches apart, giving them water as ſoon as planted, and occaſionally till they have taken root, in which bed let them remain a month or ſix weeks, where they may acquire due ſtrength; by this means they are ſhort, and of robuſt growth, and will be conſiderably better prepared for tranſplanting where they are to ſtand, than thoſe which remain in the ſeed bed. The time of tranſplanting them where they are to remain, is June, July, and Auguſt, and beginning of September, according to the time they were ſown, or are deſired for uſe. The plants ſhould have an open ſituation, and as good ground as the garden affords; which, if it have the addition of dung, will be advantageous, digging it in neatly one good ſpade deep, and directly putting in the plants, for which work a moiſt time is beneficial. They are to be planted in rows two feet and a half aſunder, and two feet diſtant in the lines; but for thoſe that are planted late in Auguſt and September, two feet at moſt are ſufficient, and eighteen inches diſtant in the row. As ſoon as planted, they ſhould be watered; and if dry weather prevail, the watering ſhould be repeated every other day, till the plants have got root. After the plants have taken root, their further culture is to keep them clear from weeds, by hoeing the ground occaſionally; and when they have advanced a little in growth, to draw ſome earth, or hoe about their ſtems, which, if repeated once or twice, will be of great advantage in promoting their growth, In gathering broccoli for uſe, attention muſt be had that the heads have attained their full growth, but they ſhould be cut while they remain cloſe, and before they begin to divide, and aſſume a ſeedy-like appearance, and with about ſix inches of the main ſtalk to each head, as the upper part of the ſtalks eats exceedingly ſweet and tender, but, previouſly to its being dreſſed, it muſt be peeled, or diveſted of the outer rind.

Saving ſeed in all the ſorts. In order to have good and perfect ſeed of any of the above ſorts of plants, ſome of the beſt of each kind ſhould be ſelected, and left to run up to ſeed. In the cabbage ſort, this is effected either after their heads have been cut, or by letting them remain without being cut. In the firſt way the ſtems which have the ſtrongeſt ſhoots may be left to ſeed where they ſtand, or be planted up to the necks in good earth in an open ſunny expoſure in the autumn, or beginning of winter; and in the latter, the ſame methods may be purſued. And when the plants have ſeeded, great attention ſhould be beſtowed to ſupport them well with ſticks till the ſeed is perfectly ripened, which is generally the caſe about the end of July, or in the following month.

Where ſeed of the different varieties is wanted, the plants for this purpoſe of the different ſorts ſhould be cultivated at as great diſtances as poſſible from each other, in order to continue them perfect without degenerating.

When the ſeed begins to ripen, it ſhould be gradually collected by cutting off the ripened ſtems, to prevent the birds from devouring it. Theſe, after they have been expoſed a little to the ſun, may be threſhed to get out the ſeed, which, ſufficiently dried, ſhould be put up in bags, and marked.

In the cauliflower kinds, ſome of the beſt and moſt perfect plants of the earlieſt crop ſhould be left to run up to ſeed in the ſituations where they ſtand, being ſupported as in the cabbage ſort, and occaſional waterings given when the ſeaſon is dry, to prevent the mildew. The ſeed ſhould be collected and managed in the ſame manner as above. It is moſtly in a ſtate to be gathered about September. Freſh ſeed ſhould be gathered annually, as it cannot be depended upon when old.

In the broccoli kinds, the beſt plants of the early ſpring crops muſt be ſelected, and left to ſtand with their heads perfect, the ſide ſhoots being only taken off. The ſeedling plants of the different varieties ſhould be at conſiderable diſtances from each other.

Method of culture in the turnip kind. All the varieties of the turnip are annual-biennial; as if ſown early in ſpring they attain perfection, run up to flower, ripen ſeed, and totally periſh the ſame year; and when ſown in ſummer and autumn, they alſo attain perfection the ſame ſeaſon, and ſtand without running to ſtalk till next ſpring; then wholly run up for ſeed, and finally terminate their growth in the autumn following.

The ſorts chiefly cultivated are the early Dutch turnip, which is an orbicular, moderate-ſized, handſome, white turnip, coming early to perfection, very ſweet and tender when young, and a very fine garden turnip for the early and ſummer crops; though when it is old, it is apt to become ſtringy.

The early white ſtone turnip is a round, moderate-ſized, neat, white turnip, that comes in early, and is very good in its young and middle growth. It is very proper for garden uſe as an early and firſt general crop. Of this ſort there are the large later turnip, and the early red ſtone turnip.

The white round turnip is globular and large, being proper for the garden and the field, to ſucceed the two former ſorts.

The green topped turnip is large, round, and remarkable for having its outer coat green at top, and a great part of the root growing above ground. It is excellent for a general crop in gardens, to draw for the table when of middling growth; and alſo valuable in the field.

The red topped turnip is large, and of a globular form, having its outer ſkin red at top. From its very large ſize, it is alſo adapted to field culture.

The yellow Dutch turnip is moderately large, and frequently oblong, the ſkin and fleſh being of a yellow colour.

The oblong white turnip is largiſh, and ſtrikes conſiderably into the ground.

The tankard turnip is large, oblong, and cylindrical, of quick growth, the root generally ſtanding above ground. It is a good field turnip, but not proper for the garden.

The large Norfolk turnip is large and round, but moſtly cultivated in fields.

The hardy Ruſſian turnip is middle ſized, dark coloured, very hardy, and continues long in ſpring without running. It is proper for ſowing as a moderate garden crop for winter and ſpring.

The long rooted French turnip is long, ſmall, and ſpindly rooted, but of little merit. The purple turnip is roundiſh, ſmall, early, and purple coloured, but grown moſtly for curioſity. In general uſe the early Dutch turnip is the beſt for the early and firſt general ſummer crops, as it generally arrives to perfection a fortnight, at leaſt, ſooner than moſt of the other ſorts; and, by an early ſowing in ſpring, may be obtained by the beginning of May. Next to this is the early ſtone turnip for an early and firſt general ſummer crop, and the common round white turnip to ſow for a main ſummer crop, all of which may be continued in perfection the whole ſummer and autumn, by performing three or four different ſowings from March until July, ſo as to have crops regularly ſucceeding one another.

For the autumn and winter crops the white round, the green topped, and the red topped kinds, are the hardieſt. From their magnitude they are to be preferred to all others for field culture.

Theſe roots may be obtained for uſe eight or ten months in the year, as from about the middle of May till the beginning or middle of March; after which time they begin to ſhoot into ſtalk for ſeed.

The method of propagation in all theſe ſorts, is by ſowing the ſeed in ſituations where the plants are to remain, as they do not admit of being tranſplanted with ſucceſs. The common ſeaſon for ſowing is any time from the beginning of March, until the latter end of July; but to have a long and regular ſucceſſion, it is neceſſary to make four or five different ſowings at proper intervals, from the latter end of February till the middle of Auguſt. The moſt proper ſoils for the culture of this root are thoſe of the more light and mellow kinds; as on ſtrong land the roots frequently acquire a ſtringy texture, and rankneſs of taſte. In garden culture, the neceſſary ſpace of ground to ſow at a time, for the ſupply of a family, is from about two to ſix, eight or ten rods, according to circumſtances; the proper quantity of ſeed for each ſowing may be from one to two or three ounces; but for large field crops, the common allowance is about two pounds to an acre. The ground ſhould be prepared for the ſeed by digging it well over, one ſpade deep, and breaking it as fine as poſſible on the ſurface, the ſeed being ſown while the ground is freſh ſtirred, eſpecially when there is hot or dry weather. A moiſt ſeaſon for ſowing is of great importance. In this culture the ſeed is moſtly ſown broad caſt, ſcattering it moderately thin, with a regular caſt and evenly ſpreading hand, afterwards raking it evenly in. It is of much advantage, when the weather is hot, to ſteep the ſeed a few hours in water before it is ſown, as by that means it germinates more quickly, and there is leſs danger of the plants being deſtroyed by the fly. See Fly and Turnip.

In the after-culture of the turnip, all that is requiſite is, when the plants have two or three leaves, or are about a month old, to thin them out to ſix, eight, ten or twelve inches diſtance, and clear them from weeds, which is moſt effectually done by the hoe, and is beſt performed in dry weather. At the ſame time the weeds ſhould be removed, and the ſurface earth well ſtirred, as this will prove highly beneficial to the growth of the crops. The very earlieſt crops need not be thinned to more than five or ſix inches diſtance, eſpecially if it is intended to begin drawing the roots as ſoon as they begin to turnip. In three or four weeks after hoeing, the plants will moſtly begin to turnip; and in five or ſix weeks ſome may be fit to draw for uſe. In the markets theſe roots are expoſed clean waſhed, and neatly bunched up, in number from twelve to fifteen or eighteen, according to their ſize in each bunch, and diſpoſed of to the retailers by the dozen of bunches.

The field culture of theſe plants, and their different applications in the feeding and ſupporting different ſorts of live ſtock, will be given hereafter. See Turnip.

Saving ſeed. To obtain good ſeed, ſome of the beſt roots of the autumn and winter crops muſt be left to run up to ſtems, which moſtly produce ripe ſeed about July, or the following month. It ſhould be collected and managed in the ſame manner as in the cabbage ſorts. And in order to obtain ſeed of the different varieties as perfect as poſſible, the plants of ſuch varieties ſhould be at conſiderable diſtances from each other.

Brassica *Braſſiliana*, C. Bauh. Pinax. See Arum *eſculentum*.

Brassica *Marina*, J. Bauh. &c. See Convolvulus *Soldanella*.

Brassica *Maritima*, C. Bauh. Pin. See Crambe *maritima*.

Brassica *Monenſis*, Hudſon and Withering. See Sisymbrium *monenſe*.

Brassica *Muralis*, Hudſon and Withering. See Sisymbrium *tenuifolium*.

Brassica *Spinoſa*, C. Bauh. Pin. See Bunias *Spinoſa*.

Brassica *Sylveſtris*, Boccone. See Arabis *Turrita*. C. Bauh. Pinax. See Turritis *Glabra*.

BRASSICÆ, in *Entomology*, a ſpecies of Chrysomela, that inhabits Germany. The prevailing colour is deep black; wing-caſes pale, teſtaceous with all the margin, and a band in the middle black. Fabricius, &c.

Brassicæ, a ſpecies of Staphylinus, of a ferruginous colour; head and body black; wing-caſes punctated; antennæ very thick and hairy. Scopoli. Found on the cabbage in Europe,

Brassicæ, a ſpecies of Phalæna (*noctua*), the wings of which are clouded with cinereous; a black hook connected with the firſt ſpot. Linn. Fabr. &c.

Brassicæ, the ſpecies of Aphis, that infeſts the common cabbage. Linn. Fabr.

Obſ. It is *Pediculus braſſicæ* of Friſch.

BRASSICARIA, a South American ſpecies of Phalæna, of the *noctua* ſection; the wings of which are indented, variegated, and marked with a common gold teſtaceous ſpot; poſterior wings white.

Brassicaria, an inſect of the genus Musca, the colour of which is black: abdomen cylindrical; ſecond and third ſegment rufous. Fabr.

This is *Muſca cylindrica* of Degeer. A variety of this ſpecies is mentioned by Fabricius, which has the abdomen ferruginous, with a black dorſal line at the baſe. Donov. Brit. Inſ. &c.

BRASSIDELIC Art, a term uſed by Paracelſus, to denote a method of curing wounds by the application of the herb *braſſidella*, or *ophiogloſſum*, on the freſh wound.

BRASSIOLIS, in *Entomology*, a ſpecies of Papilio (*Heliconius*), that inhabits Surinam. The wings are fuſcous; anterior ones ſpotted with yellow; poſterior pair radiated beneath with ſanguineous. Fabr. *Papilio bellona* of Cramer. Inhabits Surinam.

BRATENBRUNN, Szeles-Kut, in *Geography*, a walled and well-inhabited town of Hungary, in the circle below the Danube, and diſtrict of Odenburg, under the juriſdiction of the Eſterhazy family.

BRATHYS, in *Botany* (βραθυς, or βραθυ, the name of a plant in Dioſcorides), a genus inſtituted by Linnæus the ſon for a plant found by Mutis, in New Granada, and taken up from him by Schreber (937) Juſſieu (254), and Mr. Martyn, but referred by Dr. Smith (Plant. icon. 41.) to the genus *hypericum*, in which he has been followed by La Marck, Boſc, and Willdenow. See Hypericum *Brathys*.

BRATSKOI, in *Geography*, a town of Siberia, in the province of Irkutſk, and the circle of Ilimſk, on the river Angura; 140 miles N.E. of Niſhnie-Udinſk.

BRATSKOW, or Bakow, a town of European Turkey, in Walachia, ſituate in a fertile and pleaſant country, and the reſidence of a Roman catholic biſhop.

BRATTELEN, a plain of Swiſſerland, near Baſle, where, in the year 1444, 1500 Swiſs withſtood the whole army of France, conſiſting of 30,000, till they were all cut to pieces, except 16 who eſcaped, and 30 who were found alive on the field of battle. See Basle.

BRATTLEBOROUGH, a conſiderable townſhip, and poſt town of America, in Windham county, Vermont; having 1589 inhabitants, ſeated on the weſt bank of Connecticut river, about 28 miles E. of Bennington, 61 N. of Springfield in Maſſachuſetts, and 311 from Philadelphia. N. lat. 42° 52′.

BRAVA, one of the Cape de Verde iſlands, on the coaſt of Africa, the land of which is high and mountainous, producing, however, oranges and lemons in great abundance, and furniſhing excellent wine. The inhabitants are ſomewhat more than 500, and they cultivate maize, gourds, figs, water-melons, and potatoes; they alſo breed horſes, cows, aſſes, goats, and hogs. This iſland yields a conſiderable quantity of ſaltpetre, and the mountains are ſuppoſed to be rich in metallic ore, eſpecially copper, as there are ſeveral vitriolic ſprings. The coaſt abounds with fiſh. The circuit of the iſland is about 4 leagues; and it is about the ſame diſtance W.S.W. from Fuego. We learn from ſir George Staunton's account (Embaſſy to China, vol. i. p. 136.), that this iſland is a better and ſafer place for ſhips to be ſupplied with water and proviſions than the iſland of St. Jago, as it has three harbours, one called Puerto Furno on the eaſt ſide, from which veſſels muſt warp, or be towed out by boats; the Puerto Fajendago to the weſt; and the Puerto Ferreo to the ſouth, which is the beſt for large ſhips, and into which runs a ſmall river. N. lat. 14° 54′. W. long. 24° 45′.

Brava, a ſea-port town of Africa, on the coaſt of Zanguebar, being the capital of a ſmall republic or ariſtocracy, founded within the kingdom of Magadoxo, and at its ſouthern limit, by ſeven Arabian brethren, who fled hither from the tyranny of their king Lacah, one of the petty monarchs of Arabia Felix. Here they found a convenient and delightful ſituation, bounded on each ſide by a river, whence ſome have affirmed it to be an iſland. This diſtrict does not extend far from the coaſt, as it chiefly depends on the commerce of the capital, which is ſituated on a bay, formed by the mouth of the northern branch of the river, about the diſtance of ſomewhat leſs than one degree from the equator. Brava, which is now a ſmall town, was once large and populous, and carried on a conſiderable trade in gold, ſilver, ſilk, cotton, and other cloths, elephants' teeth, gums, and other drugs, particularly ambergriſe, with which this coaſt abounds. The houſes were large and well-built, in the Moreſco ſtyle; and the town was ſtrong and fortified, and accounted one of the moſt celebrated and frequented marts on the Habeſſan coaſt. The people were moſtly Mahometans, but under the protection of the kings of Portugal, to whom they annually paid a ſmall tribute. This payment, however, they reſiſted; upon which Triſtran de Cugna, admiral of the Portugueſe fleet, bound for India, having ſet on ſhore at Melinda three ambaſſadors ſent by king Emanuel to the emperor of Abyſſinia, proceeded to Brava, ſituate about 200 leagues northward of Melinda; and, after ſome previous negociations, aſſaulted the city. After a ſevere conflict between the beſiegers and the garriſon, conſiſting of 4000 men, the latter retreated into the city, and ſhut the gates againſt the enemy. The ſiege was proſecuted, and the city was at length taken and plundered of a large and valuable booty. Many of the beſieged were ſlain and wounded, and many taken priſoners; but moſt of them were releaſed. The Portugueſe, on this occaſion, perpetrated many atrocious acts of cruelty; and Cugna, having plundered the city, ſet it on fire, and it was quickly reduced to aſhes. After this, Brava became tributary to its deſtroyers; but it was never able to recover its priſtine grandeur and liberties. Brava appears to have been the Eſſina of Ptolemy, which was only 1 degree from the line. N. lat. 0° 45′. E. long. 44°.

Brava *Pareira*. See Pareira *Brava*.

BRAUBACH, in *Geography*, a town of Germany, in a prefecturate of the ſame name, in the circle of the Upper Rhine, and principality of Heſſe-Darmſtadt, ſeated on the Rhine oppoſite to Rees; 10 miles W. of Naſſau, and 18 N.W. of Mentz. Near this place is a very valuable ſalmon-fiſhery.

BRAVINIO, in *Ancient Geography*, a town of Britain, in the twelfth route of Antonine's Itinerary; ſuppoſed to be Ludlow.

BRAULIO, in *Geography*. See Bralio.

BRAULS, in *Commerce*, Indian cloths with blue and white ſtripes; otherwiſe called "turbants," becauſe they ſerve to cover thoſe ornaments of the head, particularly on the coaſt of Africa.

BRAUN, George, in *Biography*, Lat. *Braunius*, archdeacon of Dortmund, and dean of Notre Dame *in gradibus* at Cologne, lived to the beginning of the 17th century, and publiſhed a "Latin oration againſt the fornicating prieſts," 1566; the "Life of Jeſus Chriſt," and that of the "Holy Virgin," and "A Controverſial Treatiſe againſt the Proteſtants," printed at Cologne in 1605, 8vo.; but his chief work is the "Theatrum Urbium," compriſed in ſeveral folio volumes. Gen. Dict.

BRAUNAU, in *Geography*, a town of Bohemia, in the circle of Konigingratz, belonging to the abbey of Benedictines of the place.

BRAUNAW, a fortified town of Germany, in the circle and duchy of Bavaria, ſeated on the river Inn. It was formerly the reſidence of the elector palatine of Bavaria; but ceded to the houſe of Auſtria by the treaty of Teſchen in 1779; 8 leagues S.W. of Paſſau. N. lat. 48° 10′. E. long. 13° 3′.

BRAUNECK, or Braunegg, a town of Germany, in the Tyroleſe, and biſhopric of Brixen; 16 miles N.E. of Brixen.

BRAUNER-GEYER, in *Ornithology*, Cramer's name of the Auſtrian kite, *falco auſtriacus*.

BRAUNER-MALDERGEYER of Cramer, is the black kite, *falco ater*.

BRAUNFELS, in *Geography*, a town of Germany, in the circle of the Upper Rhine, belonging to the count

Solms, with a caſtle fortified in the ancient manner; 5 miles eaſt of Wetzlar.

BRAUNSBERG, a town of Pruſſia, in the biſhopric of Ermeland, ſeated on the Paſſarge, which, at a little diſtance, diſcharges itſelf into the bay called Friſche-haf. It was built in the year 1255, and derives its name from Bruno, biſhop of Prague. In 1461, the inhabitants expelled the Poliſh garriſon, and afforded an aſylum to the biſhop of Ermeland, who had declared for the knights of the Teutonic order. It was formerly one of the Pruſſian great cities, and ſent repreſentatives to the ſenate or council of ſtate; but it is now under the juriſdiction of the biſhop. It is large and populous, and carries on a good trade. Braunſberg is divided into the Old and New Town; 32 miles S.W. of Konigſberg. N. lat. 54° 20′. E. long. 20° 7′.

Braunsberg, a town of Germany, in the circle of Weſtphalia, and county of Wied Runkel; 4 miles N.E. of New Wied.

BRAUNSDORF, a town of Germany, in the circle of Upper Saxony, and circle of Erzgeberg; 11 miles N.E. of Freyberg.— Alſo, a town of Germany, in the archduchy of Auſtria; 6 miles E. of Meiſſau.

BRAUNSELFFEN, a town of Moravia, in the circle of Olmutz; 16 miles N.N.E. of Olmutz.

BRAUNSWEIG, a town of Germany, in the circle of Lower Saxony, and duchy of Holſtein, ſerving as a fauxburg to Kiel, and one mile north from it.

BRAVO, John, in *Biography*, a native of Caſtile, practiſed medicine at Salamanca, the latter part of the ſixteenth century, with diſtinguiſhed reputation; he was alſo profeſſor in medicine there, and much reſorted to and eſteemed by his pupils. His works are "De hydrophobiæ natura, cauſis, atque medela," Salam. 1571, 8vo.; "De ſaporum et odorum differentiis, et cauſis," 1583, 8vo.; "De curandi ratione per medicamenti purgantis exhibitionem," 1588, 8vo.; "De ſimplicium medicamentorum delectu," 1592, 8vo. He alſo publiſhed, agreeably to the faſhion of the times, commentaries on the works of Galen and Hippocrates.

Bravo, John, profeſſor of medicine and ſurgery in the univerſity of Coimbra, in Portugal; publiſhed, in 1605, "De medendis corporis malis per manualem operationem," 12mo.; "De capitis vulneribus," fol. 1610. He died in 1615.

Bravo, Gaspard, of Aguilar del Campo, in Old Caſtile, phyſician to Philip IV. and to the Inquiſition, took his degree of doctor in medicine at Valladolid, where he taught medicine and ſurgery the middle of the 17th century; and was author of "Reſolutionum medicarum circa univerſam totius philoſophiæ doctrinam," 1649, Lugduni, folio;" "Conſultationes medicæ, et tyrocinium practicum," Coloniæ, 1671, 4to.; "Operum medicinalium, tomus tertius," Lugduni, 1674, folio. The author treats in theſe volumes of the phyſiology and the pathology of fever; of the effects of bleeding, purging, and of ſudorifics; of the uſe of the Peruvian bark, lately introduced into practice, which he commends: and, among his conſultations, he gives an account of the diſeaſe and death of Philip IV. of Spain, Haller. Bib. Med.

Bravo, Rio, in *Geography*, called alſo *Del Norte*, or of the northern ſtar, the principal river of Spaniſh North America, which, as far as its ſources can be conjectured, has a courſe of about 1000 Britiſh miles; but its whole circuit probably exceeds that of the Danube. It diſcharges itſelf into the gulf of Mexico. N. lat. 25° 40′. E. long. 97° 30′.

Bravo! Ital. a word which needs no explanation. It is an Italian exclamation of applauſe, which all Europe has adopted.

If, in a theatre, the Italians approve a muſical compoſition, and diſlike the ſinger, though they hiſs the performer, they afterwards cry out *bravo pure il maeſtro;* and on the contrary, when they hiſs the compoſer, immediately after they diſcriminate, if the ſinger is a favourite, and exclaim *bravo Marcheſe*, or *brava la Banti;* and if a compoſer is a plagiariſt from the well-known works of a favourite author, the critics cry out *bravo Paeſiello!* or *bravo Cimaroſa!*

BRAURONIA, in *Antiquity*, a feaſt held every fifth year in honour of Diana, ſurnamed *Brauronia* from *Brauron*, a village near Athens, where the famous ſtatue of that goddeſs, brought from Scythia Taurica, was preſerved till it was taken away by Xerxes.

The ceremony of the Brauronia was managed by ten men, from their office called 'Ιεροποιοι; the victim offered was a goat, and it was cuſtomary for certain men to ſing one of Homer's Iliads during the ſervice: other miniſters at the ſolemnity were young virgins, from five to ten years of age, habited in yellow, and conſecrated to Diana, under the demomination of Αρκτοι, i. e. bears, which they derived from this circumſtance. A bear, having become tame and tractable, was admitted to eat and play with the Phlenidæ, the inhabitants of a borough in Attica; but a young maid being too familiar with it, the bear tore her to pieces, and was afterwards killed by the brethren of the damſel. Hence a fatal peſtilence enſued, for ſtaying which an oracle adviſed them, in order to appeaſe the anger of Diana, occaſioned by the deſtruction of the bear, to conſecrate virgins to her in memory of it. The Athenians obeyed the mandate of the oracle, and enacted a law, that no virgin ſhould be married till ſhe had undergone this ceremony. Potter. Arch. Græc. lib. ii. cap. 20.

BRAVUM, in *Ancient Geography*, a town of Spain, placed by Ptolemy in the Tarragonenſis, in the country of the Murboges.

BRAVURA, Ital. is a muſical term, as *Aria di Bravura*, implies a ſtyle of air, with which in modern times Miſs Davies *Ingletina*, the Gabriel, the Agujari, Madame Le Brun, Madame Mara, and Mrs. Billington, have made us perfectly acquainted. M. Ginguiné, in the Encycl. Meth. has deſcribed and apologized for *execution*, with much taſte and feeling. "We admire (ſays he) the warbling of birds, in tones which we cannot appreciate or underſtand; the nightingale, blackbird, thruſh, canary bird, and lark, charms us with their diviſions; the meaſured intervals and varied melodies exquiſitely performed by ſweet and flexible voices, ſupported and enriched by harmony, may afford a delight of a ſuperior kind, in human tones, which can inſinuate themſelves into the inmoſt receſſes of the heart; to which words can never penetrate, however impaſſioned, or tuned by numbers."

BRAUWEILER, in *Geography*, a prefecturate and abbey of Germany, in the circle of the Lower Rhine, and electorate of Cologn; 7 miles W.N.W. of Cologn.

BRAUWER, or Brouwer, Adrian, in *Biography*, a Flemiſh painter of great eminence, was born of obſcure parents at Oudenarde, as ſome ſay, or, according to Houbraken, at Haerlem, in 1608, and obtained inſtruction in his art from Francis Hals, for the profit of his labour. In this ſituation he manifeſted ſuch ſuperior powers, that Hals employed him in a garret apart from his other ſcholars, aſſigning to him hard labour and a ſcanty diet, and ſelling his performances for high prices. From this ſtate of cloſe confinement and harſh treatment he eloped, and went to Amſterdam, where his works were known and eſteemed. Having become maſter of 100 ducatoons, which he received for a ſingle piece, he became frantic with joy, and ſpent it at a tavern in ten days. From this time his uſual abode was a public houſe; and he worked only when he was urged to it by neceſſity. As ſoon as he had finiſhed any piece, he offered it for ſale; and if it did not produce a ſtipulated price, he burnt it, and began another with greater care. Poſſeſſing a vein of low humour, and engaging, both ſober and drunk, in many droll adventures, he removed from Amſterdam to Antwerp, where he was arreſted as a ſpy, and committed to priſon. This circumſtance introduced him to an acquaintance with the duke d'Aremberg, who, having obſerved his genius, by ſome ſlight ſketches drawn with black lead while in cuſtody, requeſted Rubens to furniſh him with materials for painting. Brouwer choſe for his ſubject a group of ſoldiers playing at cards in a corner of the priſon; and when the picture was finiſhed, the duke himſelf was aſtoniſhed, and Rubens, when he ſaw it, immediately pronounced that it was the performance of Brauwer, and offered for it the ſum of 600 guilders. The duke, however, retained it, and gave the painter a much larger ſum. Upon this, Rubens procured his releaſe, and received him into his own houſe; but, uninfluenced by gratitude to his benefactor, he ſtole away, and returned to the ſcenes of low debauch, to which he had been formerly accuſtomed. Being reduced to the neceſſity of flying from juſtice, he took refuge in France; and, having wandered through ſeveral towns, he was at length conſtrained by indigence to return to Antwerp, where he was taken ill, and obliged to ſeek relief in an hoſpital; and in this aſylum of ſelf-procured poverty and diſtreſs he died in his 32d year. Rubens lamented his death, and procured for him an honourable interment in the church of the Carmelites.

Such were the talents of Brauwer, that, in the courſe of a diſſipated life, he attained to diſtinguiſhed excellence in the ſtyle of painting which he adopted. His ſubjects were taken from low life, and copied after nature; ſuch as droll converſations, feaſts, taverns, drunken quarrels, boors playing and diſputing at cards, or ſurgeons dreſſing the wounded. His expreſſion, however, is ſo lively and characteriſtic; the management of his colours ſo ſurprizing; and truth was united with exquiſite high finiſhing, correctneſs of drawing, and wonderful tranſparence, to ſuch a degree, that his paintings are more valuable, and afford higher prices, than many works of the moſt eminent maſters. Some of his beſt works are found at Duſſeldorp. His drawings are diſperſed in the various cabinets of Europe. Several of his deſigns have been engraved; and we have ſome few etchings by himſelf of ſubjects uſually repreſented in his pictures, which are ſigned with the initials of his name, H. B.; Adrian being ſpelled with an H.. Pilkington. Strutt.

BRAUX, in *Geography*, a town of France, in the department of the Ardennes; 5 miles N. of Charleville.

BRAWALLA. See BROWALLA.

BRAWN, in the *Culinary Art*, ſignifies the fleſh of a boar, boned, rolled up, or collared, boiled, and laſtly pickled, for the winter's uſe.

The method of preparing it is as follows:—After the fleſh has been ſprinkled with ſalt, and the blood drained off, it is to be ſalted a little, and rolled up as hard as poſſible. In this ſtate, it is to be boiled in a copper or large kettle till it is ſo tender as to admit of a ſtraw's being run through it; and then ſet by thoroughly to cool. When it is cold, it is to be put into a pickle, prepared by adding to every gallon of water a handful or two of ſalt, and as much bran of wheat; boiling theſe ingredients together, and then draining the bran as clear as poſſible from the liquor. When the liquor is quite cold, the brawn is to be put into it.

Brawn is made only of the flitches, without the legs; the oldeſt boars are choſen for this uſe; it being a rule, the older the boar, the more horny the brawn.

There is alſo brawn of pig, which is made by ſcalding, drawing, and boning the beaſt whole, except the head; then cutting it in two collars, ſoaking it in brine, ſeaſoning, rolling, putting it into a cloth, binding it up, boiling it, and when boiled, hooping it up in a frame.

BRAXEY, in *Veterinary Science*, a diſeaſe of ſheep, which is diſtributed into the dry, coſtive, and watery braxey. The dry braxey ſeems to be cold and inflammation in the bowels, owing to the taking in with the food ſome hoarfroſt, or to a change in the blood ariſing from the removal of the animals from a poor to a rich keep. The coſtive braxey is merely the colic, from obſtructed inteſtines. The watery braxey is ſuppoſed to be the "red water," as it ariſes from the uſual cauſe, and is attended with the ſimilar ſymptom of ſuppreſſion of urine. In this latter caſe, inſtead of uſing turpentine and other ſtrong diuretics, the ſureſt and ſafeſt courſe is to puncture the bladder, without wounding the guts, and thus to draw off the urine, afterwards covering and healing the wound.

BRAY, sir Reginald, in *Biography*, an Engliſh politician and ingenious architect of the 15th century, was the ſecond ſon of ſir Richard Bray, one of the privy council to king Henry VI., and deſcended from an ancient family, who accompanied William the conqueror into England, and flouriſhed in the counties of Northampton and Warwick. In the firſt year of Richard III., Reginald obtained a general pardon, probably, on account of the part he had taken from perſonal and hereditary attachment to Henry VI.; and he was recommended as a perſon of ſober and prudent policy, to thoſe who favoured the advancement of the earl of Richmond, afterwards king Henry VII., to the throne. In the ſervice of this prince, both before and after his acceſſion, he was ſteady and active; and his zeal was recompenſed by a variety of honourable appointments. He was made a knight banneret, probably at the battle of Boſworth, a knight of the bath at the king's coronation, and afterwards a knight of the garter. He was alſo conſtable of the caſtle of Oakham in Rutlandſhire, joint chief juſtice with lord Fitzwalter of all the foreſts ſouth of Trent, high treaſurer, chancellor of the duchy of Lancaſter, high ſteward of the univerſity of Oxford, and a member of the privy council. In the 10th year of the king's reign, he had a grant for life of the iſle of Wight at the annual rent (ſays Camden) of 300 marks. He received many other marks of the royal bounty and favour; and died Auguſt the 5th 1503, poſſeſſed of a very great eſtate; and his remains were interred in the chapel at Windſor. Notwithſtanding the wealth he acquired, and the activity with which he officiated as miniſter during 17 years, under a ſovereign, who was ſuſpicious in his temper, and extorted large ſums of money from his ſubjects, hiſtorians concur in giving him an excellent character. They repreſent him as the father of his country, a ſage and grave perſon, a fervent lover of juſtice, and one who would often admoniſh the king when he did any thing contrary to juſtice or equity. His piety and charity were alſo conſpicuous in the uſual exerciſes of the times, in which he lived.

Of his ſkill in architecture, he gave ſufficient evidence, in building the chapel of Henry VII. in Weſtminſter abbey, which was conducted under his direction, and in compleating the chapel of St. George at Windſor, to which he was a liberal benefactor. As he died without iſſue, he bequeathed the bulk of his fortune to Edmund, the eldeſt ſon of his younger brother John, who was ſummoned to parliament in 1530, as baron of Eaton Bray; and he alſo left conſiderable eſtates to Edward and Reginald, younger brothers of Edmund. From Edward, the manor of Shire Vachery and Cranley in Surry, which was given to ſir Reginald upon the execution and attainder of lord Audley, deſcended to the Rev. Geo. Bray, who poſſeſſed it in 1778. Reginald ſettled at Barrington in Glouceſterſhire, where the male line of that branch became extinct, about fifty years ago. Biog. Brit.

Bray, Thomas, a learned and pious divine of the 17th century, was born at Marton in Shropſhire in 1656, and after finiſhing his ſchool education at Oſweſtry, was admitted into Hart-hall, in the univerſity of Oxford, where he made conſiderable proficiency in thoſe ſtudies, which were adapted to the eccleſiaſtical profeſſion, for which he was intended. Being under a neceſſity of leaving Oxford, on account of his circumſtances, ſoon after he had commenced bachelor of arts, he entered into holy orders; and by his aſſiduity in diſcharging the duties of his profeſſion, as well as by his exemplary behaviour, he obtained the patronage of lord Digby, who preſented him to the living of Over-Whitacre in the county of Warwick, generouſly augmented for his ſake, by the addition of the great tithes, and in 1690, to the rectory of Sheldon, which he retained till within a quarter of a year of his death. In 1693, he took his degree of maſter of arts in Hart-hall, Oxford. At Sheldon, he compoſed his "Catechetical lectures," publiſhed in 1696, which were not only well received by the public, but the means of recommending him to Dr. Compton, biſhop of London, who fixed upon him as a proper perſon for modelling the infant church of Maryland in America, and eſtabliſhing it upon a ſolid foundation. In 1696, he was appointed commiſſary for this purpoſe, with a ſalary of 400l. per annum. Determined on active and uſeful ſervice, whatever preſent ſacrifices might attend it, he intimated his readineſs to accept the office, on condition of being encouraged and aided in providing parochial libraries for the miniſters who were to be ſent to the churches of this colony. This ſcheme of parochial libraries he extended to all the colonies and plantations in America and the Weſt Indies, and alſo to the factories in Africa; and he connected with it another deſign, which was that of eſtabliſhing lending libraries in every deanery throughout England and Wales, out of which the neighbouring clergy might borrow books; and where they might have an opportunity of conſulting them, with regard to all matters that pertained to literature in general, and to their own office in particular. The plan became popular, and many libraries were founded, both at home and abroad. With a view of promoting the utility of theſe libraries, and of directing the miſſionaries in the proſecution of their theological ſtudies, Mr. Bray publiſhed two books, one entitled "Bibliotheca parochialis, &c." and the other, "Apoſtolic charity," a diſcourſe upon Daniel xii. 3. preached at St. Paul's at the ordination of ſome proteſtant miſſionaries, intended for the plantations; to which is prefixed, "A general view of the Engliſh colonies in America, &c." About this time, viz. in 1696, Mr. Bray took the degree of doctor in divinity, though his circumſtances would hardly allow of the expence attending it; thinking that this title and honour would give authority to his advice, and ſerve to promote the benevolent purpoſes which he wiſhed to accompliſh. In 1698, he made ſome unſucceſsful exertions in order to procure a public fund for the propagation of the goſpel in foreign parts; but failing in his main deſign, his efforts availed for the purpoſe of forming a voluntary ſociety, which was afterwards incorporated by royal charter. See Society. Ever ſince his appointment to the office of commiſſary for Maryland, he had received no emolument from it; but he had expended his time and money in promoting thoſe important objects, to which he was zealouſly devoted; and, therefore, ſome of his friends endeavoured to diſſuade him from proſecuting his deſign of going abroad, and to accept of two valuable preferments which were offered to him at home, which were thoſe of ſub-almoner and the donative of Aldgate in London. But perſiſting in his purpoſe, and finding that his preſence was neceſſary, he ſet ſail for Maryland in 1699, and arrived thither in March of the following year. He immediately applied to the object of his miſſion, viſited the province, and took meaſures for the re-eſtabliſhment of the church, which had been for ſome time in a very unſettled ſtate. Having obtained a bill from the aſſembly for this purpoſe, he came over to England to ſolicit the royal aſſent; and, notwithſtanding the objections that were urged by thoſe who were to be thus compelled to contribute towards the maintenance of a clergy, from whoſe ſervices they were to derive no benefit, he ſucceeded in procuring a law, framed according to his wiſhes. Dr. Bray, after his return in 1701, publiſhed his "Circular letters to the clergy of Maryland." In 1706, he accepted the donative of Aldgate, which was again offered to him; and, in 1712, he publiſhed his "Martyrology, or papal uſurpation," fol.; a work conſiſting of extracts from the treatiſes of celebrated authors, arranged and digeſted into a kind of regular hiſtory. He had provided materials for a ſecond volume; but being obliged to lay aſide the proſecution of his deſign, his martyrological memoirs, both printed and MS. were bequeathed by his will to Sion college. Such was the zeal of Dr. Bray for the converſion of the negroes in the Weſt Indies, that he took a voyage to Holland to ſolicit king William's encouragement of the deſign; and on this occaſion, he was introduced at the Hague to an acquaintance with a M. d'Allone, whom he intereſted in the execution of his object, to ſuch a degree, that he left a conſiderable legacy towards its completion. Dr. Bray, having met with great ſucceſs in his eſtabliſhment of parochial libraries, devoted much time to this buſineſs; and for the purpoſe of impreſſing the minds of thoſe who are deſigned for the miniſtry, with a due ſenſe of the importance of Chriſtian knowledge, he reprinted the excellent treatiſe of Eraſmus, entitled "Eccleſiaſtes." In 1727, he made a caſual viſit to Whitechapel priſon; and ſo much was he affected by the contemplation of the wretched ſtate of thoſe who were confined in it, that he exerted himſelf in procuring contributions for their relief, and that of other priſoners; and he repreſented their deplorable condition with ſuch effect, as to induce the houſe of commons to inſtitute inquiries, which were very important and beneficial. To the ſuggeſtions and exertions of Dr. Bray, always directed by a pious and benevolent ſpirit, many charitable inſtitutions in the metropolis and in other places were much indebted; particularly the ſociety for the reformation of manners, that for founding charity ſchools, and that for the relief of poor proſelytes. Having entruſted the accompliſhment of his various charitable and public ſpirited plans to proper managers, this good man, happy in the review of a life, that had been devoted to important and uſeful purpoſes, and animated by a well-founded hope, with regard to futurity, cloſed his courſe of ſervice, February the 15th 1730, in the 73d year of his age. Mr. Whiſton bears honourable teſtimony to Dr. Bray, of whom he ſays, "that he eſteemed him, though not as one of the greateſt abilities, as by far the moſt uſeful clergyman, and the moſt indefatigable promoter of religion, and of the pious deſigns and ſocieties which conduce to it, he ever knew; that he always honoured and aſſiſted him, both in the review of his catechetic lectures, and his many other charitable and Chriſtian attempts; and, that he heard him comforting himſelf near his death, with thoſe numerous good works he had ſo heartily promoted." "Dr. Bray's opinion," ſays one of his biographers, "that civilizing the Indians muſt be the firſt ſtep, in any ſucceſsful attempt for their converſion, is a proof of his good ſenſe, and of the juſt ideas he entertained on the ſubject." Biog. Brit.

Bray, Solomon de, a portrait painter, was born at Haerlem in 1597, or, according to Deſcamps, in 1579, and is reckoned among the good artiſts of his time. He died in 1664. Pilkington.

Bray, Jacob de, an hiſtorical painter, the ſon of the former, was born at Haerlem, and is ſaid by Deſcamps to have died ſome weeks before his father, in 1664: but other writers affirm, that he was alive in 1680. He diſtinguiſhed himſelf by his drawings, as well as his paintings. At Amſterdam, there is a picture by this artiſt, in which David is repreſented playing before the ark; that is much commended. The colouring is ſo well managed, that it appears as freſh as if it had juſt come from the eaſel. His drawings on vellum and paper, finiſhed in red and black chalk, are very fine and highly valued. Pilkington. Strutt.

Bray, in *Geography*, a ſea-port and poſt town of the county of Wicklow, Ireland, ſituated on the confines of the county of Dublin, from which it is ſeparated by a ſmall river of the ſame name, that abounds with excellent trout. It has two fairs, at which are ſold great quantities of frieze and flannel, with ſheep and black cattle. Here are an old caſtle, a church and chapel both newly built, and a barrack. In the neighbourhood are many fine ſeats that attract viſitors; and it is alſo frequented for ſea bathing, and for drinking goats' whey. Diſtance from Dublin, 10 miles S. by E. N. lat. 53° 13′. W. long 6° 6′.

Bray-*bank*, a narrow bank of ſand on the eaſt coaſt of Ireland, oppoſite to Bray-head, at the diſtance of from ſix to ſeven miles from the coaſt, and extending about eight miles N. by E. The leaſt water found on it was nine feet.

Bray-*head*, a cape on the eaſt coaſt of Ireland, near the town of the ſame name, which is ſteep, and the higheſt land upon that part of the coaſt. It is 12 miles north of Wicklow-head, and 5 miles ſouth of Dalkey, the ſouth point of the entrance into the bay of Dublin. N. lat. 53° 12′. W. long. 6° 4′.

Bray *ſur Seine*, a town of France, in the department of the Seine and Marne, and chief place of a canton, in the diſtrict of Provins, 3 leagues S. of Provins. The town contains 2030, and the canton 10,582 inhabitants; the territory comprehends 272½ kiliometres, and 23 communes.

Bray *ſur Somme*, a town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Péronne, 3 leagues W. of Péronne. The place contains 1065, and the canton 9645 inhabitantt; the territory includes 145 kiliometres, and 20 communes.

BRAZE', a town of France, in the department of the Côte d'Or, 2 leagues from Dijon.

BRAZED, in *Heraldry*, the ſame as *Braced*, is uſed to expreſs ſuch charges as are folded or interlaced.

BRAZEEL *parſis*, in *Botany*, (Petiver). See Spigelia Anthelmia.

BRAZEN *age* is uſed by the poets to expreſs the third age of the world. See Age.

Brazen-*diſh*, among *Miners*, is the ſtandard by which the other diſhes are gauged, and is kept in the king's hall.

Brazen *laver*, in *Jewiſh Hiſtory*, one of the utenſils of the court of the tabernacle, deſcribed in the 30th chapter of Exodus, and conveniently ſituated between the eaſt end of the tabernacle and the altar of burnt-offerings. Neither its ſhape nor ſize is mentioned by Moſes; but it was probably of conſiderable capacity, as it ſerved for the uſe of all the prieſts to waſh their hands and feet, before they performed their miniſtry. It is ſaid (Exod. xxviii. 8.), that Moſes "made the laver of braſs, and the foot of it of braſs, of the looking-glaſſes of the women, who aſſembled at the door of the tabernacle of the congregation." Such were the ancient mirrors, made of poliſhed braſs or other metal; which gave but a dark or obſcure image, in compariſon of glaſs mirrors. Hence, it is ſaid, we read (1 Cor. viii. 12.) of "ſeeing through a glaſs darkly;" or rather "in, or by a glaſs," as δι᾽ ἐσόπτρȣ ſignifies. Some have ſuppoſed, that an error has crept into the text, or an exchange of one letter for another like it, as of ב, inſtead of כ; and that it ſhould be rendered, "he made the laver and its foot of a braſs like the looking-glaſſes of the women that crouded about the door of the tabernacle;" by which we are to underſtand, that he made them either of the ſame metal, or that he gave them the ſame degree of brightneſs or ſmoothneſs. And, if what an ancient father tells us be true, with regard to the Egyptian women, that they uſed to go into the temple with a looking-glaſs in one hand, and a timbrel in the other, it will ſerve to illuſtrate the practice of the Hebrew women's wearing ſuch an ornament when they came into the tabernacle. Tremell. in loc. Cyril. Alexand. de Adorat. in Spirit, &c. tom. i. l. 2. p. 64.

Brazen, or *molten ſea*, an utenſil in the temple of Solomon, for the ſize and conſtruction of which, ſee 1 Kings, chap. vii. and 2 Chron. chap. iv. The water contained in it ſerved for the waſhing of the ſacrifices, and of the prieſts and Levites, before they performed the ſeveral ſervices aſſigned them; and for this purpoſe it was drawn out by pipes and conduits. It was filled with water by the Gibeonites, who were afterwards called Nethinims.

Brazen *ſerpent*, a figure of the fiery ſerpent or ſaraph, which Moſes was inſtructed to form and to elevate upon the top of a pole, promiſing the Hebrews, that all who were bitten by ſerpents, and ſhould look towards this image, ſhould be healed; as the event proved. Numb. xxi. 9. Our Saviour compares the lifting up of this ſerpent on the pole to his elevation, or crucifixion, upon the croſs. John, iii. 14. John, xii. 32. This brazen ſerpent was preſerved among the Iſraelites till the time of Hezekiah, who, being informed that the people paid a ſuperſtitious worſhip to it, ordered it to be broken in pieces, and by way of contempt gave it the name of "Nehuſhtan," i. e. a brazen bawble or trifle. 2 Kings, xviii. 4.

BRAZIER, an artificer who makes and ſells pans, pots, kettles, and other kitchen utenſils and braſs ware.

Itinerant braziers, who go about with their tools and knapſacks, are called *tinkers*; by the French, *braziers of the whiſtle, chouderoniers au ſifflet*.

BRAZIL-*wood*, in *Botany*. See Cæsalpinia, and Brasil-*wood*.

BRAZING, the ſoldering or joining of two pieces of iron by means of thin plates of braſs, melted between the two pieces to be joined.

If the work be very fine, as when the two leaves of broken ſaws are to be joined, it is to be covered with beaten borax, moiſtened with water, that it may incorporate with the braſs-duſt, which is here added; and the piece is expoſed to the fire, without touching the coals, till the braſs be obſerved to run. To braze with a ſtill greater degree of nicety, they uſe a ſolder made of braſs, with a tenth part of tin; or another, one-third braſs, and two-thirds ſilver; or borax and roſin: obſerving, in all theſe ways of brazing, that the pieces be joined cloſe throughout; the ſolder only holding in thoſe places that touch.

The method of brazing, among ſmiths, farriers, &c. is by beating the two pieces, when hot, over one another; this is more properly called *welding*.

BRAZZA, ſo called from the town of *Brazza*, in *Geography*, an iſland in the gulf of Venice, about 10 leagues long, and 3 broad, near the coaſt of Dalmatia, oppoſite to Spalatro, and ſubject to Venice. N. lat. 43° 45′. E. long. 16° 19′.

BRE′, a river of Denmark, which runs into the North ſea; 6 miles S. W. of Tondern.

BREA, a ſmall iſland in the Pacific ocean, near the weſt coaſt of North America. N. lat. 16° 38′. W. long. 99° 1′.

BREA *head*, a cape on the ſouth-weſt coaſt of Ireland, being the ſouth-weſt point of Valentia iſland, in the county of Kerry. N. lat 51° 50′. W. long. 10° 16′.

BREACH, in a general ſenſe, denotes a break or rupture in ſome part of a fence or incloſure, whether owing to time or violence. The word is formed from the French *breche*, which ſignifies the ſame; formed of the German *brechen*, to *break*.

Inundations, or overflowings of lands, are frequently owing to breaches in the dikes, or ſea-banks. Dagenham breach is famous; it was made in 1707, by a failure of the Thames wall, in a very high tide. The force wherewith it burſt in upon the neighbouring level, tore up a large channel or paſſage for water a hundred yards wide, and in ſome places twenty feet deep, by which a multitude of ſubterranean trees, which had been buried many ages before, were laid bare. Phil. Tranſ. No 335. p. 478.

BREACH, in the *Military Art*, is an extenſive aperture, gap, or opening made in any part of the works of a town, either by battering the walls with artillery or ſpringing mines, in order to ſtorm the place, or carry it by aſſault. They ſay, *make good the breach*, *fortify the breach*, *make a lodgment on the breach*, &c. *To clear the breach*, is to remove the ruins that it may be the better defended.

The ancients were not provided with means ſo effectual as our artillery to batter down the walls of fortified places. The catapultæ and baliſtæ, redoubtable as they were in the open field, or the attack of a camp, were not competent to this effect. With the Greeks, the Romans, and other nations of antiquity, it was neceſſary to advance cloſe under the walls before they could make uſe of the ram, their principal inſtrument of aſſault. All the other operations of a ſiege; the conſtruction of their aggeres or terraſſes, the moving turretts, the teſtudoes, galleries, and vineæ, were only directed towards this principal object, that of favouring the approach of the ram towards the town. So long as the beſieged maintained themſelves in poſſeſſion of their walls, it was not poſſible to make uſe of this formidable weapon. Moſt of their machines, eſpecially ſuch as tended to avert the effect of the ram, were diſpoſed upon the parapet of the front attacked; and maſters of their battlements, they galled the beſiegers with inceſſant ſhowers of darts and arrows, large ſtones, entire beams, burning pitch, melted lead, and every kind of miſſile arms. They directed their principal machines againſt the ram, whoſe force was uſeleſs the inſtant its equilibrium was diſturbed. But as ſoon as the catapultæ and baliſtæ of the aſſailant had cleared the walls of the place, and the beſiegers, protected by their terraſſes, had filled the ditch, no obſtacle remained to prevent the application of the battering ram. Its effect was inevitable the moment the vibration of the machine was undiſturbed and free. The place was then reduced to the laſt extremity; and if the garriſon had raſhly held out until the ram had ſtruck the wall, "ſi areis murum tetigiſſet," no capitulation was afterwards granted, unleſs upon the ſevereſt terms.

The ram generally approached the place under the protection of the teſtudo, a kind of covered gallery, within which it was either ſuſpended in equilibrio, or reſted on a baſe, and worked by a conſiderable number of hands. In this ſituation, no tower or wall of maſonry, however thick, could for any length of time reſiſt the tremendous ſhock which accompanied its blows. The ram, however, was not always the method uſed by the ancients to effect a breach. They ſometimes employed their *orygmata*, ſubterraneous paſſages, or mines, which, having carried completely under the front of the place attacked, they ſuſtained the walls by enormous beams, until the ſpace undermined was judged ſufficient, and then ſetting fire at the ſame time to all theſe beams, their fall infallibly brought along with it great part of the fortification, and opened a wide breach for the aſſailants to mount over.

Among the ancients, the art of defence, the moment that the beſiegers had filled the ditch, planted their machines, and brought the battering ram up to the foot of the wall, bore no proportion to that of attack. Several means, however, were invented to prevent or leſſen the effect of this laſt terrible machine, particularly at the ſiege of Platæa, in the Peloponneſian war. The beſieged made uſe of nooſes or pincers, with which they caught the head of the ram, and either drew it up to the walls, or at leaſt diſturbed its equilibrium for a conſiderable time, and ſpoiled the effect of its ſtroke. They alſo made uſe of a large beam, hung horizontally, by heavy iron chains, to two immenſe wooden levers, planted upon the battlements. This, when they beheld the ram about to commence its action, they elevated to a great height, and letting it fall ſuddenly upon the machine, it cauſed the head of the ram to plunge, and thus conſiderably deadened, if not entirely deſtroyed, the impetuoſity of its blow. Even when the breach was made, the diligence of the garriſon ſometimes provided the means of a new defence. During the ſiege, it was cuſtomary to build a new wall, in form of a creſcent, behind that againſt which the enemy directed their principal efforts. This much diſheartened the beſiegers, who, when they flattered themſelves with having overcome all reſiſtance, and holding the town at their mercy, were thus often obliged to recommence the prodigious labour of their aggeres, vineæ, and other machines, againſt the re-entering wall: a new labour equally difficult and dangerous, as in the proceſs their flanks were laid open to the darts, ſtones, and other miſſiles of the enemy. The celebrated ſieges of antiquity afford many inſtances of this method of protracting a defence. The ſieges of Platæa, by Archidamus; of Halicarnaſſus, by Alexander the Great; and of Rhodes, by Demetrius Poliorcetes, are the moſt remarkable in the Grecian hiſtory. On the latter occaſion, the town was preſerved by the conſtruction of a ſecond wall, when the machines of the Macedonians had overthrown the firſt, and made a very practicable breach. At Athens, when beſieged by Sylla, in his war againſt Mithridates, the ſame expedient was made uſe of; but without the ſame ſucceſs. But ancient hiſtory affords no example of a ſiege where this mode of defence was carried to ſo great a length as at Saguntum, when attacked by Hannibal. Several walls were repeatedly raiſed one after another, to protect thoſe parts of the town in which the Carthaginians had not got footing; and by dint of theſe ſucceſſive incloſures, the inhabitants maintained a bloody reſiſtance for nearly eight months: The fatal conſequences of this obſtinacy are ſufficiently known. Guichard, Me-

moires Milit. tom. ii. Cæſar de B. G. lib. ii. Thucyd. Hiſt. lib. ii. Arrian de exp. Alex. lib. i. Diodorus Sic. Hiſt. lib. xx. Plutarch in Sylla. Appian. de Bel. Mithrid. Livius Hiſt. lib. xxi. Polyb. de Folard. Rollin. Hiſt. Ancienne.

In modern warfare, breaches are ſometimes effected by battering the place with cannon, ſometimes by ſpringing of mines, and oftentimes by a combination of both. In the former caſe, batteries for making a breach in the body of the place, and ruining the defences, are generally erected upon the covert way, after the beſieged have been driven from all their exterior fortifications. As the ravelin is to be attacked firſt, and is flanked or defended by the faces of the baſtions oppoſite to its ditch, the firſt batteries erected are to ruin the defence of the ditch, and to make breach in the ravelin. Each of theſe batteries ſhould contain four or five 24 pounders at leaſt. Sometimes the batteries raiſed againſt the ravelin are alſo uſed to batter the faces of the baſtions; but as this cannot be done without breaking the wall of the ravelin too near the ſaliant angle, it will be much better to erect batteries for that purpoſe, although if the faces of the protecting baſtions were well enfiladed by the guns of the firſt parallel, firing a ricochet, there would be no occaſion for any others. Whilſt theſe batteries are erecting, freſh ones muſt be made to ruin the flanks of the baſtions, of as many guns as can be placed oppoſite to them, as alſo ſome to play againſt the oppoſite faces. The beſt place for effecting breaches, both in the ravelin and baſtions, is about 15 fathoms from the ſaliant angle; ſo that battering on both ſides of the angle the breach will become ſpacious and large; whereas, on the contrary were the breach made too near the angle, it would become too ſmall and incommodious.

All theſe batteries are made on the ridge of the glacis, within three fathoms of the covered way, which interval ſerves to conſtruct the parapet or epaulement; and as the guns which are to effect a breach ſhould fire as low as the bottom of the ditch, the embrazures muſt be made ſloping downwards accordingly. The guns intended to make breach ſhould always fire together, or in ſalvo's, and as nearly in the ſame place as poſſible, and continue ſo till the wall is quite pierced, which may be known by the earth's falling. They muſt begin firing at firſt as low as they can, and batter the wall nearly in an horizontal line, as far as the breach is intended to be made; afterwards fire ſomething higher, in the ſame manner as before, and continue ſo to do till the wall tumbles down; for ſhould they fire at firſt too high, the rubbiſh would cover the lower part of the wall, ſo as not to be broken afterwards, and the breach thus become impracticable. The wall being broken down as far as is neceſſary, the counterforts muſt be beat down likewiſe, which, as they advance farther into the earth than the wall itſelf, will be ſooneſt demoliſhed by firing at them obliquely.

The other, and the ſhorteſt way to make a breach, is to pierce the wall with guns, ſo as to make a hole for two or three miners to lodge themſelves in it, who are ſent over the ditch as ſoon as it is dark (in boats, if the ditch is full of water), and make three or four ſmall mines under the parapet, which, when ſprung, will at once open a breach ſufficiently large, and wanting nothing but to be cleared in order to give an aſſault. The breach effected by battering, however, certainly coſts leſs men than that accompliſhed by mines, becauſe, in caſe of a dry ditch, the neceſſary eſtabliſhments there to ſuſtain the miner are avoided; and, if the foſſé is filled with water, the ruins of the breach partly choak it up.

The breach being made, and the effects of the mine clearly diſtinguiſhable, however practicable it may appear, it is not prudent to hazard a general aſſault immediately after the mine has been ſprung. It is neceſſary that it ſhould be well examined by hardy and reſolute men, who ſhould, if poſſible, gain the top of the breach, reconnoitre the poſture of the garriſon, and diſcover what precautions they may have taken in different places, to counteract the effects of a ſtorm. All breaches made in the body of a place, or in the more important outworks, ſhould be widened as much as the ground will admit of, ſo as to oppoſe to the enemy a greater front than that by which he can advance to drive out the beſiegers. A practicable breach ought to be fifteen or twenty fathoms wide. This, once made, and the ground levelled, with all materials and tools at hand, the troops deſtined to mount the breach diſpoſed ready for the aſſault, and others drawn up to ſupport them in caſe of need, the guns and mortars ſhould begin to fire briſkly on all the defences of the place which flank the front attacked, both directly, and enfilading them by the ricochet batteries; and a great number of ſhells and ſtones ſhould be thrown into the ravelin or baſtion, and its defences. This having continued for ſome hours, the ſignal is given for ceaſing to fire; and the troops marching to the aſſault, charge the garriſon vigorouſly, and oblige them to retire. After this, the workmen, headed by an engineer, advance to make a lodgment on the upper part of the breach, which, when partly done, the troops retire behind it, ready to repulſe the beſieged if they ſhould return, which they will not fail to do as long and as often as they can. But when this lodgment is once ſo far advanced as to be in a condition of receiving a good number of troops, the beſieged will have it no longer in their power to diſturb them by open force, and therefore they will make uſe of their mines, as the laſt reſource left them, if they have not been prevented beforehand, either to blow up the lodgment, or any other place where they perceive a body of men.

When the inner intrenchments have not been ruined by the bombs or mines, which may be the caſe when they are furniſhed with revêtements, or have not been ſufficiently reconnoitred, other proceedings become neceſſary. Lodgments ſhould be carried on by ſaps along the parapet, to get poſſeſſion of the traverſes, if the beſieged have made any to ſhelter themſelves from the ricochet batteries. Theſe lodgments muſt themſelves be well traverſed, from the enfilades to which they are unavoidably expoſed, and joined by others acroſs the work, which ſerve as a ſort of parallels to diſlodge the garriſon from their intrenchments. If the beſieged are retrenched upon the two flanks of the baſtion, or at its gorge, which, it is to be preſumed, is the caſe, when the exploſion of the mines does not entirely drive him out of the work, it will be expedient to make capacious lodgments on the breach, extend it by means of fourneaux and ſmall mines, and render its acceſs practicable and eaſy, even for heavy artillery, which it may be neceſſary to mount in battery on the top of the breach, in caſe that the bombs fail in driving the garriſon out of their retrenchments. If there ſhould be any palliſades placed either round theſe retrenchments, or ſerving for retrenchments themſelves, they muſt be broken down with the guns from ſome battery that can play upon them; or, if this cannot be done, ſmall mines muſt be carried underneath to blow them up.

Theſe are neceſſary precautions againſt the obſtinacy of a governor or garriſon, who are determined to defend themſelves to the laſt extremity, and which, on ſuch an occaſion, muſt never be neglected. For an aſſault given haſtily and inconſiderately after ſpringing a mine, and which a prudent and wiſe governor only withſtands when he finds himſelf enabled to do ſo without much riſk of being forced, always coſts a general ſome of the beſt and braveſt ſoldiers in his army, and frequently deters the reſt from ſubſequent hazardous attempts, eſpecially if the deſtruction from the countermines and fougaſſes has been conſiderable. When the breach is to be carried ſword in hand, it is indiſpenſibly neceſſary that all the defences of the work ſhould be ruined; the breach itſelf very practicable, and that, both before and during the attack, an inceſſant fire of cannon, muſquetry, and mortars ſhould be poured upon, and into the works enfilading that, the immediate object of the aſſault. The front of the attack ſhould ſurpaſs and embrace the whole extent of the work; for, under theſe circumſtances, the ſuperior depth and number of the beſieger's column of attack, muſt neceſſarily, as at Oczakow, Bender, Valenciennes, &c., overbalance the inefficient reſiſtance which can be oppoſed by a garriſon. It was from a neglect of all theſe precautions, that the grand attack of the confederates upon the caſtle of Namur in 1695 entirely failed. The columns deſtined to mount the different breaches began their march from too great a diſtance, and, although protected by a prodigious fire of bombs and artillery, the moſt forward never penetrated further than the middle of the breach; and they retired after ſuſtaining a ſerious loſs. In fact, it is almoſt impoſſible to mount a breach by aſſault, while any works remain, whoſe fire is either directed upon, or enfilades the attack.

But, on the other hand, it is equally raſh in a governor to reſiſt a ſtorm, or hazard the lives of his garriſon in fruitleſs attempts to maintain poſſeſſion of the breach, after theſe works have all been deſtroyed, and the breach is reduced to its own defences. A place thus obſtinately holding out is in danger of being taken by aſſault, and the garriſon put to the ſword, or obliged to ſurrender at diſcretion. Retrenchments, indeed, may ſometimes ſerve to protract an unvailing reſiſtance; but their conſtruction ſhould not be delayed, as is generally the caſe, till after a breach has been made in the body of the place, with the ſole view of obtaining a better capitulation. When the ſiege is once formed, much time is loſt in their formation; and the loſs of men by the bombs thrown into the baſtion is very great, beſides the conſiderable fatigue which the ſoldiers experience. In the ravelins, horn-works, crown-works, lunettes, and other detached fortifications, they are of greater ſervice, eſpecially when the ditches are dry, and the communication with the body of the place eaſy; for, then it becomes impoſſible to carry them by the gorge. And when they have revêtements, and a foſſé, the beſiegers will be reduced to the neceſſity of bringing up artillery upon the work to batter them in breach, or to try the effect of his bombs. If the enemy adopt the method of a blinded ſap, he muſt be very careful to cover himſelf from the fire of the curtain, and the faces of the baſtions; and in every one of theſe caſes, much time is loſt before he can approach the body of the place.

The breach itſelf may alſo be defended to advantage. When the enemy are ready to mount, a great quantity of all kinds of combuſtibles are thrown at the foot of the breach, to be fired, and conſtantly ſupplied with fuel. While they are mounting, a great number of grenades muſt be thrown among them: ſacks, glaſs, or earthen bottles filled with powder, and burning matches twiſted round them; crows-feet, harrows, and large timbers, with long iron ſpikes faſtened with chains, ſo as not to be removed, as alſo ſhells, ſo confined, as not to roll out of the breach. A great quantity of looſe powder may alſo be ſcattered about, and fire ſet to it at the approach of the enemy. This being well executed, and fire arms, both great and ſmall, well ſerved, together with the mortars for throwing ſhells and ſtones, will do them infinite damage, and ſenſibly retard the taking of the work. When the defence is exhauſted, and the enemy at laſt are maſters of the breach, the mines are fired, to deſtroy, if poſſible, their lodgment, with all the men eſtabliſhed in it. Should this ſucceed, the beſieged may return immediately, and clear the breach, ſo as to render it impracticable. Several mines ſhould be made under one another, if the ground will allow of it, that the breach may be deſtroyed ſeveral times, which will ſometimes diſhearten the enemy's troops, put them out of all patience, and may eventually contribute to make them raiſe the ſiege, as was the caſe at Maſtricht, when beſieged by the prince of Orange in 1674.

Muller. Syſt. of Mathemat. vol. vi. Feuquieres Memoires Milit. chap. xcvii. xcviii. and xcix.

BREACH *of cloſe*, in *Law*. See CLOSE.

BREACH *of covenant*, denotes the non-performance of any covenant expreſſed or implied in a deed: or the doing of an act, which the party covenanted not to do. See COVENANT.

BREACH *of duty*, denotes the non-execution of any office, employment, or truſt, &c. in a due and legal manner. See ASSUMPSIT.

BREACH *of peace*. See PEACE.

BREACH *of pound*. See POUND.

BREACH *of priſon*. See PRISON.

BREACH, *to batter in*, *batre en brêche*. See BATTERING.

BREACH, *mounting the*. See MOUNTING.

BREAD ordinarily is made of the flour or meal of ſome farinaceous vegetable ground, and kneaded with water and leaven or yeaſt.

In deſcribing the proceſs of making bread, it is natural, in the firſt place, to advert to the ſubſtance or material of which it principally conſiſts. This is the flour obtained from farinaceous vegetables, principally wheat or rye, or a mixture of both theſe, called in many parts of the kingdom bread-corn, converted into meal by trituration, or grinding in a mill, and ſeparated from the huſk or bran by ſifting or bolting. This is compoſed of a ſmall quantity of mucilaginous ſaccharine matter, ſoluble in cold water, and ſeparable from it by evaporation, much ſtarch, which is ſcarcely ſoluble in cold water, but capable of combining with that fluid by heat, and an adheſive grey ſubſtance, called gluten, inſoluble in water, ardent ſpirit, oil, or ether; and in many of its properties reſembling an animal ſubſtance. When flour is kneaded with water, it forms a tough paſte, containing the conſtituent principles of flour, with very little alteration, and not eaſily digeſted by the ſtomach. By heat the gluten, and probably the ſtarch undergoes a conſiderable change, and the compound is rendered more eaſy of maſtication, as well as of digeſtion. When this dough is kept in a warm place, it ſwells up, becomes ſpongy, and filled with a number of air-bubbles, diſengages at length an acidulous and ſpirituous ſmell, taſtes ſour, and in this ſtate is called “leaven,” from the French word “lever,” to raiſe. Whilſt the dough, or paſte, is left to undergo a ſpontaneous decompoſition, in an open veſſel, the various component parts are differently affected; the ſaccharine part is convertible into an ardent ſpirit, the mucilage tends to acidity and mouldineſs, and the gluten probably verges towards a ſtate of putridity. By this incipient fermentation, the maſs is rendered more digeſtible and light; that is, it becomes much more porous by the diſengagement of elaſtic fluid, which ſeparates its parts from each other, and much enlarges its bulk. The operation of baking puts a ſtop to this proceſs, by evaporating a great part of the moiſture which favours the chemical attraction, and probably alſo by ſtill further changing the nature of the component parts. Bread, however, in this ſtate, will not poſſeſs the requiſite uniformity; becauſe ſome parts may be mouldy, while others are not yet ſufficiently changed from the ſtate of dough. In order to promote an uniform fermentation, a ſmall portion of leaven is intimately blended with a quantity of other dough; and this, by its union with the maſs, and the aid of a gentle heat, accelerates the fermentation, and diffuſes it through the whole maſs at the ſame time; and as ſoon as the dough has acquired a due increaſe of bulk from the carbonic acid gas, which endeavours to eſcape, it is judged to be ſufficiently fermented, and fit for the oven; the heat of which checks the fermentation by exſiccation, or the ſubtraction of its water. It is obvious, that by the fermentation of the dough united with leaven, a quantity of carbonic acid gas is extricated from the flour, but remains confined in it by the tenacity of the maſs, where it is expanded by the heat, and by that expanſion effects the "riſing" of the dough. This is alſo the efficient cauſe of the poroſity and ſpongineſs in baked bread. The fermentation by means of leaven is thought to be of the acetous kind, becauſe it is generally ſo managed, that the bread has a ſour flavour or taſte. This bread, raiſed by leaven, is uſually made of a mixture of wheat and rye not thoroughly cleared of the bran, and is diſtinguiſhed by the appellation of brown bread; and the practice of making leavened bread appears, from the hiſtories of the earlier nations, and particularly from the ſcriptures, to be very ancient. But yeaſt or barm, which is the mucilaginous froth that riſes to the ſurface of beer in the firſt ſtage of its fermentation, ſeems to be of modern date. This vinous ferment is uſed for the finer kinds of bread, commonly denominated white bread. When this is mixed with the dough, it produces a much more ſpeedy and effectual fermentation than that obtained by leaven, and the bread is accordingly much lighter, and ſcarcely ever ſour. The fermentation by yeaſt ſeems to be almoſt certainly of the vinous or ſpirituous kind.

Bread, if well prepared and properly baked, is materially different from flour and other farinaceous cakes; it no longer forms a tenacious dough with water; nor can ſtarch and gluten be any more ſeparated from it; and hence, moſt probably, its good qualities reſult.

The Greeks, in the firſt ages, are ſaid to have ſubſiſted upon acorns and berries, and were for a long time unacquainted with the art of ploughing the earth for corn; although, according to Heſiod's deſcription of the golden age (Oper. l. i. v. 116.), the earth produced corn without cultivation. When this age expired, the earth, as they imagined, became unfruitful, and men lived in a ſtate of extreme ignorance and barbarity, till Ceres taught them the art of agriculture. The invention of making and baking bread was aſcribed to Pan; and, according to Pliny (Nat. Hiſt. l. xviii. c. 7.), barley was uſed, before any other ſort of corn, as the food of men; but in more civilized ages, barley-bread was only appropriated to the uſe of beaſts. However, it afterwards was uſed only among the poor, who could not obtain any other proviſion. Among the Greeks their loaves were baked either under the aſhes, or in the oven; and they had a kind of bread, called μαζα, which was made with a coarſer flour, ſalt, and water; to which they ſometimes added oil. The art of making bread was not known at Rome until A. U. C. 580. The Roman armies, on their return from Macedonia, brought Grecian bakers into Italy. Before this time the Romans (ſee Pliny, Hiſt. l. xviii. c. 8. and 11.) prepared their flour into a kind of pap, or ſoft pudding; for which reaſon Pliny calls them eaters of pap.

Among the ancients, we find various denominations of bread; ſuch as 1. *Panis ſiligineus*, called alſo *mundus*, *athleticus*, *iſungia*, *coliphius*, and *robys*, correſponding to our white bread; being made of the pureſt flour of the beſt wheat, and only uſed by the richer claſs of perſons. 2. *Panis ſecundus*, or *ſecundarius*, called alſo *ſmilaceus*, or *ſmilagineus*, the next in purity; being made of fine flour, from which all the bran was not ſifted. 3. *Autopyrus*, called alſo *ſyncomaſtus*, and *confuſaneus*, made of the whole ſubſtance of the wheat, without retrenching either the finer flour or coarſer bran; correſponding to our houſhold bread. 4. *Cacabaceus*, ſeeming to be the ſame with that otherwiſe denominated *ſordidus*, as being given to dogs; *furfuraceus*, *furfureus*, or *furfurativus*, becauſe it conſiſted moſtly of bran; and, in the middle age, *biſſus*, on account of its browneſs; and ſometimes alſo *leibo*

There were other kinds of bread, denominated either from the uſes to which they were applied, or the manner in which they were made; ſuch as, 1. the *militaris*, which was prepared in camp by the officers and ſoldiers with their own hands; for which purpoſe ſome had hand-mills, and others pounded the corn in a mortar, and baked it on the coals. 2. *Clibanites*, that baked in an oven, by way of contradiſtinction from that baked on the hearth, or under the embers. 3. That called *ſubcineritius*, or *ſub ſinere coctus*; ſometimes alſo *reverſatus*, becauſe it was to be turned in the baking. 4. *Nauticus*, anſwering to our ſea-biſcuit, and denominated *bis coctus*. See Bisket.

Other kinds of bread were denominated from certain qualities belonging to them; ſuch as, 1. *Panis ſiccus*, that which had been long baked; ſuch was the *bis coctus*, naval and buccellated bread. 2. *Madidus*, a ſort made of rye or bear, ſometimes alſo of fine flour, with which they ſmeared their faces, by way of a coſmetic, to make them ſmooth. 3. *Acidus*, or ſour bread, which was acidulated with vinegar. 4. *Azymus*, unleavened, or unfermented bread.

The French have alſo many varieties of bread; as queen's bread, alamode bread, bread de Segovie, de Gentillay, quality bread, &c. all prepared in peculiar ways by the bakers at Paris. The bread de Goneſſe excels all others, on account of the waters at Goneſſe, about 3 leagues from Paris; it is light, and full of eyes, which are marks of its goodneſs. *Pain de menage* is that which each family bakes for itſelf. Spice-bread, *pain d'epice*, denotes bread baked and iced over with the ſcum taken off ſugar in refining houſes; it is alſo ſometimes made with honey, and other ſorts of ſeaſoning, and anſwers to what the ancients call *panis mellitus*.

Among us, bread is chiefly divided into *white*, *wheaten*, and *houſhold*; differing only in degrees of purity. In the firſt, all the bran is ſeparated; in the ſecond, only the coarſer: in the third, none at all; ſo that *fine bread* is made only of flour; *wheaten bread*, of flour, with a mixture of the finer bran; and *houſhold*, of the whole ſubſtance of the grain, without taking out either the coarſe bran or fine flour. Stat. 8 Ann. cap. 18. We alſo meet with ſymnel bread, manchet or roll bread, and French bread; which are only ſo many denominations of the fineſt or whiteſt bread, made of the pureſt flour; except that in roll bread there is an addition of milk, and, in French bread, of eggs and butter alſo. To which may be added, *ginger-bread*, made of white bread, with almonds, liquorice, aniſeed, roſe-water, and ſugar or treacle; and *maſtiſ-bread*, *panis mixtus*, made of wheat and rye, or ſometimes of wheat and barley.

The proceſs of making houſhold bread among us, is thus: to a peck of meal they add a handful of ſalt, a pint of yeaſt, and three quarts of water, cold in ſummer, hot in winter, and temperate between the two; the whole being kneaded in a bowl or trough by the fire in winter, from it in ſummer, will riſe in about an hour; they then mould it into loaves, and put it into an oven to bake.

For unleavened bread, part of the flour intended for it being made into dough with warm water and a little ſalt, is laid in the reſt of the flour an hour or more, in which time it riſes to three times the bulk; then they mix and knead the whole with more water, till it be brought into a ſtiff dough; which being formed into loaves, is baked in the oven; though the more uſual way is to take a piece of dough kneaded and leave it in the tub till next time, when they break it ſmall and mix it with the meal, adding ſome yeaſt. Hought. Collect. tom. i. N°. 90. p. 241.

For French bread, they take half a buſhel of fine flour, ten eggs, and a pound and a half of freſh butter, into which they put as much yeaſt, with a manchet; and tempering the whole maſs with new milk, pretty hot, let it lie half an hour to riſe, which done, they make it into loaves or rolls, and waſh it over with an egg beaten with milk; care is taken the oven be not too hot.

In Lancaſhire, and ſeveral other northern counties of England, the people have ſeveral ſorts of oaten-bread: as, 1. The *bannock*, which is an oat-cake, kneaded only with water, and baked in the embers. 2. *Clap-bread*, which is made into thin hard cakes. 3. *Bitchineſs-bread*, which is made of thin batter, and formed into thin ſoft oat-cakes. 4. *Riddle-cakes*, which are thick and ſour, and very little different from the hand-hover bread, which has but little leaven, and kneaded ſtiff. And, 5. *Jannock*, which is oaten-bread made up into loaves.

In Scotland they have peaſe-bread, conſiſting either wholly of the flour of peaſe, or of this and oatmeal mixed; the dough, ſometimes leavened, and ſometimes made only with water, is formed either into bannocks or cakes, and baked over the embers; or into what they call *baps*, i. e. a kind of flattiſh rolls, and baked in the oven.

In the ſtatute of aſſiſe of bread and ale, 51 Hen. III. mention is made of waſtel-bread, cocket-bread, and bread of treet; which anſwer to the three ſorts of bread now in uſe, called *white*, *wheaten*, and *houſhold bread*.

In religious houſes, they heretofore diſtinguiſhed bread by the names, eſquires-bread, *panis armigerorum;* monks-bread, *panis conventualis;* boys-bread, *panis puerorum:* and ſervants bread, *panis famulorum;* or *panis ſervientalis*. A like diſtribution obtained in the houſholds of nobles and princes; where, however, we find ſome other denominations, as meſſengers-bread, *panis nuncius*, that given to meſſengers, as a reward of their labour; court-bread, *panis curialis*, that allowed by the lord for the maintenance of his houſhold; eleemoſynary-bread, that diſtributed to the poor in the way of alms. Du-Cange Gloſſ. Lat. tom. iv.

Bread is uſually made of the ſeeds, ſometimes alſo of the roots, and even the pith of plants. The firſt bread is ſuppoſed to have been made of the plant "lotus." In ſome countries they make bread of acorns. See ACORNS. In the iſlands of Banda and Amboyna, they make a kind of bread called "ſacgem," or "ſagoe," of the pith of a farinaceous tree, which yields a white mealy ſubſtance, that, being kneaded with water, fermented, and baked on the coals, ſerves the poor for bread. See SAGO. In the Caribbee iſlands, &c. they make bread of the root of a poiſonous plant called "Manioc;" probably the ſame with the Caſſada bread, which is made of the root of the Yucca Mexicana. See MANIOC, and CASSADA. To the denomination of bread, made of roots, may alſo be added potatoe-bread, frequent in Ireland, and turnip-bread, uſed occaſionally in ſome parts of England. Potatoes, previouſly peeled, cut into thin ſlices, and put between folds of paper, will dry in a heat ſomewhat leſs than 35° of Reaumur's thermometer, and, when thus dried, will preſerve their white colour. In this proceſs they loſe about two-thirds of their weight, and they may be then reduced to a fine powder, which indicates the preſence of an amylaceous matter, and has the ſmell and taſte of wheat. It is alſo nutritious, and may be kept for a long time. From theſe circumſtances, M. Parmentier was led to attempt the making of bread with the meal of wheat, and that of potatoes, mixed in different proportions. By combining one-fourth, one-third, one-half, and two-thirds of the potatoe meal with the flour of wheat, and adding a little ſalt and yeaſt, he obtained bread that was well taſted, but which had fermented little, was brown, and covered with hard brown cruſts. Bread made from the meal of potatoes alone, with the addition of ſalt and yeaſt, was eatable, but heavy, unfermented, and very brown; and apt to crumble into powder. In order to give it greater adheſion, M. Parmentier mixed with the meal a decoction of bran, or a mixture of honey and water, either of which made it lighter and more fermented; it thus alſo obtained a cruſt of a golden colour, and became well taſted, and ſufficiently adheſive. He obtained alſo well fermented bread, of a good colour and taſte, from a mixture of raw potatoe-pulp with mealy wheat, or potatoe-meal, with the addition of yeaſt and ſalt. Upon the whole, he recommends, after various trials, the mixture of potatoes, in times of ſcarcity, with the flour of wheat, inſtead of employing rye, barley, or oats, which has frequently been done; when grain is altogether wanting, he recommends the uſe of bread made from a mixture of the amylaceous powder of potatoes and their pulp, fermented with leaven or honey. The meal of this root, diluted with hot water, acquires a tenacious and gluey conſiſtence. This meal, however, gives a grey colour to bread made by mixing it with the flour of wheat; but a mixture of the pulp of potatoes with the flour of wheat does not produce brown-coloured bread. M. Parmentier made bread very much reſembling that of wheat, by mixing four ounces of amylaceous powder of potatoes, one dram of mucilage extracted from barley, one dram of the bran of rye, and $1\frac{1}{2}$ dram of glutinous matter dried and powdered. See POTATOE.

M. Parmentier alſo recommends the uſe of the horſe-cheſnut for the purpoſe of making wholeſome bread. With this view he adviſes taking off the ſkin, and preſſing out the juice, and reducing the fruit into a paſte, which, being diluted with water, and ſtrained through a ſieve, will yield a milky-coloured liquor, that, on being left to ſtand, depoſits a fine powder. This powder, when dried, has neither ſmell nor taſte, and is very fit for aliment; the maſs from which it is procured retaining the bitterneſs of the fruit. The roots of the bryony, he ſays, treated in the ſame manner, yield a ſimilar white powder. By the ſame treatment, fine, white, inſipid, inodorous powders may be procured from the roots of the iris, gladiolus, ranunculus, fumaria, arum, dracunculus, mandragora, colchicum, filipendula, and helleborus: plants which grow ſpontaneouſly, and in great abundance. The roots of the gramen caninum arvenſe, which ſome naturaliſts have conſidered as the original ſpecies from which all our grain is produced, are ſweet-taſted; and in order to their being prepared for bread, it is merely neceſſary to cleanſe them, to cut them ſmall, and to dry and pound them. The powder, he obſerves, does not diſſolve in cold water or ſpirits, but is diſſolved in boiling water, which it renders thick and cloudy; and, upon cooling, the whole maſs obtains a gelatinous conſiſtence. Upon a chemical analyſis, it yields an acid empyreumatic oil, which poſſeſſes a ſingular odour, reſembling that which is perceived on burning the plant. The ſpongy reſiduum, calcined in the air, gives a fixed alkali. From theſe properties, he infers, that it contains an amylaceous matter, ſimilar to that of grain, which appears to be the nutritive part of vegetables. This amylaceous matter, formed into a jelly, and diffuſed in water, keeps for a long time without ſuffering any change. It then turns acid, and at length putrefies. M. Parmentier gives an account of the bread which he obtained from the amylaceous powders of the different vegetables above-mentioned, with the addition of potatoes and a ſmall quantity of common leaven of grain. This bread appeared in general to be well fermented; it was of a good white colour, and free from any diſagreeable odour; but to the taſte it was ſomewhat inſipid, which he ſuppoſes might be corrected by the addition of a proper quantity of ſalt. In order to guard againſt a ſeaſon of ſcarcity, when ſome of theſe plants may not be procured, he propoſes a method of preſerving the matter thus obtained.

For this purpoſe, he adviſes, that bread prepared in the manner above-mentioned ſhould be carefully dried, reduced to powder and kept in a cloſe caſk. By this means he thinks it may be preſerved for a very long time, and be always ready to make an agreeable and wholeſome panada, with the addition of a little butter and ſalt. In order to determine the degree of nouriſhment which this alimentary powder was capable of affording, he tried its effect upon himſelf; and he found that three ounces of it for dinner, and as much for ſupper, made into panada with water, was a ſufficient quantity of aliment for a day. From his diſcharge by ſtool, while he uſed it, he had reaſon to believe, that it is almoſt totally alimentary. He concludes with recommending it not only as uſeful in times of ſcarcity, but as a proper ſubſtitute to ſea-biſcuit, and as a kind of food well adapted for armies and hoſpitals. Examen Chymique des Pommes de Terre, &c. Memoire ſur les vegetaux qui pourroient ſuppleer en temps de diſette à ceux que l'on employe communement à la nourriture des hommes, &c.

In order to make bread of turnips, the following method is recommended in the "Muſæum ruſticum et commerciale." When turnips are plentiful, a number of them ſhould be pulled, waſhed clean, pared, and boiled. When they are ſoft enough for being maſhed, the greateſt part of the water ſhould be preſſed out of them, and they ſhould then be mixed with an equal quantity in weight of coarſe wheat meal. The dough may then be made, in the uſual manner, with yeaſt or barm, ſalt, water, &c. It will riſe well in the trough; and after being well kneaded, it may be formed into loaves, and put into the oven to be baked. The perſon who made this experiment had other bread made with common meal in the ordinary method. The turnip-bread was baked rather longer than the other. When they were drawn from the oven, a loaf of each ſort was cut; and, upon examination, the turnip-bread was ſweeter than the other, not leſs light and white, with a ſlight, but not diſagreeable, taſte of the turnip. When it was taſted 12 hours after, this taſte was ſcarcely perceptible, and the ſmell was quite gone off. After an interval of 24 hours, it could not be known that it had any turnips in its compoſition, although it ſtill had a peculiar ſweetiſh taſte. After 24 hours, it appeared to be rather ſuperior to bread made only of wheat flour; it was freſher and moiſter; and, after a week, it was ſtill very good.

Rice will ſerve the purpoſe of making very good bread; and the method practiſed in Carolina is as follows: The grain is firſt waſhed by putting it in a veſſel and pouring water upon it, then ſtirring it; and changing the water until it is ſufficiently cleanſed. The water is then poured off, and the rice placed in an inclined poſition to drain. After being ſufficiently drained, it is put, while damp, for the greater facility of pulverization, into a mortar, and beaten to powder; it is then completely dried, and paſſed through a common kitchen hair-ſieve. The rice flour, thus obtained, is kneaded with a ſmall proportion of Indian corn-meal, and boiled into a thickiſh conſiſtence; or it is ſometimes mixed with boiled potatoes; and a ſmall quantity of leaven and ſalt is added to the maſs. When the fermentation has been ſufficiently excited, the dough is put into pans, and placed in an oven to be baked. By this proceſs a light wholeſome bread is made, which is not only pleaſing to the eye, but agreeable to the taſte. See Rice.

In Norway, they have bread made of barley and oatmeal, baked between two ſtones; and Bartholin ſays, that it keeps 30 or 40 years, and that the older it is, the more agreeable. For their great feaſt they uſe the oldeſt bread; and at the baptiſm of a child, they have bread, which had been baked probably at the baptiſm of the grandfather.

Dr. Townſon, in his "Travels in Hungary," has deſcribed the mode of making excellent bread without yeaſt, as it is practiſed at Debretzin in that country. The ferment uſed for this purpoſe is made in this manner: Two good handfuls of hops are boiled in four quarts of water; this is poured upon as much wheaten bran as it will moiſten; and to this are added four or five pounds of leaven. When the maſs is warm, the ſeveral parts are well mixed by being worked together. It is then depoſited in a warm place for 24 hours, and afterwards divided into ſmall pieces, about the ſize of a hen's egg, or a ſmall orange, which are dried by being placed upon a board and expoſed to a dry air, but not to the ſun; when dry they are laid by for uſe, and may be kept half a year. The ferment thus prepared, is applied in the following manner.

For a baking of ſix large loaves, ſix good handfuls of theſe balls are diſſolved in ſeven or eight quarts of warm water; and this water is poured through a ſieve into one end of the bread-trough, and after it three quarts of warm water, the remaining maſs in the ſieve being well preſſed out. The liquor is mixed up with flour ſufficient to form a maſs of the ſize of a large loaf; this is ſtrewed over with flour, the ſieve with its contents is put upon it, and the whole is covered up warm, and left till it has riſen enough, and its ſurface has begun to crack: this forms the leaven. Then fifteen quarts of warm water, in which ſix handfuls of ſalt have been diſſolved, are poured through the ſieve upon it, and the neceſſary quantity of flour is added, and mixed and kneaded with the leaven; this is covered up warm, and left for about half an hour. It is then formed into loaves, which are kept in a warm room for half an hour; and after that they are put into the oven, where they remain two or three hours, according to the ſize. The great advantage of this ferment is that it may be made in large quantities at a time, and kept for uſe; and on this account, it might be uſeful on board of ſhips, or in camps for armies in the field.

The quantity of bread allowed a ſoldier for his day's ſubſiſtence is called a ration.

For armies the bread is either baked in the park of proviſions in the camp, or in the town neareſt the army; for the conveniency of ovens, an army ought always to have at leaſt four days bread before-hand. In ſome caſes, the diſtance of the places from whence bread is to be had, or the army's march from one country to another, obliges the general to diſtribute bread for ſix, or even for eight days; a thing never done without abſolute neceſſity, by reaſon of the abuſe which ſome ſoldiers make of it, who ſell their bread without regard to future ſubſiſtence. For long marches through an enemy's country, they ſometimes, inſtead of bread, make biſket.

Bread, in *Domeſtic Economy*, ſerves as a nutritive aliment, in all countries where it can be obtained. The farinaceous vegetables are diſtributed ſo univerſally over the face of the earth, and have become to ſuch a degree the objects of culture, that they are very generally made into bread; and as generally a portion of them is taken into the mouth along with almoſt every morſel of other food. By fermentation it acquires a more ſpongy texture, and becomes more friable, and of courſe more eaſily miſcible with the ſaliva, and our other aliments, during the progreſs of manducation, which it neceſſarily retards, and whilſt the operation of digeſtion is performed in the ſtomach. To theſe purpoſes it is adapted by being bulky without too much ſolidity, and by being firm without too great difficulty of ſolution. The beſt aliment of this kind is bread, made of the flour of good wheat, well fermented, thoroughly baked, with a little ſalt; whereas that which is not thoroughly baked, well kneaded, and without ſalt, is reckoned hurtful and unwholeſome, as are alſo unleavened bread and cakes baked under the aſhes. In general, the lighter the bread the better and more agreeable it is; coarſe and barley bread is deterſive, commonly purgative, at leaſt to thoſe who are not uſed to it. "We are willing to own," ſays Dr. Cullen, in his diſcuſſion of this ſubject, "that a farinaceous ſubſtance, formed by fermentation into a perfect bread, is the moſt wholeſome condition in which farinaceous matters can be employed as a part of our food; and we are ready alſo to allow, that the unfermented farinacea, taken in immoderate quantity, eſpecially at a certain period of life, or in dyſpeptic ſtomachs, may be the cauſe of diſeaſe: but all this ſeems to have been exaggerated; for the morbid effects of unfermented farinacea are truly rare occurrences; and, indeed, the ſame unfermented farinacea are for the moſt part very well ſuited to the human economy. However conſiderable the uſe of fermented bread may be, the uſe of unfermented farinacea is ſtill very great and conſiderable amongſt almoſt every people of the earth. The whole people of Aſia live upon unfermented rice; and I believe (ſays he) the Americans, before they became acquainted with the Europeans, employed, and for the moſt part ſtill employ, their maize in the ſame condition. Even in Europe, the employment of unfermented bread, and of unfermented farinacea in other ſhapes, is ſtill very conſiderable; and we are ready to maintain, that the morbid conſequences of ſuch diet are very ſeldom to be obſerved. In Scotland, nine-tenths of the lower claſs of people, and that is the greater part of the whole, live upon unfermented bread, and unfermented farinacea in other forms; and at the ſame time I am of opinion (ſays this writer) that there are not a more healthy people any where to be found." In oppoſition to this fact it has been alleged, that this kind of diet is only ſafe, when uſed by robuſt and labouring people: but Dr. Cullen ſays, "We give it in this country not only to the farmer's labouring ſervants, but to our ſedentary tradeſmen, to our women, and to our children; and all of the latter live and grow up in good health, except a very few dyſpeptics who are not free from complaints, which thoſe alſo are liable to who live on fermented wheaten bread."

It is hardly neceſſary to ſay any thing of bread in reference to its medical uſe; however, decoctions, creams, and jellies of bread have been directed in ſome diſpenſaries. Bread, well baked, and infuſed or lightly boiled in water, imparts to it a deep colour, and a highly agreeable reſtringent taſte. This liquor, uſed as common drink, has been ſometimes beneficial in a weak lax ſtate of the ſtomach and inteſtines; and in bilious vomiting and purging, or the cholera morbus; of which inſtances occur in the Edinburgh eſſays, in which no other medicine was uſed. The uſe of bread, as an external application, is well known. Mr. Boyle aſſures us (Phil. Works Abr. vol. i. p. 34. 39.) that he derived a menſtruum from bread ſtronger than aqua fortis, and which would act even upon glaſs itſelf. See farther concerning bread in the writers on food and cookery; eſpecially in Hen. Nicolai, Tract. de Pane. Dantiſc. 1651. Fabr. Bib. Antiq. c. 19. § 6. Cullen's Mat. Med. vol. i. p. 283.

Bread, *bonpournichole*, or *bonpournickel*, the name of a very coarſe bread eaten in Weſtphalia, and many other places. This bread of the Weſtphalians ſtill retains the opprobrious name once given it by a French traveller, of *bonpournichole*, *good for his horſe Nichole*, but is by no means a contemptible kind. It is far from being peculiar to this age or country: it has been known in diſtant places, and in different ages, and was called by the ancients *panis furfuraceus*, or *panis impurus*, from its not being ſo thoroughly cleanſed from the huſk or bran, as the fine ſorts of bread are. The wreſtlers of old eat only this ſort of bread, to preſerve them in their ſtrength of limbs; and we may learn from Pliny, that the Romans for three hundred years knew no other bread: and it has been ſaid, that this coarſe bread nouriſhes more, aſſuages hunger better, and generates humours leſs ſubject to corruption than the white.

The inhabitants of Weſtphalia, who are a hardy and robuſt people, and capable of enduring the greateſt fatigues, are a living teſtimony to the ſalutary effects of this ſort of bread; and it is remarkable, that they are very ſeldom attacked by acute fevers, and thoſe other diſeaſes which ariſe from an ebullition of the humours, and a malignant colliquation of the blood, and of the humours of which it is compoſed. It is certain that a leſs ſtrong diet is more proper to weakly conſtitutions, and people of ſedentary lives, than this; but for thoſe who will uſe the neceſſary exerciſe with it, it is eaſy to ſee that it is preferable to all other kinds of bread; ſince it remarkably reſtores ſtrength, and has another ſalutary effect, which is, that it renders the belly ſoluble: this was a quality remarked in coarſe bread, and highly commended in it, ſo early as in the days of Hippocrates.

The Germans make two ſorts of waters by diſtillation from this bread; the one with, the other without, the addition of a ſpirituous liquor: to both which great virtues are aſcribed. That without any thing ſpirituous, is made of the juice of craw-fiſh, May-dew, roſe-water, nutmegs, and ſaffron, diſtilled from a large quantity of this bread. This is eſteemed a great reſtorative, and given in hectic habits. The other is diſtilled from this bread and Rheniſh wine, with nutmegs and cinnamon. This is given in all the diſorders of the ſtomach, vomiting, and loſs of appetite, and other complaints of the ſame kind; and beſides theſe, there is a ſpirit diſtilled from it by the retort, in the dry way, which, when ſeparated from its fetid oil, is eſteemed a powerful ſudorific, and very valuable medicine, in removing impurities of the blood. Hoffman.

Bread, *horſe*, is made of wheat, oats, and beans, to which ſometimes are added aniſeed, gentian, liquorice, fenugreek, eggs, and ale; and ſometimes rye and white wine are uſed.

For race-horſes, three ſorts of bread are uſually given with ſucceſs, for the ſecond, third, and fourth fortnights feeding; they are all made of beans and wheat, worked with barm, the difference conſiſting chiefly in the proportion of the two former. In the firſt kind, three times the quantity of beans is uſed to one of wheat; in the ſecond, equal quantities of both; in the third, three times the quantity of wheat to one of beans.

Bread, *ſacramental*, in the proteſtant churches, is common leavened bread, agreeable to the ancient practice. In the Romiſh maſs, *azymus*, or unleavened bread, is uſed, particularly in the Gallican church, where a ſort is provided for this purpoſe, called *pain a chanter*, made of the pureſt wheaten flour, preſſed between two iron plates, graven like wafer-moulds, being firſt rubbed with white wax, to prevent the paſte ſticking. See Azymus.

Eccleſiaſtical writers enumerate other ſpecies of bread, allotted for purpoſes of religion: as, 1. *Calendarius*, that anciently offered to the prieſts at the calends. 2. *Prebendarius*, the ſame with *capitularis*, that diſtributed daily to each prebendary or canon. 3. *Benedictus*, that anciently given to catechumens before baptiſm, in lieu of the euchariſt bread, of which they were incapable of partaking. 4. Conſecrated bread is a piece of wax, paſte, or even earth, over which ſeveral ceremonies have been performed with benedictions, &c. to be ſet up in an *agnus dei*, or a relic box, and preſented for veneration. 5. Unleavened bread, or *azymus*. The Jews eat no other bread during their paſſover; and exact ſearch was made in every houſe, to ſee that no leavened bread was left. The uſage was introduced in memory of their haſty departure from Egypt, when they had no leiſure to bake leavened bread. 6. *Shew* bread was that offered to God every Sabbath day, being placed on the golden table, in the holy of holies.

Bread *of St. Hubert, St. Genevieve, St. Nicholas*, &c. denote cakes ſanctified with certain prayers and invocations of thoſe ſaints, held by the ſuperſtitious to be of great efficacy in the cure of hydrophobias, agues, and other diſeaſes.

Bread is alſo uſed to denote certain foods made of animal, or even mineral matters, ſerving to ſupply the place of bread. In divers parts of the North, we read of fiſh-bread, particularly in Iceland, where dried cod is uſed for bread, being firſt beaten to powder, and made up into cakes. The like obtains among the Laplanders, whoſe country affords no corn; and even among the Crim Tartars. Phil. Tranſ. N° 102, p. 35. Sheff. Hiſt. of Lapl. chap. 14. In the lordſhip of Moſcow in Upper Luſatia, a ſort of white earth is found, of which the poor, urged by the calamities of the wars which raged in thoſe parts, make bread. This earth, dug out of a hill where they formerly worked at ſaltpetre, when warmed by the ſun, cracks, and ſmall globules proceed from it like meal, which ferment when mixed with meal. Some perſons have lived upon it for ſome time. Some of this meal has been kept for more than ſix years. A ſimilar earth is ſaid to be alſo found near Geronne, in Catalonia. Germ. Ephem. 1764.

Bread, in a more extenſive ſenſe, includes all the neceſſaries of life, as food, raiment, lodging, &c.

Hence the ſabbath is ſometimes called in ancient writers, the *day of bread*, by reaſon the euchariſt was then adminiſtered every Lord's day.

In this comprehenſive ſenſe the term bread ſeems to be uſed in the petition of the Lord's prayer. Matt. vi. 11. In this paſſage επιȣσιος αρτος, denotes "ſufficient bread," or a competency. The word επιȣσιος is one of the ἀπαξ λεγομενων, and is found in no Greek author prior to the Evangeliſt. The compoſition is of επι and ȣσια, *q. d.* proper, or ſufficient for ſupport; and it is not improbable, that επι ȣσιαν ſhould by degrees have coaleſced and become επιȣσιον, as it now ſtands in the MSS. The petition exactly correſponds to that in Agur's celebrated prayer, in the O. T. לחם חקי: Prov. xxx. 8. Compare Gen. xlvii. 22. with Luke xv. 12. The Syriac verſion has "the bread of our need." See Mede's works, vol. i. Diſſ. xxviii. p. 168.

Bread, *aſſiſe*, or *aſſiſe of*. The price and weight of bread are regulated by the magiſtrates according to the price of wheat; and the aſſiſe of bread, beer, ale, &c. is granted to the lord mayor of London and other corporations. Stat. 51 Hen. III. St. 1.; and 51 Hen. III. St. 6. See alſo 2 and 3 Ed. VI. c. 15. But the ſtatute of 31 Geo. II. c. 29. containing regulations concerning the aſſiſe of bread, and for preventing adulteration, repeals ſo much of ſtat. 51 Hen. III. entitled "Aſſiſa panis et cereviſiæ," as relates to the aſſiſe of bread, and the ſtat. 8 Ann. c. 18., and all amendments by ſubſequent acts; and re-enacts the ſame with additions and amendments. This ſtatute enacts, that the aſſiſe be ſet, in all places to which the right of ſo doing extends, with a regard to the price of the grain, meal, or flour, in the adjoining markets, and with a reaſonable allowance to the bakers for their charges, labour, and profit. In order to direct the magiſtrates in making this allowance, they are to take notice, that the peck loaf of each ſort of bread is to weigh, when well baked, 17lb. 6oz. avoirdupois weight, and the reſt in proportion; and that every ſack of meal, or flour, is to weigh 200 cwt. and 2 quarters, neat; and that from every ſack there ought to be made, at an average, 20 ſuch peck loaves of bread. By 38 Geo. III. c. 62. it is enacted, that the magiſtrates, before they ſet the aſſiſe of bread, ſhall add to the average price, per quarter of wheat fit for making wheaten bread, 5d. on account of the additional duty on ſalt, ſo as to increaſe ſuch average price 5d. per quarter; and in ſettling the aſſiſe, they ſhall uſe ſuch increaſed average price as if it were the real average price of wheat, ſo long as ſuch additional ſalt duty ſhall continue. By 31 Geo. II. c. 29. ſ. 3. no perſon ſhall make or ſell, in any place where the aſſiſe is ſet, any ſort of bread, except wheaten and houſehold (otherwiſe brown) bread, and ſuch ſorts of bread as ſhall be allowed in the aſſiſe; and the offender againſt this part of the ſtatute, upon conviction by his own confeſſion, or the oath of one witneſs, before any magiſtrate or juſtice within the limits of their juriſdiction, ſhall forfeit, not exceeding 40s. nor leſs than 20s.

In every place where an aſſiſe is ſet, the aſſiſe and weight of the ſeveral ſorts of bread there made are ſet according to tables, calculated for the purpoſe.

Table of the Aſſiſe and Price of Bread made of Wheat.

Price of the buſhel of wheat and baking.		Weight.				Price.															
		The penny Loaf.				Quartern Loaf.				Half peck.				Peck Loaf.							
		Wheaten.		Houſeh.		Wheaten.		Houſeh.		Wheaten.		Houſeh		Wheaten		Houſeh.					
s.	d.	oz.	dr.	oz.	dr.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.				
2	9	22	4	29	4	0	3¼	0	2¼	0	6¼	0	4¾	1	0½	0	9½				
3	0	20	4	27	1	0	3½	0	2½	0	7	0	5¼	1	1¾	0	10¼				
3	3	18	9	25	4	0	3¾	0	2¾	0	7½	0	5½	1	3	0	11				
3	6	17	6	23	3	0	4	0	3	0	8	0	6	1	4	1	0				
3	9	16	6	21	6	0	4¼	0	3¼	0	8½	0	6½	1	5	1	1				
4	0	15	4	20	4	0	4½	0	3½	0	9	0	6¾	1	6¼	1	1¾				
4	3	14	4	19	1	0	4¾	0	3¾	0	9¾	0	7½	1	7½	1	2½				
4	6	13	9	17	15	0	5	0	3¾	0	10¼	0	7¾	1	8½	1	3½				
4	9	12	12	17	1	0	5½	0	4	0	10¾	0	8	1	9¾	1	4¼				
5	0	12	1	16	6	0	5¾	0	4¼	0	11½	0	8½	1	11	1	5				
5	3	11	9	15	7	0	6	0	4½	1	0	0	9	2	0	1	6				
5	6	11	2	14	10	0	6¼	0	4¾	1	0½	0	9½	2	1	1	7				

TABLE of the Aſſiſe and Price of Bread made of WHEAT.

Price of the buſhel of wheat and baking.		WEIGHT.				PRICE.											
		The penny Loaf.				Quartern Loaf.				Half peck.				Peck Loaf.			
		Wheaten.		Houſeh		Wheaten		Houſeh.		Wheaten		Houſeh.		Wheaten		Houſeh.	
s.	d.	oz.	dr.	oz.	dr.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
5	9	10	8	14	4	0	6½	0	5	1	1¼	0	9¾	2	2½	1	7½
6	0	10	2	13	9	0	7	0	5¼	1	1¾	0	10¼	2	3½	1	8½
6	3	9	11	13	1	0	7¼	0	5½	1	2¼	0	10¾	2	4¾	1	9¾
6	6	9	4	12	10	0	7½	0	5½	1	3	0	11	2	6	1	10
6	9	9	0	12	1	0	7¾	0	5¾	1	3½	0	11½	2	7	1	11
7	0	8	11	11	9	0	8	0	6	1	4	1	0	2	8	2	0
7	3	8	7	11	2	0	8¼	0	6¼	1	4½	1	0½	2	9	2	1
7	6	8	3	10	11	0	8½	0	6½	1	5	1	1	2	10	2	2
7	9	7	14	10	6	0	8¾	0	6¾	1	5½	1	1½	2	11¼	2	2¾
8	0	7	10	10	2	0	9¼	0	6¾	1	6¼	1	1¾	3	0½	2	3¼
8	3	7	5	9	15	0	9½	0	7	1	7	1	2	3	2	2	4
8	6	7	2	9	9	0	9¾	0	7¼	1	7½	1	2½	3	3	2	5
8	9	6	15	9	4	0	10	0	7½	1	8	1	3	3	4	2	6
9	0	6	13	8	15	0	10¼	0	7¾	1	8½	1	3½	3	5	2	7
9	3	6	9	8	12	0	10½	0	8	1	9	1	3¾	3	6¼	2	7¾
9	6	6	7	8	8	0	10¾	0	8¼	1	9¾	1	4¼	3	7¼	2	8¾
9	9	6	4	8	5	0	11	0	8¼	1	10¼	1	4¾	3	8½	2	9½
10	0	6	1	8	2	0	11½	0	8½	1	11	1	5	3	10	2	10
10	3	5	15	7	15	0	11¾	0	8¾	1	11½	1	5½	3	11	2	11
10	6	5	13	7	12	1	0	0	9	2	0	1	6	4	0	3	0
10	9	5	11	7	9	1	0¼	0	9¼	2	0¼	1	6½	4	1	3	1
11	0	5	9	7	5	1	0½	0	9½	2	1	1	7	4	2	3	2
11	3	5	6	7	3	1	0¾	0	9¾	2	1¾	1	7½	4	3½	3	2¾
11	6	5	5	7	2	1	1	0	10	2	2¼	1	7¾	4	4½	3	3½
11	9	5	2	6	15	1	1½	0	10	2	3	1	8	4	5	3	4
12	0	5	1	6	13	1	1¾	0	10¼	2	3½	1	8½	4	7	3	5
12	3	4	15	6	10	1	2	0	10½	2	4	1	9	4	8	3	6
12	6	4	14	6	8	1	2¼	0	10¾	2	4½	1	9½	4	9	3	7½
12	9	4	13	6	5	1	2½	0	11	2	5	1	10	4	10	3	8
13	0	4	11	6	4	1	3	0	11¼	2	5¾	1	10¼	4	11½	3	8½
13	3	4	9	6	3	1	3¼	0	11½	2	6½	1	10½	5	1	3	9
13	6	4	8	6	1	1	3½	0	11½	2	7	1	11	5	2	3	10
13	9	4	7	5	15	1	3¾	0	11¾	2	7¼	1	11½	5	3	3	11
14	0	4	5	5	13	1	4	1	0	2	8	2	0	5	4	4	0
14	3	4	4	5	11	1	4½	1	0¼	2	8½	2	0½	5	5	4	1
14	6	4	3	5	9	1	5	1	0½	2	9	2	1	5	6	4	2

By the preceding table, if the price of wheat is 5s. a buſhel (Wincheſter meaſure) and the allowance of the magiſtrates to the baker, for baking, is 1s. 6d., the weight and price of the ſeveral loaves will be found oppoſite to 6s. 6d. in the firſt column. The weight of loaves of any ſize may be eſtimated from that of the penny loaf by ſimple addition; *e. g.* the ſixpenny loaf weighs ſix times as much, &c.; and the wheaten loaves are three-fourths of the weight of the houſhold loaves; and if the magiſtrates allow any of the white loaves of the price of one penny or twopence, theyare to weigh three-fourths of the weight of the wheaten loaves of the ſame price. The prices of the houſehold loaves are always three-fourths of the prices of the wheaten loaves.

The perſons authoriſed to ſet the aſſiſe weight of bread, when wheat is above the price of 14s. 6d. the higheſt price of a buſhel of wheat, together with the baker's allowance in the table, ſhould obſerve, that the reſpective weights of the ſeveral aſſiſed loaves will decreaſe in the ſame proportion as the prices of the buſhel of wheat, together with the allowance for baking, increaſes; and that ſuch weights may be deduced from the preſent table as in the following examples: 1. Required the weight of the twelve-penny wheaten loaf, when the price of the buſhel and baking is 16s. The weight in the above table oppoſite to 8s. eſtimated in the mode above directed, is 5lb. 11oz. 8dwts. But the price of the buſhel and baking being now twice as much, the weight of the loaf can only be half what it then was, viz. 2lb. 13oz. 12dwts. 2. Required the weight of the twelve-penny wheaten loaf, when the price of a buſhel of wheat and baking is 16s. 3d. The weight, when the price of the buſhel and baking is 16s., is 2lb. 13oz. 12dwts.; and the weight, when the price of the buſhel and baking is 16s. 6d., is 2lb. 11oz. 14dwts., and theſe two added together give 5lb. 9oz. 10dwts., and, therefore, one half the weight at 16s. 3d. is 2lb. 12oz. 13 dwts.

For the price of the peck loaf, and its ſubdiviſions, it ſhould be obſerved, that the price increaſes in the ſame proportion as the price of the buſhel of wheat, together with the allowance for baking, *e. g.* 1. Required the price of the peck loaf wheaten bread, when the price of the buſhel and baking is 16s. The price of ſuch loaf by the table, when the buſhel and baking is 8s. is 3s. 0½d.; conſequently at 16s. it muſt be double or 6s. 1d. 2. Required the price of the peck loaf when that of the buſhel and baking is 16s. 3d. The price when that of the buſhel and baking is 16s. is 6s. 1d.; at 16s. 6d. 6s. 4d.; and adding theſe, we have 12s. 5d. one-half of which, or 6s. 2½d. is the price at 16s. 3d. See 39 and 40 Geo. III. 74.

The aſſiſe is to be ſet in avoirdupois weight; and the prices of grain, meal, or flour, allowed to be made into bread in London, ſhall be determined by the public ſale in the London markets during the whole market, and certified on oath before the court of mayor and aldermen, on ſome certain day in every week, by the meal-weighers or perſons appointed by the ſaid court; and entered in writing, under their hands, in ſome book provided by the city, and kept at the town-clerk's office. On the next day after ſuch price ſhall be certified, the aſſiſe and weight of all ſorts of bread for ſale, and alſo the price, ſhall from time to time be ſet by the ſaid court, or mayor, and remain in force until a new aſſiſe in London ſhall be ſet. As ſoon as it can conveniently be done, the aſſiſe ſo ſet ſhall be made public in the manner directed by the ſaid court. But before any advance or reduction ſhall in any week be made by the ſaid court or mayor in the price of bread, the meal-weighers or perſons duly appointed ſhall return the prices of grain, meal, and flour, in writing, to the common hall of the company of bakers, ſo that the ſaid company may, on the morning of the next day after every ſuch return and entry, and before any aſſiſe be ſet, have an opportunity to offer to the ſaid court or mayor their objections againſt any propoſed advance or reduction. In other cities and towns corporate this buſineſs ſhall be conducted and ſettled by the court of mayor and aldermen, if there be any, or by the mayor, bailiff, or chief magiſtrates, or by two juſtices in ſuch towns and places which have no ſuch mayor, bailiffs, aldermen, or chief magiſtrate. In places within counties at large, two juſtices are authoriſed to ſet the aſſiſe. Bread of different denominations, ſuch as ſix-penny, twelve-penny, and eighteen-penny loaves, and peck, half-peck, and quarter of a peck loaves, ſhall not be allowed to be made or ſold at the ſame time in the ſame place, under a penalty of forfeiting not more than 40s. nor leſs than 20s. at the pleaſure of the magiſtrate, upon conviction of the offender. After the aſſiſe has been ſet, no alteration ſhall be made in it till the price of corn alters 3d. a buſhel. Officers appointed to make returns, and offenders againſt the due execution of this act, ſhall forfeit a ſum not exceeding 5l. nor leſs than 20s.: and dealers in corn refuſing to diſcloſe the real prices of grain, meal, or flour, publicly ſold, or knowingly giving a falſe price, ſhall, on conviction by confeſſion, or the oath of one witneſs, forfeit not more than 10l. nor leſs than 40s. Bakers of bread made of other grain beſides wheat, according to order, are required to conform to the aſſiſe, on pain of forfeiting not more than 5l. nor leſs than 40s.

The ſtatute 36 Geo. III. c. 22. contains regulations for making mixed bread, and enacts that perſons in any place whatſoever, whether any aſſiſe of bread has been ſet or not, may make and ſell peck, half-peck, quartern, and half-quartern loaves, made of the whole produce of wheat, deducting only 5lb. of bran per buſhel; or made of any ſort of wheaten flour mixed with meal, or flour of barley, rye, oats, buck wheat, Indian corn, peaſe, beans, rice, or any other kinds of grain, or potatoes, in ſuch proportions and of ſuch prices as the maker or ſeller ſhall deem reaſonable. Every loaf of ſuch mixed bread ſhall have upon it a mark. It is required by 31 Geo. II. c. 29. § 21. that the ſeveral ſorts of bread made for ſale ſhall be well made, and no alum, or mixture in which alum is an ingredient, or any other ingredient or mixture whatever, (except only the genuine meal or flour, which ought to be put therein, and common ſalt, pure water, eggs, milk, yeaſt, and barm, or ſuch leaven as is allowed by thoſe who ſet the aſſiſe, or by any magiſtrate or juſtice within his juriſdiction,) ſhall be uſed in making any dough or in the preparation of bread, on pain that the offender, (other than a ſervant or journeyman), upon conviction by confeſſion, or the oath of one witneſs, ſhall forfeit not more than 10l. nor leſs than 40s. or be committed to priſon or houſe of correction for any time not exceeding one calendar month, nor leſs than ten days, at the pleaſure of the magiſtrate. A ſervant or journeyman, upon conviction, ſhall forfeit not more than 5l. nor leſs than 20s. or be committed to priſon as aforeſaid. The magiſtrate before whom ſuch offender has been convicted, may apply the money forfeited for cauſing the offender's name, place of abode, and offence, to be publiſhed in ſome newſpaper, printed or publiſhed near the place where the offence ſhall have been committed. The adulteration of meal, or knowingly expoſing it to ſale, incurs a forfeiture of not more than 5l. nor leſs than 40s. If bread ſold, or expoſed for ſale, be deficient in weight according to the aſſiſe, the offender, formerly liable to the pillory, ſhall now forfeit not more than 5s. nor leſs than 1s. for every ounce wanting; and for every defect leſs than an ounce, not more than 2s. 6d. nor leſs than 6d. ſuch bread being complained of, and weighed before a magiſtrate within 24 hours after the ſame ſhall have been baked or expoſed to ſale, within the bills of mortality, or within three days in any other place. It has been obſerved, that bread loſes weight by keeping: ſo Bartholine concludes from ſome experiments that the diminution was nearly 1-4th in ſix months. Bakers are obliged under a penalty, not more than 20s. nor leſs than 5s. to mark their wheaten bread with a large Roman W, and their houſehold bread with an H. No perſon ſhall ſell bread for a greater price than that aſcertained by the aſſiſe, or refuſe to ſell ſuch bread at the ſtipulated price, under a penalty of forfeiting for every ſuch offence not more than 40s. nor leſs than 10s. By 2 and 3 Edw. VI. c. 25. if a baker ſhall conſpire not to ſell bread but at certain prices, every ſuch perſon ſhall forfeit 10l. for the firſt offence; and if not paid within ſix days, he ſhall be impriſoned twenty days, and have only bread and water for his ſuſtenance; for the ſecond offence, 20l. or the pillory; and for the third offence, 40l. or the pillory, and loſs of an ear, and becoming infamous. Bread inferior to wheaten ſhall not be ſold for a higher price than houſehold bread, under a penalty of 20s. By 31 Geo. II. c. 29. and 32 Geo. II. c. 18. magiſtrates may grant warrants for ſearching houſes, in order to examine bread deficient in weight, or unconformable in any reſpect to the ſtatute and aſſiſe, and for ſeizing the ſame; and alſo, upon information given on oath, for ſearching mills and other places, where adulterated meal is concealed, and for ſeizing the ſame. Every miller, baker, &c. who has in his poſſeſſion unlawful ingredients for the purpoſe of adulterating meal or bread, ſhall forfeit not more than 10l. nor leſs than 40s.; and out of the forfeiture may be publiſhed the name of the offender, his place of abode, and his offence in ſome newſpaper, printed or publiſhed in or near the place where the offence was committed. Perſons obſtructing ſuch ſearch and ſeizure ſhall forfeit not more than 5l. nor leſs than 20s.

By a general clauſe in the act 31 Geo. II. c. 29. § 34. all penalties and forfeitures, when recovered, ſhall be paid to the informer; and by 32 Geo. II. c. 18. one moiety of ſuch penalties as are not particularly diſpoſed of ſhall be given to him who ſhall inform and proſecute; and the other moiety, together with all penalties and forfeitures incurred in the weighing, trying, or ſeizure of any bread by any magiſtrate, ſhall be applied, for the better execution of the act, according to the pleaſure of the magiſtrate. Proſecutions under this act are limited within ſeven days after the commiſſion of the offence, by 33 Geo. III. c. 37. The ſtatute 3 Geo. III. c. 11. contains certain regulations and proviſions in caſe no aſſiſe is ſet. By 13 Geo. III. c. 62. a ſtandard wheaten bread was ordered to be made of ſuch flour as is the whole produce of the grain, the bran or hull only excepted, and to be marked SW. This bread is made and ſold, though no aſſiſe be ſet, of the weight and in the proportions following: viz. that every ſtandard wheaten peck loaf ſhall weigh 17lb. 6oz. avoirdupois; every half-peck loaf 8lb. 11oz. and every quartern loaf 4lb. 5½oz.; and every peck loaf, half-peck loaf, and quartern loaf ſhall always be ſold as to price in proportion to each other reſpectively; and that when wheaten and houſehold bread, made as the law directs, ſhall be ſold at the ſame time, together with this ſtandard wheat bread, they be ſold in proportion to each other as follows: viz. that the ſame weight of wheaten bread which coſts 8d. ſhall of this ſtandard wheaten bread coſt 7d. and the ſame weight of houſehold bread ſhall coſt 6d; or 7 ſtandard wheaten aſſiſed loaves ſhall be equal in weight to 8 wheaten aſſiſed loaves, or to 6 houſehold aſſiſed loaves of the ſame price, as nearly as poſſible. The magiſtrates may, when they think proper, fix the aſſiſe of this ſtandard wheaten bread, according to tables calculated for the purpoſe. The bakers and ſellers of it ſhall be liable to all the penalties of the former acts. See the tables 39 and 40 Geo. III. c. 18. and c. 74. Burn's Juſtice, vol. i. and iv.

BREAD, *Indian*, or *Caſſava*. See JATROPHA MANIHOT.

BREAD, *St. John's*. See CERATONIA SILIQUA.

BREAD, *ſwine*, *panis porcinus*, a denomination given to truffles.

BREAD, *ſow's*, a name applied to the herb cyclamen.

BREAD-ROOM, in a ſhip, that which is ſet apart to hold the bread. The boards of the bread-room ſhould be jointed and caulked, and alſo lined with tin plates, for the greater preſervation of the bread. It is alſo proper to warm it well with charcoal for ſeveral days before the bread is put into it, ſince nothing is more injurious to bread than moiſture.

Bread, *fruit-tree*, in Botany. See Artocarpus.

Bread, *nut-tree*. See Brosimum Alicastrum.

BREADALBANE, or Braidalbin, in *Geography*, a diſtrict of Perthſhire, Scotland, including a tract of country meaſuring about 32 miles from eaſt to weſt, and 13 in its broadeſt part from north to ſouth. This mountainous country forms part of the Grampian hills, and is ſuppoſed to have been anciently called Albania; whence the Highlanders ſtill denominate themſelves Albinich; and the duke of York receives his title of Albany from this place. The name Braid-Albainn, in the Gaelic tongue, ſignifies the higheſt part, which correſponds with this portion of country, as ſome rivers that take their riſe here, run partly into the eaſtern and partly into the weſtern oceans. Flax is the principal article of cultivation. Some years back, when premiums were offered for the greateſt crops, from 80 to 120 hogſheads of linſeed were annually ſown; and each peck yielded two ſtones of dreſſed flax. Next to this, oats and potatoes are moſtly cultivated; and from the latter ſome ſtrong ſpirit has been diſtilled, which is found to be cheaper than that made from grain. Bread and ſtarch are alſo made from this root. Corcar, or the lichen omphaloides, an article of commerce, is obtained in abundance from the rocks, and is ſold moſtly to dyers. Pennant's Tour in Scotland, 4to. vol. iii.

BREADTH. See Latitude, Dimension, Area, &c.

Breadth, *Hair's*. See Hair.

Breadth, *Finger's*. See Finger.

Breadth, *Hand's*. See Hand.

Breadth, in *Ship-building*, the breadth of a ſhip at any particular place, as the *extreme breadth*, which is the greateſt breadth, being at the main frame, the *top-timber breadth*, the *breadth at the main or wing tranſom*, &c. The breadth and curvature of all the frames are laid down on the body plan, or plane of projection; thoſe of the fore-body being on the right hand ſide of the middle line, and the frames in the after-body being on the left hand ſide of the ſame line; from whence the frames are transferred to the mould loft. See Body-*plan*, and Ship-*building*.

Breadth-*ſweeps*. Of theſe there are two; the *lower* and *upper*. The centre of the lower breadth-ſweep is in the line that repreſents the height of the extreme breadth of the timber. If there is a part of the timber ſtraight, the centre of the ſweep will be in the lower line. From this centre extend to the point that limits the half breadth of the timber in the ſame line; and with that radius deſcribe a circle downwards, till it comes near the floor ſweep. The centre of the upper breadth-ſweep is in the line that repreſents the extreme upper height of the breadth of the timber; from which a circle muſt be deſcribed to paſs through the point that limits the half-breadth of the timber in the ſame line, and produced upwards at pleaſure to form the top-timber.

Half Breadth *of the Floor*, is the diſtance of the centre of the floor ſweep from the middle line in the body plan at the main frame; which will always be leſs than the diſtance between the point where the ſtraight line, drawn from the ſide of the keel to touch the back of the floor ſweep, is from the middle line. This laſt may be called the true half-breadth of the floor, which in ſharp ſhips will be above the riſing line.

Half-Breadth *Plan*, or *Floor Plan*, or, as it is frequently called, the *horizontal plan*, contains the ſeveral half-breadths of every frame of timbers at different heights; ribbands, water-lines, &c. are alſo deſcribed on this plane.

Height of Breadth *lines*, are two lines named the *upper* and *lower* heights of breadth. Theſe lines are deſcribed on the plane of elevation to determine the height of the broadeſt part of the ſhip at each timber; and being deſcribed in the body plan, limit the height and breadth of each frame at its broadeſt place. One line ſerves for both in the half-breadth plan.

Main half-Breadth, is a ſection of the ſhip at the broadeſt place, perpendicular to the ſheer plan, and repreſents the greateſt breadth at the outſide of every timber.

Top-timber half-Breadth, is a ſection of the ſhip at the height of the top-timber line, perpendicular to the plane of elevation.

Half-Breadth *Staff*, a rod about an inch ſquare, and of any convenient length. Upon one ſide of this ſtaff are ſet off, from one end, the ſeveral half-breadths of all the timbers in the after-body; and thoſe of the fore-body are ſet off upon the other ſide. On the other two ſides are ſet off the ſeveral heights of the ſheer; the after-body on one ſide, and the fore-body on its oppoſite. Two ſides of the ſtaff are marked *half-breadths;* and the two other ſides, *heights of the ſheer*.

BREAK, in *Agriculture*, denotes, in Norfolk, land ploughed or broken up the firſt year after it has lain fallow in the ſheep walks.

In *Architecture*, it denotes a receſs, or giving back of a part behind its ordinary range or projecture. In which ſenſe, they ſay, a break of pediment; a break of entablatures, whereby it ſhrinks, as it were, between the columns, is reputed a fault.

Break, *Cape*, in *Geography*, lies on the eaſt coaſt of Newfoundland, and forms the eaſt point of the entrance into Trinity bay, about 10 leagues ſouth-eaſt from cape Bonaventure.

Break-*Sea Iſland*, lies without the new paſſage or north entrance into Duſky bay, on the weſt coaſt of the ſouthern iſland of New Zealand.

Break-*in*, among *Carpenters*, is when they break a hole in brick-walls with their ripping chiſſel.

Break-*neck*, *Briſe-cou*, in *Building*, a fault in a ſtair-caſe, as when a ſtep is made higher or lower than the reſt, and landing-place too narrow, or the like.

Break-*water*, in *Sea Language*, the hull of an old ſhip or veſſel, ſunk at the entrance of a ſmall harbour, to *break* the force of the waves in their paſſage to the veſſels moored within. Jetties, however, where practicable to be built, are employed for this purpoſe. A break-water is alſo a ſort of a ſmall buoy faſtened to a large one in the water, when the buoy rope of the latter is not long enough to reach from the anchor, lying at the bottom, to the ſurface of the water. The uſe of this break-water is, therefore, to ſhew where the buoy ſwims.

BREAKERS, a name given to thoſe billows that break violently over rocks lying under the ſurface of the ſea. They are diſtinguiſhed both by their appearance and ſound, as they cover that part of the ſea with a perpetual foam, and produce a hoarſe and terrible roaring, very different from what the waves uſually have in a deeper bottom. When a ſhip is unhappily driven among breakers, it is hardly poſſible to ſave her; as every billow that heaves her upward, ſerves to daſh her down with additional force, when it breaks over the rocks or ſands beneath it.

Breakers' *Point*, in *Geography*, is the ſouth-eaſt point of Hope bay, on the north-weſt coaſt of North America. N. lat. 49° 15′. W. long. 126°. 40′.

BREAKING, in *Agriculture*, denotes the ploughing up of grounds, eſpecially ſuch as have lain ſome time fallow.

Breaking *Bulk*, the commencement of the diſcharge of the cargo of a ſhip.

Breaking *ſheer* is applied to a ſhip at anchor, when ſhe is forced by the wind or current from that poſition in which ſhe keeps her anchor moſt free of herſelf, and moſt firm in the ground, ſo as to endanger the tripping of her anchor.

Breaking *up a ſhip*, ſtripping off the planks, and taking her to pieces, when ſhe becomes old and unſerviceable.

Breaking *ground*, in the *Military Art*, the beginning of works for carrying on the ſiege of a place; more eſpecially the beginning to dig trenches, or approaches.

Breaking *the angles of a battalion*, denotes a military evolution, whereby the four angles turn, and make ſo many fronts towards the enemy; ſo that the battalion, which before was only a ſquare, becomes an octangle, and can fire on all ſides. This is otherwiſe called blunting the angles of a battalion; by the French, *emouſſer les angles d'un bataillon*.

Breaking *of meaſure*, in *Fencing*, denotes a moderate retiring, or giving of ground, in order to avoid the adverſary's thruſt. Breaking of meaſure differs much from going back, and loſing or yielding of ground; the latter being reputed a great reproach, the former a mark of judgment and adroitneſs. Some pretend, that a man retiring is obliged to forbear, if his adverſary call him to ſtand.

Breaking *of the ſea*, Breaking *of a wave*, or the like, on a rock, a bank, or the like, are a ſufficient indication to the pilots, that it is not ſafe mooring there.

Divers machines and ſtructures have been contrived for breaking the force of wind, the ſtream of water, and the like.

Breaking is alſo uſed for the taming of animals, or reducing them from a wild to a tractable ſtate.

Breaking *of a horſe to the ſaddle*. See Backing, and Travice. To break a horſe for hunting, is to make him acquire the diſpoſition and habit of running. It is a great fatigue to run horſes full ſpeed before they are broken.

Breaking *herd*, among *Sportſmen*, denotes a deer's quitting the herd, and running by itſelf; or ſingling it out from the herd for chaſe. In which ſenſe, the word ſtands oppoſed to herding. A deer when cloſe purſued, is loth to break herd. When a hart breaks herd, and draws to the thickets and coverts, he is ſaid to harbour or take hold.

Breaking *up a deer*, ſignifies the opening or cutting it up. This term is applied to the act of cutting open the deer after the chaſe, that the perquiſites of blood and garbage may be given to the hounds.

Breaking *of priſon*. See Prison.

Breaking *the legs*, *crucifragium*, was an appendage of crucifixion, uſed no where but among the Jews. See Cross.

Breaking *of hemp*. See Brake.

Breaking *of bread*, is ſometimes uſed in *Eccleſiaſtical Writers*, for celebrating the eucharist.

Breaking *of wine*, among *Vintners*.—Wine is ſaid to *break*, when being left ſome time in the air, in an open glaſs, it changes colour; an indication that it will not keep. This is the uſual method of trying the goodneſs of wine, among the merchants and vintners of Paris.

Breaking is alſo uſed in trade, for a perſon's failing or ſtopping payment. See Bankrupt. Breaking betimes, while there is ſomething left to pay withal, is a mark of honeſty; and, generally, entitles the unhappy perſon to compaſſion and gentler uſage from his creditors, ſaves his credit, and facilitates his retrieving. A late ſenſible writer on trade takes great pains to inculcate this precept, *break early*. Compl. Eng. Tradeſman, vol. i. p. 77, 80, &c.

BREAKNECK, in *Geography*, the name of a hill in America, oppoſite to Butter-hill, at the northern entrance of the high lands, in Hudſon river, about 60 miles N. of New York. The rocks on the ſouthern ſide of the hill are ſo ſituated as to give a tolerable idea of a human face, with a noſe, mouth, and double chin, without a forehead.

BREAKSPEAR, Nicholas, in *Biography*. See Adrian IV.

BREAL, in *Geography*, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Montford; 2 leagues S. E. of Montford.

BREAM, *head* and *bay*, lie on the eaſt ſide of the north iſland of New Zealand; the head is the north point of the bay. S. lat. 35° 46′. It has ſome ſmall iſlands before it called the "Hen and Chickens." The name of this bay is derived from the ſea-bream, with which it abounds.

Bream, in *Ichthyology*. See Brama Cyprinus.

Bream, *to*, in *Sea Language*, to burn off the filth, ſuch as graſs, ooze, ſhells, or ſea-weed, from a ſhip's bottom, that has gathered to it in a voyage, or by lying long in a harbour. This operation is performed by holding kindled furze, faggots, or ſuch materials, to the bottom, ſo that the flame incorporating with the pitch, ſulphur, &c. that had formerly covered it, immediately looſens and throws off whatever filth may have adhered to the planks. After this, the bottom is covered anew with a compoſition of ſulphur, tallow, &c. which not only makes it ſmooth and ſlippery, ſo as to divide the fluid more readily, but alſo poiſons and deſtroys thoſe worms which eat through the planks in the courſe of a voyage. Breaming may be performed, either when the ſhip lies aground after the tide has ebbed from her, or by *docking*, or by *careening*. See theſe articles.

BREAST, *Mamma*, in *Anatomy*. The breaſts, which are two in number in the human ſubject, occupy the anterior and middle part of each ſide of the cheſt, and are therefore ſituated over the pectoralis major muſcle. Each of theſe bodies conſiſts of a gland, to which anatomiſts give the name of mammary, ſurrounded by cellular and adipous ſubſtance, and covered by the common integuments. In men, and in young girls, theſe bodies are ſmall; they enlarge in the female ſubject very conſiderably at the time of puberty, aſſuming an hemiſpherical ſhape, and pretty firm conſiſtence, which, however, is loſt, as the ſubject advances in years.

The ſkin which covers theſe parts is white and ſoft to the touch, except in the middle, where there is a circular portion of a reddiſh brown colour, called the areola From the centre of this projects the nipple, in the form of a cylindrical prominence, with a rounded end, ſimilar in colour to the areola, and covered, like that part, by a more delicate continuation of the ſkin, which is ſomewhat wrinkled and irregular on its ſurface. Both the areola and the nipple are furniſhed with numerous ſebaceous glands, which may be clearly ſeen through the integuments. The fluid which theſe ſecrete, preſerves the parts from the excoriation, which they might otherwiſe ſuffer from ſuckling. Under the integuments, we find a conſiderable quantity of fat and cellular membrane, which ſurrounds and envelopes the mammary gland, connecting it to the ſkin in front, and to the pectoral muſcle behind, and penetrating into its ſubſtance, ſo as to ſeparate the different portions of the gland from each other. It is this that gives to the breaſts of a well-formed female their beautiful external form.

The ſubſtance of the mammary gland preſents a flattiſh body, of a circular form, bearing obſcure marks of a diviſion into ſmaller portions, which cannot be completely ſeparated from each other. It is compoſed of a vaſt congeries of ſmall tubes, convoluted and accumulated on each other, and known by the technical name of tubuli lactiferi, or galactophori. Theſe unite together, gradually forming larger and larger trunks, which approach from all ſides towards the nipple. The trunks become very much contracted at the areola, and in this ſtate paſs through the nipple, connected by a denſe and ſhining cellular ſubſtance, to terminate on its ſurface by open orifices, whoſe ſize is about ſufficient to admit an hog's briſtle. The number of theſe openings is ſaid by Rölpin and Sabatier, to be conſtantly fifteen: the ſmallneſs of ſome of the apertures, and the conſequent difficulty of finding them, have led ſome anatomiſts to ſtate their number as leſs than this. Mekel has found, that when the lactiferous tubes, ariſing from one of the openings on the nipple, were fully diſtended, the mercury would paſs into other ſets of tubes by anaſtomoſing branches. Some anatomiſts, in the number of whom is our countryman Mr. Cruikſhank, have contended for the exiſtence of acini in the mammary gland, which are ſuppoſed to afford origin to the lactiferous tubes. The deſcription juſt given is drawn from ſubjects, who have died while ſuckling, or near the time of parturition: at theſe periods the gland is called into action, its parts are developed, and their ſtructure may be unravelled without difficulty. At other times, the lactiferous veſſels become ſo ſmall as to be imperceptible.

The arterial ſupply of the breaſt comes from the internal mammary, and the thoracic arteries: the veins terminate in the thoracic trunks: the nerves are derived from the dorſal pairs: the lymphatics, which may be injected with facility from the lactiferous tubes, paſs into the axillary glands in their courſe to the thoracic duct on the left ſide of the body, to the right lymphatic trunk on the right ſide. Sometimes, however, according to the reſearches of Mekel, they terminate ſeparately in the ſubclavian veins. On the ſubject of this article, the reader may conſult Halleri Elem. Phyſiol. tom. ii. Sabatier Traité d'Anatomie, tom. ii. Rölpin de Structurâ Mammarum, 4to. 1764.

The mammary glands ſecrete the milk, the nutriment of the young animal: for an account of the properties of this fluid, the reader is referred to the article MILK.

BREAST, *diſeaſes of the*, in *Surgery*. See EXCORIATION, ABSCESS, SCHIRRHUS, and CANCER: theſe are the chief morbid affections to which the breaſts are liable; but they may occur likewiſe in various other parts of the body, and require to be treated on the ſame common principles, allowing for the different ſeat of the diſorder.

BREAST, applied to the correſpondent parts of other animals, is more properly called *udders*, *dugs*, *ubera*, &c.

BREAST alſo denotes that cavity or region of the body by anatomiſts more frequently called THORAX. Though, in propriety, the breaſt is rather reſtrained to the anterior part of the thorax where the ribs meet; called alſo ſternum, and pectus; in Engliſh, popularly, the boſom.

We ſay, a flat, a narrow, a ſtrait breaſt; a broad breaſt, not high, is ranked among the ſigns of longevity. Defluctions on the breaſt and lungs are dangerous.

Coughs, catarrhs, aſthmas, phthiſes, peripneumonies, &c. are alſo diſeaſes of the breaſt. See COUGH, and ASTHMA.

Phyſicians alſo ſpeak of a dropſy of the breaſt, hydrops pectoris. See DROPSY.

Medicines for diſorders of the breaſt are called pectorals. See PECTORAL.

Smiting the breaſt is one of the expreſſions of penitence. In the Romiſh church the prieſt beats his breaſt in rehearſing the general confeſſion at the beginning of maſs.

BREAST-*bone*. See STERNUM.

BREAST *of a chimney*, denotes the fore-part under the mantle or chimney piece, commonly made inclined.

BREAST-*faſt*, *a Sea Term*, a ſort of hawſer, or large rope, employed to confine a ſhip ſide-ways to a wharf or key, or to ſome other ſhip; as the head-faſt confines her forward, and the ſtern-faſt, abaft.

BREAST-*hooks*, in *Ship-building*, are thick pieces of timber, incurvated into the form of knees, and uſed to ſtrengthen the fore-part of the ſhip, where they are placed at different heights directly acroſs the ſtem, ſo as to unite it with the bows on each ſide. The breaſt-hooks are ſtrongly connected to the ſtem and hawſe-pieces by tree-nails, and by bolts, driven from without, through the planks and hawſe-pieces, and the whole thickneſs of the breaſt-hooks, upon whoſe inſide thoſe bolts are fore-locked, or clinched, upon rings. They are uſually about one third thicker; and twice as long as the knees of the decks which they ſupport. The fore-ſide of the breaſt-hooks, which is convex, is formed ſo as to correſpond with the place in which it is ſtationed; that is to ſay, it conforms exactly to the interior figure of that part of the bow where it ought to be fayed; accordingly, the branches, or arms of the breaſt-hooks, make a greater angle, as they are more elevated above the keel, whilſt the lower ones are more incurvated. As it is not neceſſary that the inner, or concave ſide of theſe pieces ſhould retain a regular form, the artificers frequently let them remain as thick as poſſible, to give additional ſupport to the fore-part of the ſhip, where ſhe ſuſtains the whole ſhock of reſiſtance in dividing the fluid, or in plunging down into it. It is evident, that the connexion and ſolidity of the ſhip in this place, will be reinforced in proportion to the ſtrength and extent of the breaſt-hooks, ſo that they may cover a greater number of the head timbers.

BREAST-*pain*, called by the Italians *grandezzo di petto*, is a diſtemper in horſes proceeding from ſuperfluity of blood and other groſs humours, which being diſſolved by ſome extreme and diſorderly heat, reſort downward to the breaſt, and pain them extremely.

The ſigns of the breaſt-pain are, ſtiff, ſtaggering, and weak-going with his fore legs, beſides that he can hardly, if at all, bow his head to the ground.

BREAST-*plate*, in *Antiquity*, a piece of defenſive armour, wherewith to cover the breaſt.

The breaſt-plate is ſaid to be the invention of Jaſon. It was originally made of leather, afterwards of mail, and laſtly, of a brazen or iron-plate. When made of this laſt matter, it is more particularly called *clibanus*, by the moderns *cuiraſs*; when made of braſs, with a Gorgon's head in the middle, it is denominated ÆGIS.

The breaſt plate, called alſo by the Romans *pectorale*, is frequently confounded with the thorax and lorica; from both which it ought to be diſtinguiſhed, as being properly a half-thorax, or half-lorica, covering only the breaſt; whereas the thorax inveſted the body.

As the whole thorax might be a temptation to the ſoldiery to turn their backs, when equally guarded with their breaſt, the thorax was thrown away, and the hemithoracion, or breaſt-plate, only retained. Polyæn. Stratag. lib. vii.

BREAST-*plate*, in *Jewiſh Antiquity*, one of the prieſtly veſtments anciently worn by the high-prieſts. It was a folded piece of the ſame rich embroidered tiſſue with that of the ephod, having ſet upon it twelve precious ſtones in gold, on each of which was engraven the name of one of the tribes. Theſe were ſet in four rows, three in each row; and the whole was faſtened at the four corners; thoſe at the top to each ſhoulder-piece by a golden hook or ring, at the end of a wreathed chain; and thoſe below to the girdle of the ephod, by two blue ſtrings or ribbands, which had likewiſe two rings and hooks; ſo that the whole might be tied faſt to the garment, without danger of falling off; for they were never to be ſevered. The Jews ſay, that if the high prieſt did, at any time, either through inadvertency, or wilfully, put on one without the other, he was to be puniſhed; hence this ornament was called the *memorial,* to put him in mind how dear thoſe tribes ought to be in his eſtimation, whoſe names he wore over his breaſt. This is alſo called the breaſt-plate of judgment, becauſe it had the divine oracle faſtened to it. Thus, however, moſt interpreters have underſtood the command of God to Moſes of adjoining the urim and thummim to the breaſt-plate. The ſtones of the breaſt-plate were divided from one another by the golden partitions into which they were ſet, and were ranged in the following order, to which the Hebrew names are added, together with the tribe that was engraven on each of them:

1.	Odem.	Sardius.	Reuben.
2.	Phiterah.	Topaz.	Simeon.
3.	Barketh.	Carbuncle.	Levi.
4.	Nophek.	Emerald.	Judah.
5.	Saphur.	Sapphire.	Dan.
6.	Jahalom.	Diamond.	Naphtali.
7.	Leſhem.	Ligure.	Gad.
8.	Shebo.	Agate.	Aſher.
9.	Achlamah.	Amethyſt.	Iſſachar.
10.	Tarſhiſh.	Beryl.	Zebulun.
11.	Shohem.	Onyx.	Joſeph.
12.	Yaſhphe.	Jaſper.	Benjamin.

Breast-*plate,* in the *Manege,* denotes a leathern ſtrap running from one ſide of the ſaddle, croſs the horſe's breaſt, to the other; intended to keep the ſaddle from ſlipping backwards in mounting up riſing-grounds. It is otherwiſe called *tee;* ſometimes the *poitrail.*

Breast-*plate,* among *Artificers,* denotes a drill-plate, againſt which to ſet the blunt end of the drill.

Breast-*plough,* in *Agriculture,* a ſmall plough ſo conſtructed, that a man may puſh it before him. It conſiſts of a cutting-iron about eight or nine inches long, with one of its ſides turned up to cut the turf, which is fixed to a pole about five or ſix feet long, forked at the upper end, with a croſs handle. It is uſed in the operation called *burn-baking.*

Breast-*rail,* in *Sea-Language,* the upper rail of the balcony, or of the breaſt-work on the quarter-deck.

Breasts *of a ſaddle,* are part of the bow, being the two ſides of it down from the arch or upper part.

Breast-*work,* in the *Military Art,* is an elevation thrown up around a fortified place or poſt, to conceal or protect the garriſon, and which is at the ſame time ſo ſtrong that the enemy's ſhot cannot pierce through it.

The terms *breaſt-work* and *parapet* are frequently uſed indiſcriminately; but the former is more applicable in a general ſenſe, a parapet implying more immediately that breaſt-work which is raiſed upon the rampart of a fortified town. See Parapet.

A breaſt-work is uſually formed ſimply of earth, not only becauſe it may be procured with the greateſt eaſe, and with the leaſt expence, but alſo becauſe it is liable to fewer objections and difficulties than ſuch as occur in the uſe of other materials; for if the breaſt-work was made of ſtone or wood, the garriſon would be liable to have more men killed and wounded by the ſplinters ſtruck off by the enemy, than by his ſhot. The ſtiffer the earth, the better it is for the formation of a breaſt-work; a ſtiff ſoil adhering well together, and deſtroying the force of the balls which penetrate it better than any other. A ſoil of loam or clay is, therefore, to be preferred to all other kinds of earth. In rocky or marſhy ground, a covering may be formed of wool-ſacks, dung, bruſh-wood bound together, or faſcines.

With reſpect to the height of a breaſt-work, it ſhould be ſuch that a ſoldier, ſtanding behind it, cannot be ſeen by the enemy. If, therefore, the garriſon and the enemy are on the ſame level, the height of ſix feet is ſufficient to cover the defenders; but if the enemy is on higher ground ſomething muſt be added; and, in this caſe, the principles of geometry will eaſily determine how much it muſt be augmented in each particular inſtance, according to the diſtance of the enemy from the breaſt-work, the ſpace behind it in which the garriſon is to be covered, and the elevation of the ground on which the enemy is poſted. If the garriſon ſtands on higher ground, the breaſt-work need not be ſix feet high, and the more the garriſon is elevated, the lower the work may be. It is here alſo eaſy to determine the neceſſary height, by only conſidering the intention of the breaſt-work, which is at all times to ſhelter the ſoldiers placed behind it from the fire of the enemy's cannon and ſmall arms. A breaſt-work ſhould be ſo ſtrong that the enemy's ſhot cannot entirely penetrate it. To reſiſt the moſt powerful attack of field artillery, the thickneſs ſhould be at leaſt 18 feet of good ſoil, and from 22 to 24 feet in bad. This is the caſe in actual fortification; but in works caſt up in the open field, often in the greateſt haſte, and where we expect to be aſſaulted only by field pieces, a thickneſs from 10 to 12 feet is perfectly ſufficient. If it is intended only to hold out againſt muſquetry; or if the work is erected only for the purpoſe of concealing the troops behind it, from three to ſix feet is an ample thickneſs.

If the breaſt-work is formed of earth, each ſide muſt make an acute angle with the horizontal baſe of the work, otherwiſe it would ſoon fall down. Theſe oblique ſurfaces are called the interior and exterior *ſlope* or *talus* of the breaſt-work. As good earth will ſtand firmer than bad, the baſe of the ſlope need not be ſo large in a clayey as in a ſandy ſoil. Experience ſhews that good earth will ſtand when the baſe of the ſlope is only equal to half the height; but that bad earth requires a ſlope equal to the whole height; therefore, when other reaſons do not render it neceſſary to vary from this rule, it may be looked upon for earth-work in general, that if the ſoil is very good it ſhould be equal to half the height; if middling to two thirds; and if very bad, the baſe muſt be equal to the height. The interior ſlope ſhould be kept as ſmall as poſſible, for the convenience of the troops poſted behind the breaſt-work. It is, therefore, uſual to make the baſe only one-ſixth of the height; and to retain the interior ſide from falling, a revêtement of faſcines, hurdles, ſods, or even a ſtone wall, may be made uſe of. Of theſe, faſcines and hurdles, from the eaſe with which they are procured and conſtructed, are the moſt advantageous in the open field. In a permanent fortreſs, the inner ſide of the parapet ſhould be formed of ſods. As for revêtements of boards or ſtone, they ſhould never be uſed in the field, becauſe the former become ſoon rotten, and the ſplinters of the latter might greatly annoy the garriſon. The exterior ſlope, being more expoſed to the enemy's fire, is ſooner liable to fall, and requires therefore a larger baſe; but the ſmaller this is kept, the more difficult it is for an enemy to climb. For this reaſon, it ſhould always be as narrow as the nature of the ſoil will allow. If it has a revêtement, the rules given for the interior ſlope apply equally to this, except that boards and ſtone are not here ſo dangerous to the garriſon.

That the troops thus protected by the breaſt-work may be enabled to fire on the enemy without obſtruction, an elevation of earth, called a *banquette*, is made immediately behind it, which the ſoldiers mount when they are to fire. This ſhould be raiſed until the height of the breaſt-work above is about four feet two inches, that the ſoldier ſtanding upon it may make uſe of his arms properly, and fire conveniently over. If the height of the breaſt-work is ſix feet, that of the banquette will accordingly be one foot two inches; and if the breaſt-work is higher, the banquette muſt alſo be raiſed. To render the aſcent perfectly eaſy, its ſlope ſhould be very broad, at leaſt equal to, or even double its height. The breadth of the banquette ſhould be three feet or more, according to the number of ranks in which the men are drawn up. The upper ſurface, ſummit, or crown of the breaſt-work, muſt be made with a declivity towards the country, otherwiſe when the enemy is advanced within a ſhort diſtance, he cannot be hit from behind the work. The difference in height between the ſlopes depends on the thickneſs of the work. If this is 24 feet, the exterior talus may be two feet lower than the inner; if the breaſt-work is weaker, the difference muſt be proportionably leſſened. If on an eminence, it will be neceſſary to give the ſuperior ſlope a greater declivity. Its proper inclination may be eaſily determined, only taking care that the fire regulated by it is not confined to a ſingle point on the ground, but extends as much as poſſible. When the breaſt-work has no exterior ſlope, but the ſummit is continued outwards until it meets the ſurface of the ground, it is a perfect *glacis*. In this caſe the baſe muſt be much broader than that of a common breaſt-work; otherwiſe the work would be too weak, and the ſlope ſo ſteep, that the fire acting in that direction inſtead of grazing, would bury itſelf in the ground. Two advantages are derived from a glacis; every point in front of it is expoſed to the ſmall arms of the garriſon, which is not the caſe in any other kind of breaſt-work; and it cannot be deſtroyed by the enemy's ſhot, which only ſtrikes into it, the looſe earth remaining in its proper place; but it is attended with this diſadvantage, that it may be mounted without difficulty.

When cannon are planted behind a breaſt-work, they may either fire *en barbette*, or through embraſures. In the former caſe, inſtead of a banquette, an elevation of earth is formed ſufficiently large to contain guns mounted on their carriages, and of ſuch a height that their muzzles may reach above the ſummit. This elevation muſt be carried to within two and a half, or three feet from the top of the work, and ſufficiently broad to afford convenient room for the gun and men attached to it. About ten or twelve feet are allowed for each piece of cannon. The length ſhould be from twelve to eighteen feet, according to the gun, that ſpace may be left behind to prevent its running down in the recoil. An eaſy ſlope, called a *ramp*, is made to every battery of this nature, that the guns may be run up without difficulty. This method, however, is only ſafe when the enemy cannot bring artillery againſt the breaſt-work, or when poſted on an eminence; and even then we ſhould endeavour to cover the artillery-men with gabions or ſand-bags placed upon the work, leaving an opening of 1½ or 2 feet between them for the mouth of the cannon. If two or more rows of gabions are placed one before the other, the opening muſt increaſe in width towards the front, that we may be enabled to point the gun to either ſide, as well as directly forwards. When the guns, and men who ſerve them, are much expoſed to the enemy's fire, *embraſures* are to be cut for them. When ſeveral pieces of canonn are placed behind a work, their diſtance aſunder ſhould be from 12 to 20 feet. The piece of the breaſt-work which remains ſtanding between every two is called a *merlon*. As it is to be expected that the enemy will direct his principal fire againſt the batteries, the merlons ought to be very ſtrong, and conſtructed with attention; and as muſquetry are not uſed behind them, they may, for the better ſecurity of the gunners, be made eight or nine feet high.

To procure the earth for the formation of the breaſt-work, a ditch is made on the outſide of it, by which the enemy has an additional obſtacle to overcome in his attempts to approach. In ſome caſes the ditch is behind the work; as, for example, on a very ſteep hill, where a foſſé in front would not render the enemy's endeavours to climb it more difficult, and it is more convenient to make uſe of the earth within the breaſt-work. The ditch is made ſloping on both ſides. The inner ſlope is called the *ſcarp*, and the outer the *counterſcarp*. The width of their baſes is determined by the nature of the ſoil; but to give the enemy all poſſible trouble in getting in and out of the ditch, both ſlopes ſhould be as ſteep as the tenacity of the ground will allow. If the ſcarp forms one continued ſurface with the exterior ſlope of the breaſt-work, the enemy has the greateſt difficulty in gaining the ſummit; but as the ſcarp in this caſe ſuſtains too great preſſure, it would ſoon give way, and a conſiderable part of the work with it. Even ſhould the ſcarp ſtand firm, the earth muſt conſtantly fall from the breaſt-work into the ditch, and fill it up to our great diſadvantage. To prevent this, the breaſt-work is thrown up at a ſmall diſtance from the edge of the ditch, thereby leaving a free paſſage between them, called a *berme*. This certainly facilitates the enemy's mounting the breaſt-work; but to diminiſh this diſadvantage, it ſhould be made as narrow as poſſible. The ſize of the ditch is regulated by that of the breaſt-work. The requiſite quantity of earth may be procured equally, whether the ditch is wide and ſhallow, narrow or deep; but the removing it is eaſier by the latter mode, and the enemy will alſo have greater difficulty in croſſing the ditch. In low ground, however, this cannot always be done; and the ditch muſt at all times be ſufficiently broad not to be leaped acroſs. It is uſually 10 or 12 feet wide, and, wherever the ſituation allows, at leaſt ſix feet deep; but if thoſe dimenſions will not furniſh the neceſſary quantity of earth, an augmentation muſt be made either of the width or depth, and ſometimes of both.

A breaſt-work, conſtructed according to the foregoing rules, covers our garriſon againſt the fire of an enemy, and enables us to fire on him with tolerable ſecurity during his march towards it. Notwithſtanding this, if he is reſolute, and not to be deterred by the loſs of a few men, and as there is no particular difficulty in ſurmounting the ditch or breaſt-work, we have ultimately no ſuperiority over him, and muſt therefore have recourſe to other obſtacles to impede his progreſs. Theſe are natural and artificial. Certain natural obſtacles render the acceſs to a place extremely difficult; ſuch as when the breaſt-work is behind a river, canal, or moraſs, too deep for the enemy to wade through; or when it is ſituated in rocky ground, or on a high and ſteep hill which cannot well be climbed by a body of men in any regular order. Here there is no abſolute neceſſity for a ditch; and provided the breaſt-work covers us from the enemy's fire, it may be conſidered as perfect. Artificial obſtacles are, 1. *Paliſades*, which may either be fixed in the open field in front of the ditch, or in the ditch itſelf, ſometimes in two rows, or laſtly upon the banquette, where they occaſion exceſſive inconvenience to the enemy, and afford eſſential protection to the garriſon. 2. *Fraiſes*, buried in the exterior ſlope of the breaſt-work, their points inclining a little downwards. Where there is alſo a row of paliſades upon the banquette, theſe occaſion much obſtruction to the enemy in his endeavours to mount. 3. *Chevaux de friſe*, planted along the middle of the ditch, where they render the paſſage extremely difficult, eſpecially if they ſtand behind a row of paliſades. 4. An *abbatis* of trees cut down and arranged on the outſide of the ditch, along the whole front of the work. When the branches are well intermingled, and the trunks buried obliquely in the earth, or faſtened down by ſtrong pickets, they cannot be removed without great difficulty. The abbatis ſhould lie under the fire of the breaſt-work, and therefore ought not to be more diſtant from it than 200 or 250 yards. 5. *Trous de loup* placed chequerwiſe in front of the work, about 16 or 20 feet from the counterſcarp. Three rows of them preſent at all times a formidable obſtacle, as they cannot be paſſed except by each man ſingly, which cauſes the enemy to remain a long time expoſed to the fire from the breaſt-work, and to form under it at a great hazard. 6. *Crows' feet* ſcattered along the bottom of the ditch, or in the ground in front of it; or where they are wanting, a number of ſtakes, capped and pointed with iron, may be driven into the ground. 7. *An advanced ditch* about 30 yards in front of the firſt. This, if filled with water, or enfiladed from the breaſt-work, preſents a conſiderable obſtacle; but, otherwiſe, only affords the enemy a place of ſhelter, where he may reſt ſome time in ſecurity, and from thence make the remainder of his way to the work in great haſte, ſo that it becomes a detriment inſtead of an advantage. 8. *An artificial inundation* of the country in front of the work, effected by means of dams. This, if five or ſix feet deep, and properly under the fire of the garriſon, is an amazing and obvious advantage; but the work is ſo laborious, and requires ſuch a combination of circumſtances to render it effectual, that it is rarely executed in the field. 9. *Fougaſſes*, or *ſmall mines*, placed about eight or twelve yards from the ditch, and ſprung when the enemy is marching over them towards the breaſt-work. Theſe occaſion great diſorder; and as ſoldiers have a great dread of mines, and anxiouſly avoid an attack upon any ſpot they conceive undermined, are an excellent ſecurity againſt the attacks of a ſuperior enemy.

Previous to the elevation of the breaſt-work its entire plan muſt be traced or marked out upon the ground, in ſuch a manner that the workmen may afterwards be enabled to calculate the thickneſs of the work and breadth of the foſſe. In computing the length of the breaſt-work, two feet are allowed for each file of men; and as troops are uſually formed two deep for its defence, the length will be equal to the number of men: ten feet are allowed for a ſmall gun, and fourteen or ſixteen for a larger. Thus the length of a breaſt-work for 250 men and four field-pieces ſhould be 290 feet. In excavating the ditch, three workmen are allowed to every eight feet in length; and when in a clayey or gravelly ſoil, to every three men with ſhovels, one with a pick-axe ſhould be reckoned, to looſen the ground. The breaſt-work itſelf, and every thing immediately belonging to it, ſhould be erected entirely by the troops. A work with a revêtement of ſods may in general be completed in a day, provided there is a ſufficient number of workmen. But if it is to be formed with faſcines, or paliſaded, it will require two days; and if there are likewiſe to be fraiſes, fougaſſes, trous de loup, &c. three may not be ſufficient. Under the articles Rampart, Fosse, Revetement, Fascines, Fougasses, Palisades, &c. the reader will find the conſtruction of the different parts of a breaſt-work more fully explained.

In *Plate* IV. *Fortification, fig.* 1. *a*, *b*, *c*, is the banquette; *c*, *d*, the interior ſlope or talus; *d*, *e*, the ſummit of the breaſt-work; *e*, *f*, the exterior ſlope or talus; *f*, *g*, the berme; *g*, *h*, the ſcarp; *i*, the foſſe; *k*, *l*, the counterſcarp; *l*, *m*, the glacis.

Fig. 2. is a breaſt-work fraiſed and paliſaded, ſeen in profile; *a*, is a row of paliſades planted upon the banquette; *b*, another of fraiſes, buried in the exterior talus of the breaſt-work; *c*, chevaux de friſe in the middle of the ditch behind *d*, a row of paliſades, fixed at the foot of the counterſcarp; *e*, trous de loup; *f*, abbatis of trees, ſeen in profile.

Fig. 3. is a plan of the breaſt-work; *a*, is the ſlope of the banquette; *b*, banquette; *c*, interior talus; *d*, breaſt-work; *e*, exterior talus; *f*, berme; *g*, ſcarp; *h*, foſſe; *i*, counterſcarp; *k*, trous de loup in three rows; *l*, abbatis.

Breast-*work*, a *Sea-term*, a ſet of framing compoſed of ſtaunchions and rails, with moulding, and ſometimes ſculpture. It terminates the quarter-deck and poop at the foremoſt end and the after-end of the forecaſtle.

BREATH, the wind or air which is received and expelled by the mouth and noſtrils, in the act of reſpiration. In which ſenſe, the word amounts to the ſame with the Greek πνευμα, and Latin *ſpiritus*.

A ſtinking breath is one of the ſymptoms uſually preceding the acceſs of an intermittent fever. In ſome perſons, a ſtinking breath is an indication of the menſes being at hand. It is diſputed among the civilians, whether a ſtinking breath, called *ſcabro*, owing to rotten teeth or gums, ſhould be reputed a diſeaſe. Calvin. Lex. Jur.

Breath is more particularly uſed to denote a ſtrength of lungs, whereby a man is enabled to hold out without taking wind ſo often. In this ſenſe, we ſay, a long, a ſhort breath. The ordinary term of holding the breath does not exceed one third of a minute. Bacon, Hiſt. of Life and Death. Ap. Works, tom. ii. p. 176.

For the pearl-fiſhery they chooſe ſlaves who have the beſt breath, or can continue the longeſt under water without fetching their breath. Pechlin has a diſſertation expreſs on living long without breathing. J. Nic. Pechlin De Aeris & Alimenti Defectu, & Vita ſub Aquis diuturna, Meditatio ad Joel Langelot, 1676. The ancients were very watchful over the laſt breath of dying perſons; which the neareſt relations, as the mother, father, brother, or the like, received in their mouths. Pitiſc. Lex. Antiq. voc. *Spiritus*.

Breath is alſo ſometimes extended to the odorous effluvia of plants, and even exhalations of minerals.

BREATHING. See Respiration.

Fighting a cock to *breathe* him, is called Sparring.

To *breathe* a running horſe, and bring him to his wind, they gave him a Heat.

Breathing, *exſufflatio*, a ceremony in Baptism.

Breathing, *ſhort*. See Asthma.

Breathing, *difficulty of*. See Dyspnoea.

BREAUTE', in *Geography*, a town of France, in the department of the Lower Seine, and chief place of a canton in the diſtrict of Le Havre, 3½ leagues N.E. of Montivilliers.

BREBES, Brebers, or Berberes, a denomination that diſtinguiſhes an ancient tribe of Africans, who are ſettled in and about the greater and leſſer Atlas, and who inhabit different parts of Algiers, Barbary, and Morocco. Some ſuppoſe that they are deſcended from the ancient Sabæans, who migrated hither from Arabia Felix, under the conduct of one of their princes; others believe them to be ſome of the Canaanites, whom Joſhua drove out of Paleſtine. But their origin is uncertain. It is probable, however, that they were very ancient inhabitants of the country, and that they were compelled by the Arabs or Saracens, who overran the eaſtern parts of Africa, about the middle of the ſeventh century,

tury, to ſeek a ſafe retreat among the vaſt ridges of almoſt inacceſſible mountains which extend through ſeveral parts of this immenſe country. Whatever be their origin, they are diſperſed over Barbary, to which they are ſuppoſed to have given its name (ſee Barbary), and divided into a multitude of tribes, under their reſpective chiefs; moſt of them inhabit the mountainous parts; ſome of them range from place to place, and live in tents or portable huts, others, in ſcattered villages, avoiding, generally, all intermixture with other nations. Theſe are reckoned the richeſt of all the various inhabitants of the country; and they carry on a much larger traffic of cattle, hides, wax, honey, iron, and other commodities; they have likewiſe ſome artificers in iron, and weavers. The Brebes and the Moors form the two principal claſſes, comprehending the different tribes that people the empire of Morocco. The Brebes, as well as the Moors, adopted, without doubt, the Mahometan religion, analogous as it was to their manners and prevalent cuſtoms, on the firſt invaſion of the Arabs; but they are ignorant, and pay little regard to any of the precepts of their religion, except to that which inſpires them with a hatred for others of a different profeſſion. Mahometaniſm, however, has not effaced the ancient habits and prejudices of theſe people; for they eat ſwine's fleſh, and, in thoſe places which have vineyards, drink wine; alleging, as an apology, that it is of their own manufacture. In the ſouthern parts of mount Atlas, they preſerve it in earthen jars, and in barrels made of the trunks of hollow trees, the butt-ends of which they ſpread over with pitch, thus keeping it in caverns, and even in water. In the province of Rif, toward the north, they give it a ſlight boiling, which deprives it of its fumes, and makes it leſs intoxicating; and, perhaps, they alſo think, that it is thus rendered congenial to the ſpirit of the Koran. Bred in their mountains, the Brebes maintain their reſentment againſt the Moors, whom, confounding with the Arabs, they regard as uſurpers. In theſe aſylums they contract a ferocity of character and ſtrength of body, which render them more proper for war and labour than the Moors of the plain generally are; and the independence they profeſs imparts more of character to their countenance, which is viſible to thoſe who reſide long among theſe nations. Although they are ſubject to the emperors of Morocco by religious prejudices, they ſet aſide his authority whenever they think proper; and intrenched in their mountains, it is difficult to attack and vanquiſh them. The Brebes have a language of their own; and they never marry but among one another. They have tribes or caſiles among them, which are exceedingly powerful, as to both their number and courage. Such are thoſe of Gomera on the borders of Rif, of Gayrſan towards Fez, of Timoor extending along mount Atlas from Mequinez to Tedla, of Shavoya from Tedla to Duquella, and of Miſhboya from Morocco to the ſouth. The emperor of Morocco retains the children of the chiefs of theſe tribes at court as hoſtages for their fidelity. The Brebes have no diſtinction of dreſs; they are always clothed in woollen like the Moors; and, though they inhabit the mountains, ſeldom wear caps. Theſe mountaineers, as well as their wives, have very fine teeth, and exhibit ſigns of vigour, which diſtinguiſh them from the other tribes. They commonly hunt lions and tigers; and the mothers have a cuſtom of decorating their children with a tiger's claw, or the remnant of a lion's hide on the head, thinking that they thus acquire ſtrength and courage. Similar ſuperſtition, without doubt, induces young wives to give their huſbands the ſame ſort of amulets. The Brebes and the Shellu, having a language common to themſelves, and unknown to the Moors, muſt both have had the ſame origin, notwithſtanding the difference that ſubſiſts in their reſpective modes of life. The Shellu live on the frontiers of the empire towards the ſouth; their population is by no means ſo great as that of the Brebes, nor are they ſo ferocious; they do not marry with other tribes; and, though they practiſe many ſuperſtitious rites, they are faithful obſervers of their religion. The Brebes count the days of the week in the ſame manner with the Moors, and both of them employ Arabic words. The Shellu enumerate the days after the ſame method, but in their own language. Both the Brebes and Shellu denote the months of the year like the Moors and the Arabs, and date from the ſame æra, or the year of the Hegira. The Koran, and books of prayer of the Brebes and Shellu, are in Arabic; and ſo are their acts and title-deeds, which are written by their Talbes, or learned men. Chenier's Morocco, vol. i.

BREBEUF, George de, in *Biography*, a French poet, was born at Torigny, in the Lower Normandy, in 1618, and ſtudied polite literature at Caen and Paris. During his reſidence at Rouen, where he lived ſeveral years, he publiſhed, in 1656, a parody on the 7th book of the Æneid, and the firſt book of Lucan traveſtied, which latter work was intended as a ſatire againſt the titled vanity of great lords, and the ſervile baſeneſs of their flatterers. He afterwards laid the foundation of his celebrity by a tranſlation of Lucan's Pharſalia, which firſt appeared in 1658. Although this performance was cenſured on account of its dazzling and hyperbolical ſentiments, and inflated language, and of its conſequent tendency to corrupt the taſte of young perſons, it poſſeſſed the attractions of a rich ſtyle and ſonorous verſification, and became faſhionable even at court, where cardinal Mazarin excited the hopes of the author by various promiſes, which his death prevented from being fulfilled. Diſappointed in his expectations from other patrons, he retired to Venoix near Caen, where he died in 1661. His character was modeſt and gentle; and the laſt years of his life were ſpent in pious exerciſes, of which we have a ſpecimen in his "Entretiens Solitaires," a collection of religious poems, inferior in merit to his other performances. A collection of his poſthumous works was publiſhed in two volumes, containing, among other pieces, 152 epigrams, written in conſequence of a wager on the ſingle ſubject of a lady's painting. He was likewiſe the author of "Poetical Eulogies," and a "Defence of the Romiſh church." Nouv. Dict. Hiſt.

BREBIETTE, Peter, a painter and engraver, who flouriſhed in 1625, was born at Monte upon the Seine, in France, and acquired ſome eminence as a painter; but as an engraver he is well known. His etchings, which are ſpirited, evince genius, and great fertility of invention. His compoſitions abound with figures, which, though not correctly drawn, are well grouped, and executed in a maſterly manner. Among others are the following: "St. George's Martyrdom," from Paulo Veroneſe; "Paradiſe," from old Palma; "A holy family, with St. John, whoſe foot is upon the cradle," from Raphael; the "Virgin kneeling by the ſide of Chriſt," attended by two angels, from a deſign of his own; the "Battle of the Lapithæ," and the "Death of the Children of Niobe," from his own deſigns." Strutt.

BREBINCE, or Bourbince, in *Geography*, a river of France, in the department of the Saone and Loire, which iſſues from the lake of Longpendu, in the diſtrict of Montcenis, and joining the Arroux, diſcharges itſelf into the Loire, near Digoin.

BRECCA, from the Fr. *breche*, in ſome ancient deeds, is uſed to denote a breach or decay. See Breach.

BRECCIA, Brêche. The term breccia was invented by the Italian ſtatuaries and builders, to denominate thoſe varieties of marble which are compoſed of angular fragments cemented together by calcareous ſpar, or any other natural calcareous cement of a different colour from the fragments. Some French mineralogiſts have adopted the word, but have conſiderably extended its meaning. By brèche they underſtand any mineral aggregate compoſed of angular fragments, cemented together into a compact maſs, and divide it into ſub-ſpecies from the nature of the fragments; hence they have calcareous breccia, ſiliceous, argillaceous, magneſian, &c. The brèche, therefore, of the French differs from porphyry in the compacted pieces not being cryſtals, but merely caſual fragments, and from pandingues (a term borrowed from our pudding-ſtone), in the pieces being angular inſtead of rounded.

BRECEY, in *Geography*, a town of France, in the department of La Manche or the Channel, and chief place of a canton in the diſtrict of Avranches. The town contains 2097, and the canton 9061 inhabitants. The territory includes 137½ kiliometres and 17 communes.

BRECHEN, LOWER, a ſmall town of Germany, in the circle of the Upper Rhine, and electorate of Treves, ſurrounded with walls, and made a town in 1369: 16 miles W.S.W. of Wetzlar, and 78 E.N.E. of Treves.

BRECHIN, an ancient and large town of Forfarſhire, Scotland, is ſeated on the declivity of a hill, and conſiſts of one large, two ſmaller ſtreets, with a detached row of houſes at the foot of the hill. This royal burgh, in conjunction with four others, ſends one member to parliament. It was formerly a rich biſhopric, founded by David I. about the year 1150, and at the reformation its revenues in money and kind amounted to 700l. a year. The Culdees had a convent-houſe, whoſe abbot witneſſed the grant made by king David to his new abbey at Dumfermline. Some ruins of this houſe ſtill remain, in a place called the College Wynde. An hoſpital was founded here by William de Brechin in 1256, of which ſome fine ruins were ſtanding in the time of Mr. Pennant. Here was alſo a cathedral church, which has ſuffered much dilapidation, but its ſouthern aiſle is converted into the pariſh church. At its north-weſtern angle is a handſome ſquare tower with a ſhort ſteeple, and near the ſouthern-ſide is a ſingular round-tower. This ancient ſtructure correſponds with many ſimilar buildings in Ireland; and it is remarked by antiquaries that they are peculiar to that iſland and Scotland, though only two remain in the latter country. Their origin and appropriation have never been ſatisfactorily accounted for, though many ingenious diſſertations have been written on them by different learned antiquaries. The height of this at Brechin, from the ground to the roof, is eighty feet; the inner diameter, near the bottom, eight feet; and the thickneſs of the walls ſeven feet two inches. At the top its diameter is ſeven feet eight inches, and its circumference forty-eight feet. The top has been covered in, and terminated with a ſmall ſpire, which has four windows. Near the top of the tower are alſo four original windows, and towards its bottom are two arched receſſes, ornamented with religious ſculptures; among which are the Crucifixion, with figures of the virgin Mary, St. John, &c. See TOWER, *round*. Archæologia, vol. ii. 83. Ledwich's Antiquities of Ireland.

Brechin had formerly its baronial caſtle, which was built on an eminence a little ſouth of the town. It underwent a long ſiege in the year 1303, when it was gallantly defended againſt the Engliſh under Edward III. by its brave governor ſir Thomas Maule, who, after twenty days reſiſtance, was ſlain by a ſtone caſt from an engine, and the garriſon immediately ſurrendered. This town is alſo remarkable for a battle fought here in the great rebellion in 1452.

The trade of this place conſiſts principally in linen and yarn, which gives employ to many of the poor women. Here is alſo a bleachfield, and a conſiderable tannery. Brechin is 64 miles N.E. from Edinburgh. Pennant's Tour in Scotland, vol. iii.

BRECHT, a town of the eaſtern part of Brabant, now the French department of the Deux Nethes, and chief place of a canton, in the diſtrict of Anvers or Antwerp. The town contains 3428, and the canton 8800 inhabitants; the territory comprehends 257½ kiliometres, and 7 communes.

BRECKBERG, or BERKHEYDEN, JOB, in *Biography*, a painter of landſcapes, converſations, and portraits, was born at Haerlem in 1637, according to Houbraken, but, according to Deſcamps, in 1643, and ſtudied after nature on the borders of the Rhine, where he ſketched thoſe views which he propoſed to introduce into his landſcapes. Having made himſelf a competent maſter in this ſtyle, he ſtudied and practiſed the painting of figures, taking his models from nature. His ſubjects, however, were of the loweſt kind, ſuch as boors, huſbandmen, ſhepherds, and inn-keepers, introduced into his landſcapes, and repreſented alſo at their feaſts, dances, or converſations, which he compoſed in the manner of David Teniers. His pictures were well handled, and agreeably coloured; and ſome of them were much eſteemed. Ambitious of viſiting the court of the elector palatine, who had been repreſented to him as a magnificent patron of perſons of his profeſſion, he accompanied his brother Gerrard thither; but being at a loſs for a proper introduction, he and his brother finiſhed two pictures, in which they painted the portraits of the elector, and of his principal attendants, which were ſtriking reſemblances, as they had obſerved them in the chace; and they then prevailed with an officer of the houſehold to place them in a gallery, through which his highneſs always paſſed on his return from hunting. The ſtratagem ſucceeded; as the prince obſerved them with ſurpriſe and ſatisfaction; and the artiſts were ordered to be brought to court, where they were honourably received, paid liberally for their works, and preſented, among other donations, with two medals of gold. Job died in 1698. Pilkington.

BRECKBERG, or BERKHEYDEN, GERRARD, brother of the preceding, was born at Haerlem in 1645, and painted many pictures in concurrence with his brother; but his uſual ſubjects were views of churches, convents, noblemen's houſes, and magnificent ſtructures, which he adorned with ſmall figures deſigned after nature, and intended for his compoſitions. His works were much eſteemed; but as he was advancing to reputation, he was unfortunately drowned in a canal on his return home from an evening party of friends. This event happened in 1693. Pilkington.

BRECKENRIDGE, in *Geography*, a county of Kentucky in America, containing 758 inhabitants; the court-houſe and poſt-office are 700 miles diſtant from Waſhington.

BRECKERFELD, a town of Germany, in the circle of Weſtphalia, and county of Marck; 26 miles N.N.E. of Cologn.

BRECKNOCK, a townſhip of America, in Lancaſter county, and ſtate of Pennſylvania, having 744 inhabitants.

BRECKNOCK, or BRECON, is the principal and county town of Brecknockſhire, S. Wales. It is ſituated in a moſt romantic part of the country on the banks of the rivers Uſk and Honddy, whence its ancient name was Aberhonddy. During the days of chivalry and papacy here were a caſtle and a monaſtery, both of which appear to have been extenſive and important. They were built in the reign of Henry I. by Barnard de Newmarck, a Norman lord, who obtained great poſſeſſions in this part of the country, and perpetuated his name by founding ſeveral religious houſes. This town was particularly diſtinguiſhed by his inſtitutions; among which were two priories appropriated reſpectively to Benedictines and Dominicans. One of theſe was converted into a college by Henry VIII., and the principal building of the other is now a pariſh church. The remaining fragments of the caſtle prove that it has been an extenſive and grand pile of building. Part of the keep, and a tower called Ely-tower, ſtill remain. The latter is ſo named from Dr. Morton, biſhop of Ely, who was confined here by order of Richard III., where, in conjunction with his keeper, the diſappointed duke of Buckingham, they planned the union of the two houſes of York and Lancaſter, and the ſucceſſion of Henry VII. Their plan was completely digeſted, and eventually brought to a ſucceſsful termination, though the projectors of it experienced very oppoſite fates. The duke, who was the moſt active in this transaction, was detected, ſeized, and executed; but the more fortunate biſhop eſcaped from the caſtle, kept quiet, and lived to become, in the enſuing reign, a privy counſellor, and was further advanced to fill the metropolitan ſee of Canterbury. The caſtle is divided from the town by the river Hodny or Honddy. Its main body, with all the principal parts, are ſtill to be traced, though the tower juſt mentioned is the only large maſs of building that remains to characterize its architecture and gloomy dignity.

Brecknock was formerly ſurrounded with an embattled wall, and entered by four gates, named, according to their reſpective ſituations, Eaſt-gate, Weſt-gate, High-gate, and Water-gate. There was alſo another gate in the ſuburb, called Portherne S. Mariæ. The town conſiſts, at preſent, of three principal ſpacious ſtreets, and, according to Mr. Malkin's ſtatement, "is one of the beſt built in Wales," though ſome of the ſmaller ſtreets, occupied by poor inhabitants, are "miſerably deficient in general arrangements." The trade, though not very conſiderable, is progreſſively increaſing ſince the completion of its canal; and ſome manufactories of woollens and hats are eſtabliſhed on a reſpectable ſcale. "Brecknock," obſerves Mr. Malkin, "appears in moſt reſpects to be a very deſirable reſidence, and is much inhabited by clergy and gentry of independent fortunes. The number of ſpacious and modern-built houſes is greater, in proportion to its ſize, than perhaps in any town of Wales. The markets are well, but not very cheaply, ſupplied. The broken ſummit of the mountainous ridge, continued into Monmouthſhire in irregular lines; the diſmantled towers of Aberhonddy, with its mouldering walls in wild and various ruins, while the unpictureſque compactneſs of the modern buildings is favourably concealed, render this one of the moſt ſtriking ſituations, near any town in the principality." The ſituation of the priory and caſtle, with the ſecluded and intereſting walks formed near theſe ruins, are peculiarly delightful, and invariably attract the attention and admiration of all ſtrangers. Brecon is a borough, and returns one member to parliament.

Here were buried the three biſhops of St. David's, Mainwaring, Lucy, and Bull. In the town and its vicinity have been found ſeveral Roman antiquities, with coins, &c. and ſome large intrenchments are to be ſeen on the neighbouring hills; but the moſt remarkable fortification is Y-Gaer, about two miles N. W. from the town. This was probably occupied, if not made, by the Romans. It is ſeated on a gentle eminence, overlooking the river Uſk; parts of its walls remain; and within the area of the camp ſome Roman bricks have been found, ſimilar to thoſe at Caerleon, with the inſcription LEG II AUG. Contiguous to the camp, in the middle of a highway, is a rude carved pillar, about ſix feet high, called *Maen-y-Morinion*, or the Virgin's ſtone. Another fragment of Roman antiquity is a ſepulchral pillar, noticed by Gibſon and Gough, ſtanding upright by the road-ſide, with a defaced inſcription, of which only the word VICTORINI is legible.

Brecknock conſiſts of three pariſhes, and contains 540 houſes, and 2576 inhabitants. It is 171 miles weſt from London, and has two weekly markets on Wedneſdays and Saturdays, and four fairs yearly. Evans's Cambrian Itinerary, 8vo. 1801. Malkin's Scenery, Antiquities and Biography of South Wales, 4to. 1804. Gough's Edition of Camden's Britannia, vol. ii.

Brecknock *Canal*, in *Inland Navigation*, joins that from Monmouthſhire, eight miles and a half from Newport, and about one from Pontypool. It croſſes the river Avon, and paſſes the high ground by means of a tunnel 220 yards long, and, inclining towards the river Uſk, paſſes Abergavenny. It then runs parallel with the Uſk to the town of Brecknock; making a courſe of nearly thirty-three miles, with ſixty-eight feet riſe. A rail-road extends from Abergavenny to the canal, one mile in length; and from the canal at Cwm Clydach to the coal and iron works at Wain Dew, four miles and three quarters. Another rail-road, from the canal to Llangroiney, croſſes the river Uſk, and is in length one mile and a quarter. The rates of carriage for all kinds of merchandize, materials, horſes, cattle, &c. are particularly ſpecified by the act of parliament. Philips's Hiſtory of Inland Navigation, 4to.

BRECKNOCKSHIRE, deriving its name from Brecan, a diſtinguiſhed character in legendary ſtory, who ſucceeded to it about the year 400, one of the counties of South Wales, is bounded on the north and eaſt by Radnorſhire, having the river Wye for its natural diviſion. A ſmall part of Herefordſhire alſo attaches to its eaſtern limits; on the ſouth-eaſt and ſouth the county of Monmouth forms its boundary; and a ſmall part of Glamorganſhire, with Caermarthenſhire and Cardiganſhire, bound its weſtern and ſouth-weſtern extremities. The length of this area, north and ſouth, is eſtimated at twenty-nine miles, and its breadth at the ſouthern baſis about thirty-four miles, making nearly 900 ſquare miles, and containing about 600,000 acres. This diſtrict is divided into the ſix hundreds of Builth, Crickhowel, Deuynnoch, Merthyr, Penkelly, and Talgarth, and contains 4 towns, and 67 pariſhes. Theſe, with the hamlets, are populated by 31,633 perſons, and contain 6794 houſes.

This county is deſcribed in the following terms by Giraldus Cambrenſis, who wrote at the latter end of the twelfth century, and was archdeacon of St. David's, in which dioceſe this county is included.

"Brechiniane (ſays he, in his Itinerary of Wales) is a county abounding with corn; and if ever any deficiency happens, it is plentifully ſupplied from its neighbour, England. It is rich in paſtures and woods, deer and herds, and abounds alſo with river-fiſh in the Uſk on one hand, and the Wye on the other; both yielding ſalmon and trout in plenty, but the Wye greater quantities of the excellent fiſh called *umbræ*. It is encloſed on every ſide, except the north, by high mountains; having on the weſt the mountains of Canterbochan; on the ſouth the ſouthern hills, the chief of which is Cader-Arthur, or Arthur's chair, from its two ſummits (it being *δικορυφος*, *double-topped*) reſembling a chair; and this chair, being on a high and ſteep place, is by the vulgar aſcribed to the greateſt and moſt ſovereign monarch of Britain, Arthur. On the top of this hill riſes a ſpring, deep like a well, but ſquare; and though no ſtream runs out of it, they find trout in it. Theſe mountains, forming a barrier to the ſouth, keep out the ſun, while cool breezes, and the native ſalubrity of the air, render the country extremely temperate. On the eaſt ſtretch the Tolgar and Ewias hills."

Previous to the reign of William Rufus, this county appears to have been veſted in its native princes; but in this reign Barnard de Newmarch, a Norman of great ſpirit combined with prudence, aſſembled a conſiderable body of Engliſh and Normans, with whom he invaded this territory, and ſubdued the inhabitants. To ſecure his newly acquired poſſeſſions, he built caſtles, and aſſigned different parts of them to his principal aſſociates. This policy further induced him to marry Neſt, grand-daughter of Gruffyth ap Lhewelin, who, proving to be of a moſt revengeful and abandoned ſpirit, involved her lord in much trouble, and occaſioned her ſon to be diſinherited, by falſely ſwearing to king Henry I. that he was a baſtard. The lordſhip progreſſively paſſed to Milo, earl of Hereford, and his ſons, next to Humphry de Bohune, to Philip Bruſe, to Thomas Plantagenet, ſixth ſon of Edw. III., and afterwards to the dukedom of Buckingham, till an attainder veſted it in the crown. Brecknockſhire was the ſeat of war in 1217, and afterwards in 1233, when Lhewelin came with an army, and deſtroyed nearly all the towns and caſtles in the county. At the reſtoration James Butler, afterwards duke of Ormond, was created earl of Brecknock.

The general aſpect of the county is mountainous and grand, affording a ſublimity of ſcenery, interſperſed with large plots of cultivation, that attaches to it a peculiar character among the ſtrongly marked diviſions of South Wales. It is diſtinguiſhed from Glamorganſhire by more level and extenſive vales; its mountains are alſo more continuous, more lofty, and preſenting an appearance of hill piled upon hill. Its woods are commonly in very large maſſes, and the banks of its rivers are luxuriouſly clothed.

The principal river of this county, next to the boundary one of the Wye, is the Uſk, which, taking its riſe in the Black mountain, on the border of Caermarthenſhire, flows through a fine valley, in its progreſs to Brecknock.

Agriculture, in this county, is much improved within the laſt twenty years. Being contiguous to Herefordſhire, the good huſbandry of which is deſervedly noted, many Engliſh farmers have purchaſed eſtates here, and introduced, with themſelves, new and more approved principles of agriculture.

The principal remains of Roman antiquities are in and near the town of Brecknock. Among theſe are a cauſeway running nearly at right angles with the Iſker, and leading probably to the great Roman camp in the neighbourhood. Another Roman road has been diſcovered near the bridge of Capel Rhyd y Briw, and another on the top of the moſt unfrequented mountains. A Roman hypocauſt has alſo been diſcovered in a field near the county town. Malkin's Tour in South Wales, 4to. 1804. Gough's edition of Camden's Britannia, vol. ii. Barber's Tour in South Wales, 8vo. 1803.

BREDA, Van, or Bredale, Peter, in *Biography*, a painter of landſcapes and cattle, was born at Antwerp in 1630; ſtudied landſcape after nature, and adorned his deſigns with figures, correctly drawn and judiciouſly grouped. His ſcenes are generally enriched with elegant Roman buildings, fountains, monuments, and ruins. His ſtyle, though inferior, reſembled that of John Brueghel. He died in 1681. Pilkington.

Breda, Van, John, a painter of hiſtory, landſcape, and converſations, was born at Antwerp in 1683, and inſtructed by his father Alexander Van Breda, who was much eſteemed as an artiſt, with whom he continued, profiting by good example and advice, till he was 18 years of age. Among the capital paintings in the poſſeſſion of John de Wit at Antwerp, Breda ſelected thoſe of Velvet Brueghel, which he ſucceſsfully copied; and he employed 9 years in copying alſo the pictures of ſeveral other great maſters, which he did ſo exactly as to puzzle good judges in diſtinguiſhing the originals from the copies. Having eſtabliſhed his reputation in Holland, he accompanied Ryſbrack the ſculptor to London, where he was highly eſteemed and obtained conſiderable patronage, and particularly that of the earl of Derwentwater, who was beheaded for rebellion in 1715. In London he was much employed by the court and nobility, and was hardly able to ſupply the demands made upon him for his performances. From London, after a reſidence of five years, he returned to Antwerp, much enriched; and in 1746, when Louis XIV. viſited that city, he honoured this maſter by purchaſing four of his pictures; viz., "Chriſt at the ſea of Tiberias," "Chriſt performing miracles," and "two landſcapes," with figures ſo exquiſitely finiſhed, as not to be eaſily diſtinguiſhed from thoſe of Brueghel. This maſter and Wowermans were the models which he imitated; and he approached nearer to them than any other artiſt of his time. His landſcapes are in the ſtyle and taſte of the former; and his converſations, hiſtorical figures, fairs, and battles are in the manner of the latter. His colouring is good, his touch neat, his ſkies and diſtances natural and beautiful; and his taſte of deſign agreeable. He had as much fire in his compoſition, and perhaps more genius than Brueghel; and, upon the whole, he is a painter of ſuch rank, that the value and eſtimation of his works muſt always increaſe. He died in 1750. Pilkington.

Breda, in *Geography*, a city of the Netherlands, the capital of Dutch Brabant, ſituated at the confluence of the rivers Aa and Merck, in a marſhy country which may be overflowed by means of theſe rivers. The former of theſe ſtreams, being, a little before its arrival at the town, augmented by the Byloop, is here rendered navigable, ſo as to form a communication with the German ocean. Breda was formerly large, populous, and well fortified, and was reckoned one of the ſtrongeſt places in the Dutch frontiers. But its fortifications have ſunk into decay, ſo that it is unable to ſtand a long ſiege; its circumference is eſtimated at about 4000 paces, and it is ſaid to contain about 2200 houſes, which are in general well built. Its citadel is environed with a moat; and its figure is triangular, having at every angle a gate conſtructed with brick; and its ramparts planted with elms. The great church is a magnificent ſtructure, and remarkable for its tower, built in 1696, and afterwards rebuilt, the height of its ſpire being 362 feet. In this church are ſeveral monuments of the ancient lords of Breda; of which the principal are thoſe of Engelbert I. who died in 1442; of John, who died in 1473; and of Engelbert II. who died in 1504; but they are not well preſerved. The town-houſe is large, and its apartments regular and ſumptuouſly furniſhed. Its woollen manufactures and commerce were formerly proſperous; but they have long ſince very much declined.

Breda is the capital of an ancient barony or free lordſhip, which comprehends ſeveral conſiderable villages, and the woods of Lieſboſch, Maſtboſch, and Ulvenhoutſeboſch. The former of theſe woods is interſected with walks and viſtas; and the ſecond, conſiſting of fir-trees, is about 1½ league in length, and half a league in breadth. This barony includes good corn land and paſtures, interſperſed with many heaths and moraſſes. It was wreſted from the county of Stryen, to which it formerly belonged, about the year 1100, by the duke of Brabant; in 1212 it pertained to Godfrey of Berg, as a fief of Brabant; in 1284 John I. duke of Brabant conferred the lordſhip of Breda on Raſo von Gavre; and in 1326 it was ſold to John III. duke of Brabant, who parted with it, in 1351, to John von Polanen, whoſe grand-daughter Joanna transferred it to her conſort Engelbert of Naſſau, whom ſhe married in 1404. In conſequence of this alliance it remained in the houſe of Naſſau, till William III. of England, dying without iſſue, cauſed it to be left in abeyance. The old caſtle was begun by Henry of Naſſau in 1530; but about the year 1680, William prince of Orange, afterwards king of England, erected the new one, which is a magnificent ſtructure, ſurrounded by the waters of the Merck. Breda ſuffered exceedingly in the wars of the 16th century. In 1567 it was annexed to the domains of the king of Spain, by the duke of Alva, on account of the rebellion of William of Naſſau, prince of Orange. In 1575, the emperor Maximilian having offered his mediation for peace, a conference was held at Breda, but it terminated without an agreement between the Spaniards and the Confederates. In 1577 it was delivered up by the garriſon to the States; but in 1581 it was retaken by Claude de Berlamont, and fell into the hands of the Spaniards. In 1590 prince Maurice took it by a ſtratagem, having ſent a party of ſelect men concealed in a boat loaded with turf, by which means the prince was admitted, and the city ſurrendered. In 1625 it was inveſted by Spinola, who, well knowing the ſtrength of the place, determined to reduce it by famine, and for this purpoſe drew trenches round it for the ſpace of four miles, erecting forts and redoubts at certain intervals; the ſiege was proſecuted by Spinola with the utmoſt diligence and vigour; and the place was defended, amidſt the calamities of famine and diſeaſe, with a ſagacity, ſteadineſs, and valour, which did honour to the talents of the governor, Juſtin de Naſſau, the natural ſon of William prince of Orange. A negotiation at length took place between the beſiegers and the garriſon; and the reſult was, that two capitulations were drawn up, one for the garriſon and the other for the city, both of which were the moſt honourable and advantageous that could be deviſed. Theſe were accepted; and the garriſon marched out, after having ſuſtained a ſiege of 10 months, and having loſt two-thirds of their number and an equal number of the inhabitants. Spinola drew up his army to ſalute them, and, ſurrounded by his field officers, paid particular compliments to the governor, and commanding officers. He alſo diſtributed money among the ſoldiers, ordered the ſick and wounded to be tenderly treated and taken care of; and in the regard paid to the valour and merit of his enemies he diſplayed all the ſentiments of a hero. On the citizens alſo he poured out a profuſion of civilities; manifeſting his admiration of their conſtancy and fidelity to a degree, which even alarmed the States-General. In 1637 Henry, prince of Orange, determining to recover Breda, laid ſiege to it on the 23d of June, and obliged the governor, Omer de Fourdin, a very diſtinguiſhed officer, to ſurrender, the 20th of October following. The governor and ſoldiers on this occaſion, were, by the prince's generoſity, allowed all the honours of war; and the officers of the city placed on the ſame footing as in the year 1625, before it was reduced by Spinola. Fourdin paid his compliments, ſealed in a letter, to the prince; he was received graciouſly, loaded with praiſes and honours, and diſmiſſed with valuable preſents, reflecting equal credit on the generoſity of the prince and the valour of the governor. After this event the Dutch conſiderably augmented the fortifications; and yet, though they have been reckoned among the moſt complete in the Netherlands, Breda ſurrendered to the French, on the 24th of February 1793, after a ſhort ſiege of 10 days. However, on the 20th of March following, it was again delivered up to the Dutch by capitulation, and the ſoldiers were permitted to return to France with ſafe conduct.

Breda was rendered famous in 1667 by the famous congreſs which was held there for a general peace; firſt, between Louis XIV. king of France, and Charles II. king of England, concluded the 21ſt of July, by the mediation of the king of Sweden; ſecondly, between the king of England, and the States-General on the 31ſt of July, one article of which peace was the ceſſion of the province of New York to the Engliſh; and thirdly, on the ſame day a peace was ratified between the king of England and Frederick III. king of Denmark. Breda lies 46 miles ſouth of Amſterdam, and 22 S. S. E. of Rotterdam. N. lat. 51° 37′. E. long. 4° 45′.

BREDE, La, a town of France, in the department of the Gironde.

BREDEMEYERA, in *Botany*, Willden. 1314. Claſs, *diadelphia octandria*. Eſſential Char. *Caylx* three-leaved; *Cor.* papilionaceous; ſtandard two-petalled; drupe with a two-celled nut.

Species. B. *floribunda*. A ſhrub from five to eight feet high. *Leaves* nearly alternate, oblong-lanceolate, ſmooth, veined, two or three inches long, with ſhort petioles. *Flowers* ſmall, yellow, terminating, panicled. *Panicle*, much branched, pyramidal, many-flowered. *Bractes*, linear-ſubulate, at the baſe of the pedicles. A native of Caraccas in the margins of woods.

BREDENBORN, in *Geography*, a town of Germany, in the circle of Weſtphalia, and biſhopric of Paderborn, 4 miles E. of Neheim.

BREDERODE, an ancient ſeignory of Holland between Beverwick and Haerlem; the lord of which was one of the principal perſons who preſented a petition to Margaret of Auſtria, againſt the inquiſition and other innovations in the year 1566. The title is extinct.

BREDEWIG, or Breedvig, a ſea-port town in Norway, in the dioceſe of Aggerhuus, and diſtrict of Bradſberglehn, 44 miles S. S. W. of Chriſtiania.

BREDEWITE, *in Ancient Law Writers*, an amercement ariſing from ſome default in the aſſiſe of bread.

BREDIN, in *Conchology*, the French name of the common limpet. Patella vulgaris.

BREDL, in *Geography*, a town of Bohemia, in the circle of Boleſlaw; 6 miles N. E. of Turnau.

BREDON, the name of a hill in England, that divides the vale of Tewkſbury from that of Eveſham; from the ſummit of which the proſpect is extenſive, commanding the cities of Glouceſter and Worceſter, and a conſiderable number of towns and villages.

BREDSTEDT, an ancient and populous town of Denmark, in the duchy of Sleſwick, and capital of a diſtrict of the ſame name, two Daniſh miles in length and as many in breadth, containing a conſiderable number of acres of marſhland, and ſubject to the prefect of Flenſburg; 21 miles N. N. W. of Sleſwick.

BREDYDT, a town of Germany, in the circle of the Lower Rhine, and electorate of Treves; 11 miles E. of Treves.

BRE'E, a town of France, in the department of the Lower Meuſe, and chief place of a canton, in the diſtrict of Ruremonde. The town contains 1184, and the canton 5493 inhabitants; the territory includes 162½ kiliometres and 11 communes.

BREECH, in *Ship Building*, the angle formed by a knee timber, the inſide of which is called the *throat*.

Breech *of a gun*, in *Artillery*, denotes the diſtance from the hind part of the baſe ring to the beginning of the bore, and is always equal to the thickneſs of the metal at the vent. See AC, *fig.* 1. *Tab. Gunnery*.

Engineers have contrived a ſort of cannons, which are charged by the breech.

Breech-*mouldings*. See Mouldings.

Breech *preſentation*, in *Midwifery*, a ſpecies of preternatural or croſs-birth, which ſee; in which the nates of the fœtus preſent to the uterine orifice, at the commencement of labour, inſtead of the head.

When on the burſting of the membranes, the part of the fœtus about to enter the os uteri feels ſoft, and of a globular figure, the accoucheur will generally be right in pronouncing that it is the breech of the child that preſents; particularly, if during the pains, the meconium, or fœces of the child are forced away.

Though both nates may be perceived preſenting, when the child enters the pelvis of the mother, yet one of them always comes down, through that paſſage, before the other, and in that manner comes into the world.

When the pelvis of the mother is of the uſual form and dimenſions, and the child is not diſproportionably large, this ſpecies of labour requires very little more attention, on the part of the aſſiſtant, and uſually terminates, equally ſafely to the mother and child, though not ſo ſpeedily, as a natural labour.

When, on account of the diſproportion between the bulk of the child, and the pelvis of the mother, or through the rigidity of the ſoft parts of the mother, the breech of the child is very much preſſed, and ſtraightened in its paſſage, the ſcrotum, if it be a male, will be much ſwelled, and black. This blackneſs and ſwelling, however, uſually ſoon ſubſide, or they may be diſperſed, by fomenting the part with warm water, applying afterwards, ſome elder, or other cooling ointment.

In this kind of labour no manual aſſiſtance will be neceſſary in ordinary caſes, until the breech of the child is thruſt down ſo low by the pains, as to preſs upon the external orifice. The accoucheur may then paſs a finger up the vagina, and round the groin of the child, and aſſiſt in drawing it down, during each pain. This will contribute much towards facilitating and expediting the birth of the part. Or if, on account of the diſproportion between the ſize of the child, and the capacity of the pelvis of the mother, the breech of the child ſhould not deſcend ſo low as to enable the accoucheur to aſſiſt with his finger, a blunt hook may be paſſed round the groin, and uſed in the ſame manner. This will give a better purchaſe, and enable him to exert much more force than he could uſe with his finger; but great caution is neceſſary in extracting in this way, leſt the head of the thigh bone of the child be broke off with the inſtrument. To prevent this accident, it will be neceſſary that the accoucheur keep two or three of his fingers preſſed ſtrongly againſt the thigh, on the ſide the inſtrument is applied, keeping the thigh cloſe to the body of the child.

When, by either of theſe means, the breech of the child is delivered, the accoucheur muſt attend to the poſition of the child, and if its belly be placed oppoſite to the pubes of the mother, he muſt turn it round to the ſacrum, and then complete the delivery in the manner directed under the article, Labour *Preternatural.*

If flooding or convulſion ſhould come on, during a labour of this kind, before the breech of the child has entered, or made much progreſs in the pelvis, the accoucheur muſt paſs his hand ſlowly and gradually up into the uterus, until he reaches, and can take a firm hold of one or both the feet of the child, which he muſt bring down through the vagina, withdrawing his hand in the ſame ſlow and cautious manner as he had introduced it. See Convulsions and Flooding during parturition.

BREECHES, a garment worn by males, reaching from the girdle to the knees, and ſerving to cover the hips, thighs, &c.

The ancient Romans had nothing in their dreſs anſwering to our breeches and ſtockings; inſtead of which, under their lower tunics and waiſtcoats, they ſometimes bound their thighs and legs round with ſilken ſcarves, or *faſciæ*, called *tibialia* and *femoralia.* Salmuth. ad Panciroll. p. i. 161. Kennet. Rom. Ant. Not. p. ii. lib. v. cap. 8. Breeches appear to be a habit peculiar to the barbarous nations, eſpecially thoſe inhabiting the colder countries of the North; whence Tacitus calls them *barbarum tegmen.* We find mention made of them among the ancient Getæ, Sarmatæ, Gauls, Germans, and Britons; they alſo obtained among the Medes and Perſians, as being a people of Scythian origin; they alſo afterwards got footing in Italy, ſome pretend as early as the time of Auguſtus; but without much foundation, that emperor's breeches, mentioned by Suetonius, being apparently only ſwaths tied over his thighs. Tacit. Hiſt. lib. ii. cap. 20. Perſ. Sat. iii. ver. 51. Ovid. Triſt. lib. v. Eleg. 11. Suet. in Auguſt. cap. 82.

However this be, breeches were at length received into Italy, and grew ſo highly into faſhion, that it was thought neceſſary, under Honorius and Arcadius, to reſtrain them by law, and expel the *braccarii*, or breeches-makers, out of the city; it appearing a thing unworthy, that a nation, which commanded the world, ſhould wear the habit of barbarians. We find frequent mention of *bracæ*, *braccæ*, or *bracchæ*, in claſſic writers, but the form of this habit is not agreed on; ſome will have it to have been a rough party-coloured coat.

BREECHING, in *Sea Language*, a rope uſed to ſecure the gun of a ſhip, and to prevent it from recoiling too much in the time of action. It is thus named, becauſe it is made to paſs round the breech of the gun. This rope is fixed by faſtening the middle of it to the hindmoſt knob, or caſeabel of the gun, which, by ſailors, is called the pomiglion, or pummelion; the two ends of it are afterwards inſerted through two ſtrong rings on the ſides of the carriage, and faſtened to other bolts in the ſides of the ſhip. The breeching is of ſufficient length to allow the muzzle of the gun to come within the ſhip's ſide to be charged.

BREED, in *Rural Economy*, a term applied to any particular ſort of any kind of domeſtic animal, which is known and diſtinguiſhed from all others by certain characteriſtic marks, or in the technical language of the breeder, *points.* Thus, in the horſe kind, we have the *race breed;* the *heavy black*, *cart*, or *Leiceſterſhire breed;* the *Cleveland bay*, or *Yorkſhire breed;* the *Suffolk Punch breed;* the *Clydeſdale*, or *Scotch breed;* the *Welch, or poney breed*, &c. And in neat cattle, the *long-horned*, or *Lancaſhire breed;* the *middle-horned*, or *Devonſhire breed*; the *ſhort-horned*, *Dutch* or *Holderneſs breed;* the *Welch breed;* the *Suffolk dun breed;* the *Gallaway*, or *polled breed;* the *Highland*, or *Kiloe breed;* the *Lowland*, or *Fifeſhire breed;* the *Alderney breed;* the *Wild breed*, &c. In the ſheep kind, the *new Leiceſter*, or *Diſhley breed;* the *Lincolnſhire breed;* the *Teeſwater breed*; the *Romney Marſh breed;* the *Dartmoor*, or *Devonſhire nutt breed;* the *Exmoor breed;* the *Dorſetſhire breed;* the *Herefordſhire*, or *Ryland breed;* the *South Down breed;* the *Norfolk breed;* the *Heath breed;* the *Herdwick breed;* the *Cheviot breed;* the *Dunfaud breed;* the *Shetland breed;* the *Merino*, or *Spaniſh breed*, &c. In the ſwine kind, there are likewiſe ſeveral breeds, as of the large ſort, the *Berkſhire breed;* the *Hampſhire breed;* the *Shropſhire breed;* the *Glouceſterſhire breed;* the *Herefordſhire breed*, &c. and of the ſmaller ſorts, the *Chineſe breed;* the *white*, or *ſlouch-eared breed;* the *prick-eared breed;* the *ſwing-tailed breed*, &c.

The different properties and qualities of the various breeds of theſe different kinds of domeſtic animals, will be fully deſcribed and explained when we come to ſpeak of the means of improving live ſtock. See Cattle and Live Stock.

Much of the ſucceſs of the grazing farmer depends upon a correct knowledge and judgment in ſelecting and chooſing thoſe breeds of different kinds of animals that are the moſt adapted to the nature, circumſtances, and ſituation of his land. See Grazing and Stocking Pastures.

In the ſmaller kinds of domeſtic animals, there are likewiſe different breeds, which will be deſcribed in conſidering their particular applications and uſes in the practice of the farmer.

Breed's *Hill*, in *Geography*, an eminence, near Boſton, in America, where the Americans withſtood the attack of the Britiſh troops at the commencement of the American war, and where the former loſt five pieces of cannon and 139 men, and the latter loſt 1054 men, among whom were 19 officers who were killed, and 7 wounded. This battle is commonly called "the battle of Bunker's Hill," from the name of another hill near Breed's Hill. It happened on the 17th of June, 1775.

BREEDBAND, in *Natural Hiſtory*, one of the ſynonyms of Echinus Saxatilis, which ſee.

BREEDING, in a general ſenſe, is uſed for the care of rearing or bringing up the young of divers animals.

Breeding, in a moral ſenſe, denotes a perſon's deportment or behaviour in the external offices and decorums of ſocial life. In this ſenſe, we ſay, well-*bred*, ill-*bred*, a man of *breeding*, &c. Good breeding amounts to much the ſame with what is otherwiſe called *politeneſs*, among the ancient Romans *urbanity*. Good breeding is nearly allied to virtue, and will, of itſelf, lead a man a great part of the way towards the ſame; it teaches him to rejoice in acts of civility, to ſeek out objects of compaſſion, and to be pleaſed with every occaſion of doing good offices. Lord Shafteſbury compares the well-bred man with the real philoſopher: both characters aim at what is excellent, aſpire to a juſt taſte, and carry in view the model of what is beautiful and becoming. The conduct and manners of the one are formed according to the moſt perfect eaſe, and good entertainment of company; of the other, according to the ſtricteſt intereſt of mankind; the one according to his rank and quality in his private ſtation, the other according to his rank and dignity in nature. Horace ſeems to have united both characters.

"Quid verum atque decens curo et rogo, et omnis in hoc ſum."

Shaftes. Charact. vol. i. p. 64. vol. ii. p. 242. vol. iii. p. 161. Hor. lib. i. Ep. ver. 12.

Breeding, in *Midwifery*. Immediately after having conceived, a woman is ſaid to be breeding, and this ſtage of pregnancy continues for the ſpace of three or four months, or to the time of quickening, after which ſhe is ſaid to be young with child, and at ſeven or eight months, great or big with child. Theſe ſtages, not of themſelves of importance enough to be noticed, are here mentioned on account of ſome ſymptoms, peculiar to each of them. The moſt remarkable of theſe, and which frequently attacks women almoſt immediately after conception, is nauſea and vomiting, particularly in a morning, and as ſoon as they riſe from their beds; though in ſome caſes, it continues through the whole of the day, ſcarce ſuffering them to retain any part of their food. It is uſual to attribute this ſymptom to nervous irritation, occaſioned by the diſtenſion of the minute veſſels of the uterus, the ſtomach ſympathiſing with the part. As it is ſo general an attendant on breeding, perhaps, by the ſhock it gives to the frame, it may be intended to aſſiſt in unfolding thoſe veſſels. Whatever may be the cauſe, vomiting in pregnancy is rather a troubleſome than dangerous ſymptom, and the violence of it may uſually be mitigated, though it cannot be entirely quieted, by a moderate and ſlender diet; and by taking ſmall doſes of rhubarb and magneſia, by loſing three or four ounces of blood from the arm, or by going for a ſhort time into the country. It uſually ceaſes ſoon after quickening, though in ſome women it continues through the whole time of geſtation. Cardialgia or heart-burn, which ſee, another frequent attendant on this ſtage of pregnancy, is equally untractable and laſting, and only to be alleviated by remedies and management ſimilar to thoſe recommended for nauſea and vomiting. Coſtiveneſs, to which women in this ſtate are alſo ſubjected, is perhaps occaſioned by the loſs of the bile, which is thrown up by vomiting, inſtead of going down through the inteſtines, where, by its ſtimulus, it is ſuppoſed to keep up the periſtaltic motion of the bowels, and thence to facilitate the deſcent, and diſcharge of the fœces. Magneſia and rhubarb, ſenna, manna, Epſom, and glauber's ſalts, in ſmall doſes, are the moſt convenient and efficacious remedies for obviating this complaint. When the ſtomach is ſo weak as to reject theſe remedies, recourſe may be had to aloes, of which four, five, or ſix grains, in the form of pills, may be given at night going to bed. The cuſtom of giving women a larger portion of food, while breeding, which by the common people is thought to be neceſſary, as they have then two to ſupport, if not the moſt frequent cauſe of the inconveniences here noticed, as attendant on pregnancy, certainly tends to increaſe and aggravate them, as the ſtomach is at that time generally very weak and delicate, particularly in the laſt months, when the uterus has acquired ſuch a bulk as to preſs on and ſtraiten the bowels, and conſequently to impede the paſſage of the food.

A moderate diet, air, and exerciſe, are neceſſary in every ſtage of pregnancy. Thoſe women therefore err exceedingly who live at ſuch times too ſedentary a life, particularly thoſe who ſpend much of their time in crouded rooms, at the card-table, &c. as beſides the injury done by ſitting too long in one poſture, which they always find troubleſome to them, they breathe an impure and noxious air, whence proceed head-achs, ſickneſs, faintings, and a train of nervous ſymptoms, which not unfrequently lead on to abortion.

Breeding, in *Rural Economy*, the art or ſcience of raiſing different ſorts of live ſtock, in the beſt and moſt perfect manner. This is a branch of the art of huſbandry, on which great attention has lately been beſtowed, but which probably depends on principles and circumſtances that are not yet fully inveſtigated or underſtood. Much improvement has, however, been effected in the raiſing of almoſt every kind of live ſtock, ſince the nature and means of its ſupport have been better known and more abundantly provided. The greatly increaſed demand for the animals, either in conſequence of their uſefulneſs for the purpoſes of labour or thoſe of ſupplying the food of mankind, has probably had much effect in promoting this ſort of improvement, as rendering it more an object to the breeding as well as grazing farmer. It has been well remarked by the author of "Practical Agriculture," that notwithſtanding much has been done in different diſtricts, in bringing different breeds of different ſorts of live ſtock to a greater ſtate of perfection, much ſtill remains to be effected; and that it is probably far from having reached that point to which it is capable of being carried, by the judicious combination of the beſt and moſt appropriate breeds of domeſtic animals, with the improvements in the cultivation of herbage, or other ſorts of green food for their ſupport. To fully explain the means of accompliſhing ſuch improvements in every ſort of ſtock, many additional facts and experiments are, however, neceſſary. All that can be done at preſent is, perhaps, that of preſenting the farmer with a few hints and directions, which may ſerve as guides in conducting the buſineſs.

In purſuing attempts of this nature to any extent, Mr. Middleton has juſtly obſerved, great care ſhould be previouſly taken, that there be a ſufficient degree of ſhelter, ſhade, and warmth, and at the ſame time a high ſtate of fertility in the land, with ſuitable drainage; as it is only by the richneſs and abundance of food that ſuch changes or improvements can be made in the moſt advantageous manner, or the ſtock be carried to any high ſtate of perfection.

Different modes of practice have been followed in the improving of live ſtock, but the principal are thoſe of croſſing the different breeds, ſo as to ſupply the imperfections and defects of the one by the merits and perfections of the other; and of uniting the valuable qualities or perfections of the ſame kinds by continuing to breed and ſelecting the moſt perfect animals in the ſame line or family. The former of theſe methods has been long known and employed; but the latter has, only within theſe few years, been fully introduced to the notice of the farmer, and is not, probably, yet ſo much attended to as it would ſeem to deſerve.

It has been commonly ſuppoſed, that the practice of croſſing the breeds of domeſtic animals poſſeſſes various other advantages, as well as thoſe of preventing the decreaſe and degeneracy of the ſtock, on account of the animals being kept from becoming too nearly related to each other. There are many facts, however, which ſhew that the ſuppoſition of the degeneracy of animals in conſequence of the nearneſs of their relationſhip is not ſo well founded as has been commonly imagined. The complete ſucceſs of the contrary practice in the management of Mr. Bakewell, who reared his beſt ſtock by the neareſt affinities, not only without degeneracy in any reſpect whatever, but with a continued improvement and amelioration, makes ſtrongly againſt the opinion; as well as the circumſtance of cattle in the wild ſtate, in particular ſituations, remaining for centuries without the leaſt alteration taking place in their form, or change in their colour or other properties. It has, notwithſtanding, been aſſerted, that in this ſyſtem of breeding, young ſtock decreaſe rapidly in ſize. If, however, ſuch a circumſtance was really apt to occur, it could hardly have been overlooked or diſregarded by the very expert and intelligent breeder juſt mentioned, in his long and very extenſive experience of raiſing various kinds of live ſtock, by coupling the moſt perfect animals of the ſame line or family.

There cannot be any doubt, however, but that by the method of croſſing the breeds of animals much advantage may be derived, eſpecially in what relates to ſize, and ſome other properties noticed below; yet it is obvious, that it muſt require the niceſt care, and the greateſt circumſpection, in order to ſuit the animals in the moſt exact manner to the nature of the improvement that is intended, otherwiſe injury, inſtead of advantage, may be the conſequence. Indeed, from the injudicious and random method in which improvements of live ſtock, on this principle, have, in general, been undertaken, it does not ſeem improbable but that injury may often have been produced inſtead of benefit, by uniting ſuch breeds, as from the great diſſimilarity of their forms, qualities, or other properties, could not have any chance of effecting the purpoſe with utility. Beſides, in almoſt every diſtrict of the kingdom, where the breeding ſyſtem is purſued to much extent, uſeful breeds of domeſtic animals are aſſerted to have been injured by the practice of injudicious croſſing, as may be ſeen in the various reports that have been publiſhed by the Board of Agriculture: and lord Somerville, in his excellent view of the ſyſtem of the Board of Agriculture, has very pertinently remarked, "that to the mountebank doctrines of croſſing diſſimilar breeds, whom nature in its infinite wiſdom had ſet aſunder, we are indebted for much confuſion and miſmanagement." It cannot, however, be diſputed, but that by purſuing this method with judgment and proper attention, great advantages may often be obtained, eſpecially in regard to bone or ſize, and the hide or coat, as well as in the improvement of particular parts or *points*, and probably in what relates to the movement or ſpeed of the animals. The author of "Practical Agriculture," has obſerved, "As it is in ſome meaſure a principle founded in phyſiological ſcience, and countenanced by the obſervation and experience of ages, that animals are ſomewhat endowed with the faculty of not only propagating an offspring that has, in a conſiderable degree, the properties, diſpoſitions, and reſemblances of themſelves, but that is, in ſome meaſure, ſubject to a ſimilarity of diſeaſe; it would appear, that although there may be occaſional deviations, the moſt certain method, and that which has the beſt foundation in the nature and economy of the animal, in ſo far as the particular qualities and other properties, beſides thoſe that have been juſt mentioned, are concerned, is to breed in the ſame line, and, perhaps, in the ſame family; as by a careful procedure in this way, the expert breeder may not only have the greateſt ſecurity for attaining that improvement which he is anxious to produce, but run the leaſt riſk of deterioration." The ſucceſs of this practice, it is contended, "has not merely been ſhewn in the breeding of the farmer's ſtock, but alſo in that of the ſportſman, as it has been found that pointers and game cocks have been bred with the greateſt perfection and ſuperiority in this mode:" and that "it is by the ſame means that the valuable properties of the race-horſe are perpetuated and preſerved." "The ſame thing likewiſe," it is added, "takes place in the vegetable economy, the fineſt and moſt perfect productions of this ſort being propagated by ſowing ſeed ſelected from the beſt and moſt perfect plants of the ſame kind, and taking the buds or offſets from the beſt and moſt perfect trees of the ſame ſpecies." "There is alſo another circumſtance," continues the ſame author, "that ſeems to ſhew the propriety and ſuperior advantage of this method of proceeding in the breeding of domeſtic animals, which is that, however much the breeds of live ſtock may be altered by climate, paſture, and other cauſes, in what reſpects their colour and other trifling particulars, their ſpecific characters remain invariably the ſame. No cauſes of theſe kinds have ever been capable of changing any one of the diſtinct breeds, whether of neat cattle, ſheep, horſes, or hogs, in ſuch a manner as to have the characteriſtic diſtinctions of thoſe of any of the others."

On theſe principles it is therefore concluded that "by having recourſe to occaſional croſſing in the above intentions, and the careful ſelection of the moſt perfect animals of the ſame breed or kind, with due attention to conſtant good feeding, the improvement of live ſtock may be carried to the greateſt perfection."

"But as the principal object of the breeding farmer muſt conſtantly be that of obtaining ſuch animals as will afford him the largeſt profit, it may be neceſſary to aſcertain the nature and form of the animal that may be moſt advantageous in this view, or which pays the beſt for the food that is conſumed, as by this means it will be ſeen what points are the moſt deſirable or uſeful in a breed or variety, and what circumſtances ought to be attended to, ſo as to juſtify its introduction in preference to any other."

The properties which ſeem the moſt particularly to intereſt the breeder, in his attempts to improve the different ſorts of live ſtock, are principally thoſe of form or ſhape, ſize, diſpoſition, hardineſs, quick maturity, nature of fleſh, fattening property, milk, hide, aptitude for labour, and the quality of the breed, or in the language of the art, *blood*.

With regard to *form*, the notions of breeders have been conſiderably at variance; but it would ſeem that there can only be one perfect form, which muſt be that which appropinquates the moſt to exactneſs in the ſhape and proportion of the different parts. This, ſhould, therefore, be the principal aim of the improver, whatever the nature or breed of the animal may be.

The writer, mentioned above, conceives, that "in this view a perfectly formed animal ſhould have an exact proportion and conſiſtency in all the different parts; the head neat and compactly formed, being neither too large nor of too great length; the eyes bright and prominent; the neck not of too great length, but ſomewhat thin, gradually narrowing from the breaſt towards the head, to which it ſhould be neatly attached; the cheſt round, wide, full, and of deep girth; the length of the legs well proportioned to the ſize; the fore ones ſtraight and clean, the hind ones forming an angle at the hock ſo as to ſtand well under the loins; the diſtance between the feet in the different extremities equal; the feet round and even; the hoofs ſtraight; the back and loins ſtraight and broad; the belly firm and capacious; the quarters deep, full, and well fleſhed downwards." This would ſeem to conſtitute that "utility of form," which is the chief aim of the moſt enlightened modern breeders: and it has been ſuggeſted as probable, that ſuch a form may be the moſt adapted to the principal object of the grazier, that of taking on and ſuſtaining fleſh in the proceſs of fattening; as where animals greatly exceed or fall ſhort of ſuch juſt proportions of parts, there muſt be diſadvantage either in their being weak and leſs diſpoſed to fatten, of courſe requiring a larger proportion of food, and more time in finiſhing the buſineſs; or in their being deficient in the general weight and value of the meat, from their not being ſufficiently fattened on the beſt parts. Mr. Young has indeed obſerved, in his Eaſtern Tour, that it has been the conſtant practice of Mr. Bakewell to procure ſuch animals, whether of the cattle or ſheep kind, as were capable of weighing the "moſt in the moſt valuable joints," as "there is a great difference between an ox of fifty ſtone carrying thirty in roaſting pieces, and twenty in coarſe boiling ones, and another carrying thirty in the latter, and twenty in the former." The utility of attending to this circumſtance cannot be diſputed; and it may likewiſe, in particular caſes, be of much benefit to conſider the nature of the conſumption, in relation to the form of the animal, as where ſome parts are more in demand than others in the market, and of courſe ſell at higher prices, that ſhould be taken into the account of the breeder, and that ſhape which is moſt favourable in this view more particularly attended to.

It is ſuppoſed probable, that improvement in theſe as well as many other points of importance depends upon a juſt proportion and ſymmetry of parts in the animals made uſe of for the purpoſe. And it is conceived not improbable but that the "excellence of the moſt valuable points in all the different ſorts of live ſtock may, in ſome meaſure, bear a proportion to the goodneſs of the form in the animal."

The fine fulneſs of ſhape uſually diſtinguiſhed by the breeder under the term "beauty of form," has been conſidered as very different from that of "utility of form," and to conſiſt in a greater roundneſs of the parts, with a leſs bony protuberant appearance.

Though it cannot but be a matter of much advantage to bring the ſhape of domeſtic animals to as high a ſtate of perfection as poſſible, yet utility, or what may be termed profit, ought to be more particulary regarded as being the main object of the breeding farmer.

In regard to the ſecond property, that of *ſize*, the queſtion does not ſeem to be yet decided, whether large or ſmall animals pay the beſt for the food they conſume, nor does it appear capable of being eaſily aſcertained, as it muſt obviouſly be influenced by a variety of cauſes. It is a property that may, however, be deſirable where the chief object of the grazier is that of feeding to a great weight, eſpecially where the ſupply of food is rich and abundant, but in other circumſtances, it is perhaps not ſo neceſſary to be attended to. It is the difference in the quantity of meat afforded by large and ſmall animals, in proportion to the extent and value of the food which they differently conſume, that is to be conſidered. The experience of graziers would appear to rather favour ſmallneſs of ſize, from the animals fattening with more expedition, and paying them better. And the judgment of Bakewell is in ſupport of the ſame concluſion, as he found that the "ſmaller the bone, the truer the make of the beaſt, and the quicker in fattening." Mr. Young has alſo obſerved, in reſpect to the large ſized breeds of cattle, as the Lincolnſhire and Holderneſs, that, though large, their ſize lies in their bones, they may be fattened with loſs, but can never pay ſo much for a given proportion of graſs as the ſmall-boned long-horned ſort.

Mr. Knight, an intelligent obſerver, however, contends that large animals are the moſt profitable, on the ground that they do not conſume food in proportion to their weight, as on putting the queſtion to different breeders, in different parts, he found they were uniformly of opinion, "that the ſame quantity of food was given to the ſmalleſt and the largeſt beaſts of the ſame age; that the largeſt, even when not maſter of the food, often kept itſelf in the beſt condition; and that every thing depended on the diſpoſition to fatten, and very little on the ſize of the animal." His own experience is likewiſe in ſupport of the ſame poſition. It is notwithſtanding allowed that a limited number of large cattle will generally conſume more than an equal number of ſmall. This has been clearly ſhewn by the practice of graziers in moſt places, as they have found, that with ſmall animals they can often ſtock nearly in the proportion of two to one. But in the conſumption of food a great deal muſt alſo depend on the ſtate of the ſtomach and digeſtive organs of the animals. There is another circumſtance that is neceſſary to be regarded as being in ſome meaſure connected with ſize, which is that of the quality of the fleſh. This is, in general, allowed to be the fineſt and moſt delicate, in the ſmaller ſorts; which would ſeem to be really the caſe from the grain or muſcular fibre being ſmaller, and of courſe finer. The taſte of the epicure alſo affords a further proof of the ſame thing, in conſtantly preferring the meat of ſmall-ſized animals of different kinds. On this account it has been commonly ſuppoſed that the meat of ſmall-ſized animals, is worth more for a given quantity, than that of large ones. Mr. Knight, however, contends, "that if the animal be taken as it ſtands in the paſture or ſtall, the contrary is the truth; but when the butcher merely buys what are termed the valuable parts, and receives the offal into the bargain, he will unqueſtionably, for obvious reaſons, give more for two cows of twelve ſtone each a quarter, than for one of twenty-four. The offal is of much greater value, beſides a conſiderable advantage in the hides. The difference between the weight of the animals, when living, and of the four quarters, when dead, is always in an inverſe proportion to their ſizes, when their forms and merits are equal; but the bones will then be in proportion to the living weight, and therefore, it is concluded, ſmall animals muſt be, in this caſe, moſt diſadvantageous to the conſumer." However, as the fleſh of large animals, from the greater ſize of their muſcles, would appear to be more coarſe in the grain; it is probable, that upon the whole, it muſt ſell at a lower price in the market. It has likewiſe been ſuppoſed to be an advantage on the ſide of large animals, that the meat, when preſerved, retains the juices more perfectly, and that there is leſs waſte in outſides.

On the ſuppoſition that ſmall ſized animals are in general more hardy than large ones, Mr. Knight remarks, "that if it be meant merely that they are capable of ſubſiſting on ſhorter herbage, it is right; as a large animal, though it may have exactly the ſame form as the ſmall one, neceſſarily requires more time for reſt. It feeds and removes itſelf with greater labour; and notwithſtanding it may be as ſtrong again, as having double the weight, it will ſtill, in relation to itſelf, be a weaker animal. Its head and neck will be as heavy again, and from their greater length, the weight will recede farther from the centre of motion in the ſhoulder, conſequently increaſe in power in proportion to the diſtance: and the ſame thing holds good in reſpect to the whole of the limbs." But that "in the ſtall or the fold, where large oxen are moſtly fed, theſe diſadvantages are of no conſequence, as the food is received without the trouble of looking for it; and if the neceſſity of a better paſture does not proceed from the large animal conſuming much more, but from leſs power in collecting food, the conſequence will be, that it muſt afford the largeſt weight of fleſh with the ſmalleſt conſumption of graſs."

With regard to the injury done to the ground by poaching, being greater in large than ſmall ſized animals; the ſame writer obſerves, "that the queſtion is not, whether the feet of the former be wider in proportion to their weight, but whether the feet and mouths of two ſmall animals will not injure the herbage more than thoſe of one large one." In favour of the latter it is contended, that ſmall ſheep do not produce any miſchief at all in this way, yet that a ſcore, weighing a ton in the aggregate, will do more harm to a rich paſture in forty-eight hours, than an ox of the ſame weight in a week. But though this may, in ſome degree, be true, there cannot be any doubt, but that ſmall ſtock may be kept longer in the paſtures in the autumn, than large, without miſchief by poaching, which is a great advantage in many caſes to the farmer.

In milking ſtock the advantage is allowed to be on the ſide of ſmall ſize, as ſuch animals give, individually, nearly the ſame quantity of milk as thoſe of the large kind, and are capable of being ſupported on ſhorter herbage, without injuring the land in the ſame degree.

There are likewiſe advantages in the ſmall ſized animals, in their being capable of being wholly fattened on graſs without the aid of other more expenſive kinds of food, and on inferior paſtures, as well as in their being procured by the grazier with greater facility; being more adapted to the conveniencies of different ſituations, and the loſs being leſs, in caſe of accidents.

It is evident, therefore, that as each ſize of ſtock has advantages, under particular circumſtances, the breeder ſhould be chiefly regulated in his conduct by the nature of his paſtures, and the command he has of other ſorts of food.

In reſpect to the *diſpoſition* of animals, there can be little doubt but that it muſt be advantageous to the farmer to have them tame and gentle without their being ſluggiſh or too dull, as they will be not only leſs diſpoſed to ramble, but be fed, reared, and fattened with leſs trouble, and with a ſmaller proportion of food. That this property is much influenced by the mode in which the animals are reared is fully ſeen by the facility with which they were managed in the practice of Mr. Bakewell.

The quality of *hardineſs* is likewiſe extremely deſirable and intereſting to the grazing farmer, in moſt caſes, but particularly in bleak and expoſed ſituations, as ſuch ſorts of ſtock conſtantly ſucceed better, and keep themſelves in more perfect condition, than thoſe in the contrary circumſtances. It is probable that this property depends in a conſiderable degree on the nature of the breed, and the manner in which the animals have been reared. It has often been ſuppoſed to be denoted by a darkneſs of colour, and a roughneſs in the hair; but to theſe there are numerous exceptions.

Quickneſs of arriving at maturity is another quality that greatly intereſts the breeding farmer, as his profits are obviouſly much influenced by it. And it is likewiſe of much importance to the public, as the abundance of ſupply muſt obviouſly be much connected with it. The length of time that different ſorts of live ſtock may be kept with advantage, under different circumſtances, has, however, not been yet well aſcertained, but neat cattle may generally, it is ſuppoſed, be kept longer with profit to the farmer than ſheep. It is obvious, however, that the method in which the animals are treated in reſpect to food muſt greatly influence the matter, as where they are abundantly ſupplied at all times, and of courſe conſtantly preſerved in a thriving ſtate, they will, without doubt, arrive much earlier at a ſtate of maturity, than when the contrary is the caſe. In all ſorts of ſtock this muſt invariably be the conſequence. It has, indeed, been well obſerved, by ſir John Sinclair, that where the animals are conſtantly well fed, a greater progreſs will be made in three years, than in the common pinching mode can be made in five. The neceſſity and advantage of not ſuffering live ſtock of any kind to be reſtricted, eſpecially in their more early growth, from the want of due care, food, and warmth, are therefore ſufficiently clear, and ſhould never be diſregarded by the breeder in rearing of his ſtock.

In addition to the obſervations that have been already made on the *nature of the fleſh* of animals, it may be remarked, that its goodneſs probably in a great meaſure depends on the breed being a quality inherent in the muſcular ſubſtance. Mr. Marſhall has indeed obſerved, in the Rural Economy of the Midland Diſtricts, that there "the grain is clearly underſtood to depend wholly on the breed, and not, as has been heretofore conſidered, on the ſize of the animal." Experiments are wanting to ſhew how far the flavour and colour of the fleſh of different animals may depend on or be influenced by the nature and quality of the food on which they are fed, and on the breed. The common notion of its being in ſome degree connected with the colour of the ſkin of the animal, is moſt probably without any real foundation. The great deviations that have ſometimes been obſerved in the fleſh of animals from the natural appearance, can only be accounted for on the ſuppoſition of their being diſeaſed. It is remarked in a late work on practical agriculture, that "in the living ſtate the proofs of good fleſh are a mellow, elaſtic, rather firm feel, without any degree of harſhneſs, and in the dead condition a ſimilarity of feel, with a fine grain and marbly appearance." There may likewiſe be ſome difference in the quality of the fleſh of animals in proportion as they are more old or young, being in the former caſe more hard and leſs tender and juicy than in the latter. The fineneſs of the grain may alſo vary according as the animal is male or female, being in general coarſer in the former than the latter.

The *diſpoſition to fatten* readily while young is another property which has ſome relation to that juſt noticed; and which greatly intereſts the profits of the grazing farmer, as where it does not occur, a large proportion of food muſt often be conſumed to little or no advantage. It is well known, that ſome animals of different kinds, and ſome particular breeds of different ſorts of animals, become readily fat with but a trifling conſumption of food, while others that conſume in a vaſtly increaſed proportion have not the leaſt appearance of attaining ſuch a ſtate ; but the principle on which this depends has not been yet fully aſcertained. From the little knowledge that has been obtained on the ſubject, it would ſeem to be a quality ſome way or other connected with the ſmallneſs of bone. In the experience of Mr. Bakewell and ſome other intelligent breeders, it was found to depend much upon the goodneſs of form and the breed. But whether it depends on theſe, or is the conſequence of ſome particular ſtate or ſtructure of the digeſtive or other internal organs, it is evidently of great importance to the farmer to have ſuch animals as not only fatten readily, but in many caſes, as can be ſupported on the inferior ſorts of food. The oppoſition that has been made to the utility of this quality on the ſcore of the over-fattening of animals, and the ſuppoſition that ſuch fat meat is leſs uſeful, as well as leſs economical in the conſumption, is probably without any foundation in truth or juſt obſervation, as the grazier has no other means of increaſing the quantity of lean meat in his feeding ſtock, but through the medium of the fattening property. This quality ſhould of courſe be conſtantly kept in view by the breeder in raiſing of his ſtock, whatever the kind may be.

The ſtate of the *hide or ſkin* is likewiſe a circumſtance that ſhould be attended to in the breeding of animals, as ſhowing, in ſome degree, their diſpoſition to become fat. When it has a ſoft ſilky feel there is moſtly a diſpoſition in the animal to fatten in an expeditious manner, and it is ſuppoſed to have an advantage in being more diſtenſible, and of courſe more adapted to admit a large increaſe of fleſh. Thick hides may, however, have advantages in cold expoſed ſituations, where warmth is more particularly neceſſary to the animals.

The quality of furniſhing a large ſupply of *milk*, with the leaſt poſſible expenditure of food, is another property in animals that ought not, by any means, be overlooked by the breeding farmer. How far a ſeparate and diſtinct breed ſhould be provided for this purpoſe, or one partly adapted to this uſe, and partly to that of the butcher, be employed, is a point that has not yet been determined ; but as it is well known, that ſuch cows as have much tendency to fatten ſeldom or ever afford any large quantity of milk ; there ſhould probably be a breed excluſively for the purpoſe of the dairy. Sir John Sinclair has, however, ſuggeſted it as probable, " that, by great attention, a breed might be reared, the males of which might, in every reſpect, be well calculated for the ſhambles ; and the females, when young, produce abundant quantities of good milk, yet, when they reached eight or nine years of age, be eaſily fattened." It is ſuppoſed that this would be the moſt valuable breed that could be produced, and that ſome of the Scotch breeds have nearly attained ſuch a ſtate of perfection.

The capability of performing *labour* in an eaſy and proper manner is another property, that, in many caſes, demands the attention of the breeder, eſpecially in neat cattle and horſes ; but in reſpect to the former ſort of ſtock, it has not yet been, by any means, decided, whether there be any advantage in the increaſe of meat by working the animals, or whether there may not be ſome diſadvantage in their growth being retarded by the practice. It cannot, however, be diſputed, but that where cattle are made to undergo much labour, they muſt be a greater length of time before they can be in a proper ſtate to be brought to the market ; and it would ſeem that the growth of the animals muſt alſo be leſſened ; however, as they are capable of being reared and kept at a much cheaper rate than horſes, a breed well calculated for this uſe may, in many inſtances, be an object of great conſequence to the farmer.

The inherent property of a breed, or what is uſually termed *blood*, is likewiſe a quality that has engaged the attention of the breeder in the raiſing of live ſtock. This is moſtly ſhown in the external appearance, and of courſe may ſerve to guide the judgment of the grazier in chooſing ſuch animals as may be the beſt ſuited to ſuch improvements as he may have in contemplation.

Such are the principal points to which the attention of the breeder ſhould be directed in his attempts at improvements of this nature, as well as the means by which they are chiefly to be accompliſhed. And it has been remarked by Dr. Dickſon, in his Syſtem of Practical Agriculture, that " the ſucceſs of his endeavours, to whatever ſpecies of excellence his attention may be directed, muſt obviouſly, in a great meaſure, depend upon the accuracy and correctneſs of his judgment in chooſing thoſe breeds, of whatever ſort of live ſtock they may be, that are moſt adapted to his circumſtances ; and in ſelecting ſuch individuals, both male and female, of ſuch breeds, as are the moſt perfect and exact in their different parts and properties ; cautiouſly continuing to breed from them, without ever ſuffering the leaſt intermixture by the admiſſion of thoſe of inferior qualities ; advancing in this way, with the niceſt attention to ſuch faults or defects, however trifling, as may ariſe, ſo as to alter and correct them by appropriate pairing in the ſucceeding generations. And as an indiſpenſible aſſiſtant in this arduous undertaking he muſt conſtantly have recourſe to the aid of good and abundant keep at all ſeaſons, with ſuitable degrees of ſhelter and warmth for both the old and young ſtock ; ſo that they may never decline in fleſh or be checked in their growth." This, continues he, " would ſeem to conſtitute the great ſecret of the important art of breeding live ſtock, which the ſuperior diſcernment and unwearied perſeverance of a ſingle individual raiſed to a degree of notice and perfection that has had the happieſt effects in bringing the improvement of our domeſtic animals to a ſtate of excellence perhaps unequalled in any other country." See Cattle and Live Stock.

Breeding *of fiſh*. See Fish-*pond*.

Breeding *of horſes*, *dogs*, &c. See Horse, &c.

BREEF-*cards*, denote a kind of falſe cards, either longer or broader than the reſt, whereby they may be known and diſtinguiſhed.

BREEN, *G. V.* in *Biography*, an engraver of ſome merit, whoſe time is not aſcertained, who worked entirely with the graver, and imitated the ſtyle of James de Gheyn, from whom he probably received his firſt inſtructions ; though he never equalled his maſter, either in correctneſs of deſign, or mechanical execution. Strutt.

BREENBERG, Bartholomew, called Bartolomeo, a painter and engraver, was born at Utrecht in 1620, and went, at an early period, for improvement to Rome ; where the ſociety of Flemiſh painters, called " Bentvogels," diſtinguiſhed him by the appellation of Bartolomeo. Among the ſuperb ruins and beautiful objects, in and about this city, he acquired an elegant taſte ; and he peculiarly excelled in landſcapes, which he enriched with hiſtorical ſubjects. The figures and animals, which he introduced, were elegantly diſpoſed, and executed with ſpirit and freedom : eſpecially when they were not larger than the ſmall ſize, in which he uſually painted them. His manner, particularly with reſpect to colouring, gradually improved ; his touch is light and ſpirited, his tone of colouring very pleaſing, his taſte altogether of the Roman ſchool, and his pictures are diſtinguiſhed both by force and delicacy. The draperies of his figures, which are gracefully proportioned and deſigned, are eaſy and ornamental, and in his ſmalleſt figures, the expreſſion is lively, ſenſible, and natural. His pictures are exceedingly rare, and highly valued. We have of his etching a ſet of 24 views, and landſcapes, ornamented with ruins, &c. from his own deſigns. He died in 1660. Pilkington and Strutt.

BREESEBACH, in *Geography*, a river of Germany, which runs into the Unſtrut, 4 miles S. of Weiſenſee, in the circle of Upper Saxony.

BREEZE, a ſhifting wind, blowing from the ſea and land alternately, during certain hours of the day or night; only ſenſible near the coaſts.

The ſea-breeze, Dampier obſerves, commonly riſes in the morning about nine, proceeding ſlowly in a fine ſmall black curl on the water towards the ſhore: it increaſes gradually till twelve, and dies about five.—Upon its ceaſing, the land-breeze commences, which increaſes till twelve; and is ſucceeded in the morning by the ſea-breeze again. The ſea-breezes rule by day, and the land-breezes by night; ſo that, dividing their empire, they remain as conſtant as the ſeaſons of the year, or courſe of the ſun, on which they ſeem alone to depend; not but that they appear ſooner or later, ſtronger or weaker, in ſome places than others, and vary the alternative according to the ſeveral latitudes, ſituations, ſoils, mountains, vallies, woods, and other circumſtances of the countries where they are found.

In ſome countries, the ſea-breezes appear only to be efforts of the general or trade-wind, as at Barbadoes, and in many places between the tropics, where the general wind, if not impeded by mountains or iſlands, blows freſh in the day-time, but, after ſun ſet, the terreſtrial exhalations becoming precipitated, produce a new wind, which is not only able to make head againſt the trade-wind, but to repel it from their coaſts.

The ſea-breezes do not all come from the ſame point of the compaſs, but from different points as the land lies.

In Brazil and many of the Caribbee iſlands, they have no land-breeze, eſpecially if the ſhores lie low, as at Barbadoes, where the general or eaſtern wind blows from one end of the iſle to the other, and ſerves inſtead of the land-breeze. In other places they want the ſea-breeze, eſpeally between the tropics, in coaſts which lie weſterly, as in the weſtern kingdoms of Africa.

If either the eaſterly or weſterly winds blow freſh, they hinder both the land and ſea-breezes in the Mediterranean; of which thoſe are always found the weakeſt which riſe lateſt. In England, in very hot days, and when no other winds are ſtirring, the like alternation of land and ſea-breezes may be obſerved on our coaſts, though with little certitude, any where to the northward of Portugal.

Breezes are more conſtant in ſummer than in winter, and more between the tropics than in the temperate zone.

The general cauſe of thoſe alternate breezes which ſet on and off the coaſts in hot countries, is the greater rarefaction of the air by reflected heat, and by fermenting exhalations over the land than over the water: the denſer air from the water becomes a ſea-breeze in the day; but this air, condenſed again, by the cold of the night, may then occaſion a land-breeze.

The cauſe of this alternation of ſea and land-breezes may be familiarly illuſtrated by placing a common pewter water-plate in the midſt of a large veſſel, and filling the former, firſt with hot water, and the latter with cold, and holding a taper juſt blown out at the edge of the plate; in which caſe, the ſmoke will be obſerved to gather over the plate which has heated, and of courſe rarefied the ſuperincumbent air; but if this experiment be inverted, and the plate filled with cold water, whilſt the larger veſſel is filled with hot water, the ſmoke of the taper, held near the plate, will be ſeen to move towards the rarefied air that reſts over the hot water in the larger veſſel.

Breezes differ from *eteſiæ*, or trade-winds, as the former are diurnal, or have their periods each day; and, beſides, they are only perceived near the ſhore or coaſt; whereas the latter are anniverſary, and blow at a diſtance from land. Phil. Tranſ. N° 183. p. 158. See Wind.

Breeze, in *Brick-making*, are ſmall aſhes and cinders ſometimes made uſe of inſtead of coals, for the burning of bricks. But as this does not ſo well anſwer the end, the uſe of it was prohibited by 12 Geo. I. cap. 35. but allowed by 3 Geo. II. cap. 22. 10 Geo. III. cap. 49.

Breeze-*fly*. See Oestrus and Gad-*fly*.

BREFFNY, in *Geography*, the name of an ancient diſtrict of Ireland, which included the preſent counties of Cavan and Leitrim, with part of Longford. It was divided into eaſt and weſt, and is frequently mentioned in the hiſtory of Ireland, as it was not divided into counties until the reign of James the Iſt.

BREG, a ſmall town of Swiſſerland, in the Valais, near the river Brone. N. lat. 46° 7′. E. long. 7° 16′.

BREGANCON, a fortreſs of France, ſituate on a ſmall iſland in the Mediterranean, near the coaſt between Toulon and St. Tropez.

BREGANZA, a ſmall place of Italy, in the territory of Vicenza, famous for a luſcious wine produced in its neighbourhood.

BREGE, a ſmall river of Germany, in the circle of Swabia, which joins the Bribach, below the town of Doneſchingen.

BREGENTZ, or Bregenz, in Latin, *Comitatus Brigantius*, a county of Germany, in the circle of Swabia, but annexed to the circle of Auſtria, bounded on the north by the territory of Wangen, on the eaſt, by the biſhopric of Augſburg, and the county of Tyrol, on the ſouth, by the counties of Pludentz and Montfort, and on the weſt, by the Rhine and the lake of Conſtance. It anciently belonged to the counts of Montfort: but in 1451, part of it was ſold to the archduke Sigiſmund for 35,592 Rheniſh florins; and in 1523, the other part was ſold for 50,000 Rheniſh florins, to the archduke Ferdinand. The capital of the ſame name is ſituated at the eaſt end of the lake of Conſtance; it has ſeveral iron works in its vicinity, and an adjoining citadel ſeated on a mountain, and named Pfanenberg. To the ſouth of the town is the "Bregenz-clans," which is a ſtrong paſs. This town was taken by the French on the 9th of Auguſt 1796. It lies 60 miles E. N. E. of Zurich. N. lat. 47° 31′. E. long. 9° 50′. The river Bregenz runs into the lake of Conſtance near the town.

BREGLIO, in *Geography*, a ſmall town of Piedmont, in the county of Nice, ſeated on the river Rodia.

BREGMA, or Fontanel, in *Anatomy*, is a ſpace left between the parietal or frontal bones in the fœtus, in which the pulſation of the brain may be felt. There is frequently a ſimilar vacancy between the parietal and occipital bones which is termed the poſterior frontal. See Cranium.

BREGNANO, in *Geography*, a ſmall town of Italy, in the duchy of Milan, ſeated on the river Seveſe.

BREGNO, Valdi. See Brenna.

BRE'HAL, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Coutances, 3 leagues S.S.W. of Coutances. The town contains 1373, and the canton 14,251 inhabitants; the territory comprehends 197½ kiliometres, and 16 communes.

BREHAN Loudeac, a town of France, in the department of Morbihan, 6 miles N. of Joſſelin.

BREHAR, or Bryer, the name of one of the Scilly iſlands, lying about 30 miles directly weſt of the Land's End in Cornwall, N.W. of St. Mary, and W. of Treſcaw, two other iſlands. It is mountainous and rocky, contains ſeveral barrows and monuments of the Druids, and is inhabited by 30 families. It abounds with ſea and land fowls, excellent ſamphire, and a variety of medical herbs. N. lat. 50° 2′. W. long. 6° 47′.

BREHEMONT, a town of France, in the department of the Indre and Loire; 4 leagues W. of Tours.

BREHNA, a ſmall town of Germany, in the circle and electorate of Upper Saxony, and in the prefecturate of Bitterfeld, having both ſeat and voice at the provincial diets; 12 miles E.N.E. of Halle.

BREHONS, in *Antiquity*, hereditary judges belonging to the inferior provincial kings, and alſo to the nobles or chieftains, among the ancient Iriſh, by whom juſtice was adminiſtered, and controverſies decided.

Theſe ſages were a diſtinct tribe or family, to whom competent lands were allowed in inheritance. One of theſe ſeems to have belonged to each ſept or tribe; and they ſat to try cauſes in the open air, either on the ſummit of a hill, or on its acclivity, as had been the cuſtom of the Druids; and in ſuch places the Iriſh continued alſo to hold their provincial aſſemblies, where all differences or complaints between diſtrict and diſtrict, and even private cauſes of extraordinary importance or difficulty, were heard and determined. To theſe meetings they came armed, ſome on horſeback, and ſome on foot, as was uſual among all the ancient colonies of the Celts in their public conſultations. *Brehons'* chairs, or mounts, which are ſuppoſed to have been appropriated to this purpoſe, are found in many parts of Ireland. Dr. Ledwich has given a view of one of them, ſeated on the hill of Kyle, in the Queen's county. Campion ſpeaks of ſuch lawyers in 1570, who, after the cuſtom of the country, determined and judged cauſes; to which Stanihurſt adds, that they were entirely unacquainted with the Engliſh, the canon, and civil law; that their determinations were founded on no ſolid rules, but on precedents ſanctioned by time and uſage; and that theſe were kept profound ſecrets, by which they acquired admiration, and maintained their influence. An old man, the principal brehon in the part now called Monaghan, is mentioned by ſir John Davies, attorney-general of Ireland in the reign of James I. (ſee his Tracts), as being ſummoned before the lord chancellor, himſelf, and ſome others, when on a tour through the north, in 1606; and on a ſolemn promiſe of its being returned to him, he produced a roll out of his boſom, written on both ſides in a fair Iriſh character, but worn and defaced with time and ill-keeping. Of the rules of the law by which the brehons determined cauſes, ſir John Davies delivers this opinion: “If we conſider the nature of the Iriſh cuſtoms, we ſhall find that the people which doth uſe them muſt of neceſſity be rebels to all good government, deſtroy the commonwealth wherein they live, and bring barbariſm and deſolation upon the richeſt and moſt fruitful land of the world. For, whereas by the juſt and honourable law of England, and by the laws of all other well governed kingdoms and commonweals, murder, man-ſlaughter, rape, robbery, and theft, are puniſhed with death; by the Iriſh cuſtom, or brehon law, the higheſt of theſe offences was puniſhed only by fine, which they called an “ericke.” He thus deſcribes the mode of impoſing it: “For offences and matters criminal, none was of ſo heinous a nature, that it was capital; for treaſon againſt the chief lord and murder, were fineable; the fine they called an “ericke,” which was aſſeſſed by the lord and his brehons. In caſe of treaſon, the lord had all the fine; in caſe of murder, the lord had one moiety, and the kindred of the party ſlain the other moiety; ſo as they never forfeited their poſſeſſions or their lands for any offence. Howbeit their lands were ſeized by the lords for their fines, until the ſame were levied thereupon, and then reſtored. Rape was fineable in like ſort; but theft deſerved praiſe and reward, if the ſtealth were brought into the country, becauſe the lord had a ſhare, and the country thereby became the richer. But the theft being committed in the country and carried out, if the thief were apprehended before his friend made offer of his fine, he was commonly puniſhed with death. But the lord, in that caſe, might take an “ericke,” if he would. The brehons, aſſiſted by certain ſcholars, who had learned many rules of the civil and canon law, gave judgment in all cauſes, and had the eleventh part of the thing adjudged for their fee; and the chief's lord marſhal did executions.” Having deſcribed the Iriſh cuſtoms of taniſtry and gavel-kind, he thus concludes: “Theſe are the principal rules and grounds of the brehon law, which the makers of the ſtatutes of Kilkenny did, not without cauſe, call a “lewd cuſtom;” for it was the cauſe of much lewdneſs and barbariſm. It gave countenance and encouragement to theft, rapine, and murder; it made all poſſeſſions uncertain; whereby it came to paſs, that there was no building of houſes and towns, nor education of children in learning or civility, no exerciſe of trades or handicrafts, no improvement or manuring of lands, no induſtry or virtue in uſe among them; but the people were bred in looſeneſs and idleneſs, which hath been the true cauſe of all the miſchiefs and miſeries in that kingdom.”

BREHON-*laws* denote the general maxims, or rules of law, obſerved by the brehons, and having the force of law throughout all the provinces of Ireland, previouſly to the ſettlement of the Engliſh.

Several fragments of the *leges brehonicæ* are ſtill extant in public and private libraries. The moſt complete collection is that belonging to the duke of Chandos, containing twenty-two ſheets and an half, cloſe written, full of abbreviated words, and not very legible. This collection, falling into the hands of ſir J. Sebright, was given by him to the univerſity of Dublin, and forms 28 volumes. Theſe laws reſemble thoſe of other ancient people, in the order of ſucceſſion called taniſtry, and in appointing fines for murder and other heinous crimes. From the reſemblance of ſome of them to thoſe of Aſiatic countries, general Vallancy has endeavoured to ſtrengthen his arguments in favour of the oriental origin of the Iriſh; whilſt Dr. Ledwich urges the ſimilarity of the ſame laws to the laws and cuſtoms of the ancient Germans and the northern tribes, in favour of the truth of Spelman's aſſertion, that the Iriſh are “Germanorum nepotes,” of German origin. Dr. Ledwich aſſerts, “that the Iriſh erics are plain tranſcripts of the Salic and other weregilds in Lindenbrog's German codes.” The reader who is deſirous of further ſatisfaction in this inquiry, will find moſt that has been ſaid reſpecting the origin of the brehons in Dr. Ledwich's “Antiquities of Ireland,” and in the “Collectanea de rebus Hibernicis,” and other works of general Vallancy. The latter gentleman has publiſhed a tranſlation of ſome parts of the code, in the 10th number of the “Collectanea.”

At the time of the conqueſt of Ireland by king Henry II. A.D. 1172. the Iriſh were governed by the brehon law; but the laws of England were then received and ſworn to by the Iriſh nation, aſſembled at the council of Liſmore. King John, in the 12th year of his reign, carried over with him into Ireland many able ſages of the law; and there by his letters patent, in right of the dominion of conqueſt, is ſaid to have ordained and eſtabliſhed, that Ireland ſhould be governed by the laws of England; which letters patent ſir Edward Coke (1 Inſt. 161.) apprehends to have been then confirmed in parliament. But to this ordinance many of the Iriſh were averſe from conforming, and ſtill adhered to their brehon law; ſo that both Henry III. (A. R. 30.) and Edward I. (A. R. 5.) were obliged to renew the injunction; and at length, in a parliament holden at Kilkenny, 40 Edward III. under Lionel duke of Clarence, the then lieutenant of Ireland, the brehon law was formally aboliſhed; it being unanimouſly declared to be indeed no law, but a lewd cuſtom crept in of later times; and it was enacted, that no Engliſh ſubject ſhall ſubmit to a trial by this law, on the penalty of high treaſon. And yet, even in the reign of queen Elizabeth, the wild natives ſtill preſerved their brehon law, which is deſcribed by Edm. Spenſer (State of Ireland), to have been "a rule of right unwritten, but delivered by tradition from one to another, in which oftentimes there appeared a great ſhew of equity in determining the right between party and party, but in many things repugnant quite both to God's laws and man's." As to the prevalence of this law among the Iriſh, this writer further obſerves, that "dwelling as they do, whole nations and ſepts of the Iriſh together, without any Engliſhman amongſt them, they may do what they liſt, and compound, or altogether conceal, amongſt themſelves, their own crimes." Some writers have ſpoken of theſe laws, as if they were peculiar to the Iriſh, and an evidence of their barbarity; not duly conſidering, that when they were eſtabliſhed, many other nations had ſimilar laws; and that if the Engliſh had taken proper pains to introduce their improved inſtitutions, and to ſettle the country under any kind of regular government, they would, in all probability, have been able, though not without difficulty, to effect it. The civilization and improvement of Ireland ſeem, however, to have engaged little attention till the reign of James I.; who "proceeded in this work," ſays Hume (Hiſtory of Great Britain, vol. vi. p. 58.), "by a ſteady, regular, and well-concerted plan; and in the ſpace of nine years, according to ſir John Davies, he made greater advances towards the reformation of that kingdom, than had been made in the 440 years which had elapſed ſince the conqueſt was firſt attempted." The legiſlative union, reſerved for the reign of George III. affords a proſpect, under regulations, preſcribed by wiſe, moderate, and ſalutary counſels, and enforced by ſuitable ſanctions, of further improvements, conducive to the remedy of the peculiar diſorders of Ireland, and to the promotion of the real intereſts of both countries. See UNION.

BREIDDYN-HILL, in *Geography*, lies on the border of Shropſhire, and occupies a large ſpace between Montgomery and the vale of Severn. It conſiſts principally of a coarſe argillaceous ſchiſtus, blended in ſome places with ſmall rhomboidal cryſtals and a calcareous ſpar. The ſummit of this hill, near the pillar erected in honour of admiral Rodney, affords a very extenſive and delightful proſpect, extending over the vales of the Severn, Fyrnwy, and Taned, as far as Plinlimmon, Cader-idris, and Aran-ben-llyn, whoſe pointed tops agreeably diverſify the line of the horizon. This was a favourite ſituation of Llewelyn the Great, about the year 1240.

BREIDEMBACH, a town of France, in the department of the Moſelle, 5 miles north of Bitche.

BREISCH, a town of Germany, in the circle of Upper Saxony, and duchy of Croſſen; 8 miles S. of Croſſen.

BREITENBACH, a town of Germany, in the circle of Upper Saxony, and county of Schwartzburg, ſeated on a ſmall river of the ſame name, in the midſt of woods, fields, hills, and vallies, with two churches and 400 houſes; 14 miles S. of Erfurt. On the river, in its vicinity, is a mine yielding ſulphur, alum, and vitriol.

BREITENBURG, a lordſhip and parochial village of Germany, in the duchy of Holſtein, and circle of Itzehoe, ſeated on the river Stor, two miles S. of Itzehoe.

BREITENECK, a town of Germany, in the circle of Bavaria, which gives name to a lordſhip, ſituate in the upper palatinate, and contributing to each Roman month 20 florins, and to each chamber term 35 rix dollars. The fief eſtates of this ſeignory belong to the elector of Bavaria, and the allodial to the counts of Montfort, in which is the town, which has a citadel, and is diſtant 3 miles N.E. from Dietfurt.

BREITHORN, and BREITLAUINEN, peaks of the Jungfrau, or Virgin, in the canton of Bern, in Swiſſerland.

BREITKOPF, JOHN GOTTLOB IMMANUEL, in *Biography*, an ingenious printer, letter-founder, and bookſeller of Leipſic, was born in that city, Nov. 23, 1719. In early life he manifeſted a ſtrong attachment to the ſciences, and acquired a conſiderable acquaintance with the languages, particularly the modern ones. When he joined his father in buſineſs, he commenced the ſtudy of mathematics; and after the peruſal of a work of Albert Durer, in which the ſhape of the letters is deduced from mathematical principles, according to which the firſt printing types were formed, he made the improvement of the art of printing a principal object of his attention. Accordingly, he began with delineating the form of types mathematically; and he endeavoured to faſhion them according to the moſt beautiful models, which he could procure by an extenſive reſearch among the Engliſh, French, Dutch, Flemiſh, and Italians. By his ingenuity and diligence, employed in this way, he obtained new and improved figures of characters, and had them caſt in matrices cut for the purpoſe. Thus his printing-office and letter-foundery acquired very high reputation, as being the moſt complete in the world, not excepting thoſe of the ſociety "de propaganda" at Rome, and containing punches for 400 alphabets, with an equal number of matrices, and a very copious aſſortment of ornaments. Whilſt he was aſſiduous in proſecuting every mode of improvement, he indulged no mean jealouſy in contemplating the inventions of others in a ſimilar way; but, on the contrary, he employed the types of Baſkerville, and duly appreciated the value of thoſe of Didot. Breitkopf found by his various and extenſive reſearches, that engraving in wood had given birth to printing; and that the latter had contributed to the improvement of engraving. He was thus led to transfer ſome particulars, in the province of the engraver, to that of the printer; and with this view he made his firſt experiment on muſical notes, and contrived to repreſent by the typographic art, all the marks and lines which occur in the modern muſic, with no leſs accuracy than that with which they are repreſented by engraving. Recurring to mathematical principles, he ſucceeded, in 1755, in bringing this art to its preſent degree of perfection. He proceeded to print maps with moveable types, and in 1776, accompliſhed, after encountering many difficulties, the object at which he aimed. This, however, he conſidered as a matter of mere curioſity; and ſuch was alſo another attempt, which was that of copying portraits by moveable types. In 1793, he directed his attention to another object of greater utility; which had long been conſidered as impracticable, and on which large ſums had been expended without avail. This was that of printing, with moveable types, the Chineſe characters, which are, in general, cut in pieces of wood, ſo that a whole houſe is often neceſſary to contain the blocks employed for a ſingle book. After ſome trials he at length ſucceeded; and having ſent ſpecimens to the pope, he returned him thanks in the politeſt manner by cardinal Borgia. His next attempt was that of printing mathematical figures in the ſame manner; but though he ſurmounted all obſtacles by his perſevering exertions, his numerous engagements prevented the completion of his deſign. Breitkopf directed his attention to the improvement of type-metal, particularly by giving it that degree of hardneſs, which has been a deſideratum in founderies of this kind. He diſcovered likewiſe, a little before his death, which happened on the 28th of January, 1794, a new method of facilitating the proceſs of melting and caſting; but this he concealed for the benefit of his heirs. From his foundery, which employed 12 furnaces, and 39 workmen, types were ſent to Ruſſia, Sweden, Poland, and even America. He introduced alſo ſeveral improvements in his preſſes, which were freely preſented to the inſpection of thoſe who viſited his printing-houſe.

Beſides his mechanical inventions, which occupied much of his time and attention, his reſearches into the origin and progreſs of the art of printing were very conſiderable, and furniſhed the materials of a hiſtory, which he left behind in manuſcript. Of this larger work, he publiſhed, in 1774, an account, in a ſmall treatiſe, containing, among other particulars, a refutation of the opinion of thoſe who pretend that printing was firſt employed at Florence, Wirtzburg, or Antwerp. In 1784, he publiſhed the firſt part of a work, entitled "An Attempt to illuſtrate the origin of playing-cards, the introduction of paper made from linen, and the invention of engraving on wood in Europe." The latter part of this work was finiſhed, but not publiſhed, before his death. His laſt publication was a ſmall "Treatiſe on Bibliography, &c." publiſhed in 1793, and containing extracts from his larger works, with his reaſons for retaining the preſent German characters, and a refutation of ſome aſſertions reſpecting typography. Breitkopf was diſtinguiſhed by his aſſiduity and perſeverance; and devoted his whole life to ſtudy and uſeful employment, with the interruption of only five or ſix hours in the 24, which he allowed for ſleep. Schlightegroll's Necrology. Gen. Biog.

BREITZENHEIM, in *Geography*, a lordſhip of Germany, in the circle of the Lower Rhine, on the Nahe, near the town of Creutznach, and deriving its name from an old caſtle now in ruins. In the matricula of the empire it is aſſeſſed at ſix florins, in that of the circle at 8, and pays to the chamber of Wetzlar 3 rix-dollars, 13½ kreutzers. Its inhabitants are partly Roman catholics, and partly Lutherans.

BRELADE'S, Saint, a bay on the ſouth coaſt of the iſland of Jerſey, which takes its name from a village, 5 miles W. from St. Helier.

BRELANDS, a town of Norway, 7 miles W.N.W of Chriſtianſand.

BRELLES, a town of France, in the department of Finiſterre, and diſtrict of Breſt; 3½ leagues N. W. of Breſt.

BREM. See Prem.

BREMA, a town of Italy, in the Milaneſe, near the conflux of the Seſſia and Po, on the frontiers of Montſerrat; 28 miles W. of Pavia.

BREMBO, a river of Italy, which riſes on the frontiers of the Valteline, and diſcharges itſelf into the Adda, about 8 miles from Bergamo.

BREME, a cape which forms the ſouth-eaſtern ſide of the mouth of Oroonoko river, oppoſite to cape Araya, in South America.

BREMEN, a duchy of Germany, in the circle of Lower Saxony, bounded on the north by the German ſea and the Elbe, on the eaſt by Holſtein, Luneburg, and Verden, on the ſouth by Verden, Hoya, and Diepholz, and on the weſt by the Weſer, Oldenburg, and the German ocean. Its greateſt length is about 60 miles, and breadth about 40. The face of the country is level, and it is almoſt ſurrounded by the Elbe and the Weſer. The air is cold; but the country is fertile and well-peopled. The Elbe, Oſte, and Weſer, are bordered with very rich marſh lands; thoſe on the Elbe produce plenty of grain and fruit; thoſe on the Oſte are alſo very productive of grain, and yield a clay for veſſels, and a kind of free ſtone; the ſoil on the borders of the Weſer, beſides being fertile in grain, ſupports likewiſe large breeds of cattle. Between Bremen and Stade, the country is either a barren ſand, or a moraſs. In order to guard the lands againſt the inundations of the rivers, dykes and dams have been erected, and are kept in repair at a great expence; and yet in winter they are frequently ſo much overflowed, that the inhabitants are obliged to make uſe of long poles to leap over the ditches and other waters, in paſſing from one place to another; and the inundations of the Weſer in particular are ſuch, that cities and villages appear like ſo many iſlands in the midſt of a ſea. The champaign country has, in ſome parts, good corn land; the heaths are covered with ſheep; and the culture of bees is an object of particular attention. On the moors are dug great quantities of turf, which is exported to Bremen and Hamburg, and uſed in brick-kilns, the glaſs-houſe, and as fuel in private houſes. This country yields likewiſe much flax. The inhabitants likewiſe, by their ſituation between navigable rivers, have been induced to turn their thoughts to trade. They have the reputation of being good ſoldiers; but on account of the marſhes and inundations of the country, they are ſubject to agues and fevers, and are hence led to indulge the habit of drinking much brandy. Reiſbeck deſcribes them as yellow-ſkinned, ſoft-fleſhed, and full of wrinkles; and their ſmall round figures form a ſtriking contraſt with the tall Germans of the ſouthern parts. Few roſy cheeks are obſerved either among men or women.

The duchy of Bremen was formed out of an archbiſhopric, which was originally a biſhopric, founded by the emperor Charles the Great in 787 or 788, of which Willehad, an Engliſhman, was the firſt biſhop. In 858, the ſee was incorporated with Hamburg, as the archbiſhopric of the northern nations; and the archbiſhops gradually got into their hands the counties within the dioceſe of Bremen, and acquired the ſovereignty over it. But after the death of the archbiſhop Roden in 1511, the chapter elected archbiſhops out of princely families; in 1644, the Swedes made themſelves maſters of Bremen; and in 1648, at the peace of Weſtphalia, it became a duchy and fief of the empire. In 1675, the duke of Brunſwick and Luneburg, in conjunction with the biſhop of Munſter and ſome Daniſh forces, overran this duchy as far as Stade, which place was taken in the following year by the Luneburg troops. The conquerors firſt thought of ſharing the duchies of Bremen and Verden between them; but Sweden kept the whole to herſelf, except ſome ſmall part of it, which was reſtored to the dukes of Brunſwick and Luneburg, at the peace of Nimeguen in 1679. During the northern war, the Danes, in 1712, reduced the duchies of Bremen and Verden; and in 1715, Frederick IV. transferred them to the elector of Brunſwick, in lieu of the ſum of 700,000 rix-dollars. In 1719, by the peace of Stockholm, they were ceded by the crown of Sweden for ever to the elector of Brunſwick, together with all their rights and appurtenances, in the ſame manner as they had been granted to Sweden by the treaty of Oſnabruck; for which renunciation the elector paid Sweden a million of rix-dollars. In 1732 the elector obtained the emperor's inveſtiture for Bremen and Verden. The elector of Brunſwick, as duke of Bremen, poſſeſſes in the college of princes, the ſixth ſeat on the bench of temporal princes, and in the diet of Lower Saxony, excluſively of a vote, is alternately director with Magdeburg. The aſſeſſment of the duchy to a Roman month, is 24 horſe and 100 foot, or 688 florins, which is alſo its contingent to the matricula of the circle; and to the imperial chamber at Wetzlar, it pays 108 rix-dollars, 22½ kreutzers. The duchies of Bremen and Verden are jointly under the following colleges; viz. the regency, conſiſting of three counſellors, and ſubordinate to the privy-council at Hanover; and the chancery, compoſed of the three counſellors of regency, a director, and certain juſticiary counſellors, and taking cognizance of criminal and executive caſes. In the high court of juſtice ſit all the members of the chancery, with ſeven aſſeſſors, nominated by the ſtates of each duchy; viz. three by the Bremen nobility, two by Stade and Buxtehude, one by the nobility of Verden, and one by the town. The chief branches of the ſovereign's revenue are thoſe of the demeſne bailiwicks, diſtricts, and juriſdictions, with the regalia; certain payments ariſing from the ſubjects, as exciſe, and the monies for the maintenance of the high court of appeal at Zell, for furniſhing forage, &c.

In the whole duchy there are but two cities, viz. Bremen and Stade, and 12 market towns. The ſtates of Bremen conſiſt of the nobility, and the deputies of the towns of Stade and Buxtehude, whoſe privileges are the ſame with thoſe of Verden. An aſſembly of all the ſtates, or a diet, cannot be held without the knowledge and conſent of the regency; but the nobility may aſſemble twice a-year at Baſdal, without giving any previous notice to the regency. All the inhabitants, except thoſe who belong to the free ſtates, and who have a right to ſit and vote in the diets, are taxable; and the number of taxable hearths is 22,276. The eſtabliſhed religion is Lutheraniſm; the number of Lutheran churches is 118, under the ſuperintendency of more than this number of paſtors; and the ſupreme inſpection of the churches of this duchy and of the principality of Verden is veſted in a general ſuperintendent. The Calviniſts form ſeven congregations, with a like number of paſtors. The doctrine and inſtitutions of the reformed church were introduced into the republic of Bremen in the 16th century. An attempt for this purpoſe was made ſo early as the year 1556, by Albert Hardenberg, the intimate friend of Melancthon; but it did not ſucceed till towards the cloſe of this century, when no meaſures, either of prudence or force, were ſufficient to prevent the church of Bremen from modelling its faith, worſhip, and government, after that of Geneva. The manufactures of this country, excluſively of cordage and linen, are thoſe of cloth, flannel, kerſeys, and other woollen ſtuffs, at Scharenbeck. Ammund, in the diſtrict of Leſſum, has a ſugar refinery, and a porcelain manufacture. The principal rivers of the duchy, beſides the Elbe and the Weſer, are the Oſte, the Schwinge, the Luhe or Aua, the Geeſte, and the Leſum.

BREMEN, an imperial city of Germany, and capital of the duchy of the ſame name. This city lies on the banks of the Weſer, which divides it into the Old and New town; joined by a large bridge, and another ſmaller one over a little branch of the ſame river. The ſtreets of the Old town are very narrow; the houſes, which are rarely more than two ſtories high, are, in general, old faſhioned and inconvenient, nor are the more modern built with great taſte. The exchange, however, the Lutheran orphan-houſe, and a few other edifices, are in a much better ſtyle. The houſes, both of the Old and New town, which are numbered, incluſive of the ſuburbs, are 5105; and Hoeck eſtimates the number of inhabitants at 40,000. The Old town is the largeſt and moſt populous, and is divided into four pariſhes. Moſt of the magiſtrates and principal merchants have their winter habitations in this town; but their gardens and ſummer reſidences are in the other. In the Old town ſtands the cathedral, which is an ancient Gothic ſtructure, and which belongs to the Lutherans. Under its choir is the "Bley-keller," or lead-cellar, ſo called becauſe the lead, with which this building is covered, was caſt there. It has the ſingular property of preſerving from putrefaction the dead bodies which are put in it, and thus reſembles the vaults of the Cordeliers and Jacobins in Toulouſe. This city is governed by a council, that conſiſts of four burgomaſters, who preſide by turns, each for ſix months, two ſyndics, and twenty-four ſenators, ſome of whom are juriſts, and the reſt merchants. The whole body is diſtributed into four courts, each conſiſting of a burgomaſter and ſix ſenators. Theſe magiſtrates elect their new colleagues, without conſulting the citizens; but none can be choſen who are nearly related to any already in office. They may make any arrangement they think fit, with reſpect to the police; but they cannot enact any new law, nor alter any part of the conſtitution, nor impoſe any tax, without aſſembling the citizens; nevertheleſs, no reſolutions of theſe latter are of any effect, unleſs approved by the council. The management of all public money is committed to deputies, appointed by the citizens, who act under the orders of the council, and muſt lay their accounts before their conſtituents. Their taxes are moderate; they who poſſeſs property exceeding 3000 dollars, pay a ſcot or tax on what they are worth, in which each is left to eſtimate his own poſſeſſions, and to aſcertain the ſum which he thinks he ought to pay. In doing this, the citizens are, in general, ſo conſcientious and public-ſpirited, that moſt of them really contribute more than could ſtrictly be demanded from them; but they are well ſatisfied that the revenues of their little ſtate are wiſely and frugally adminiſtered; and not waſted in ſupplying the extravagances of princes, nor in diffuſing corruption among the people and their repreſentatives. The police of this city, it is ſaid, is excellent; and not a beggar is to be ſeen in or near it; the magiſtrates taking care to furniſh the poor with an opportunity of gaining a ſubſiſtence by induſtry. To the Jews, however, they are leſs tolerant and equitable; for they will not permit any of them to reſide in the city, nor even to enter it, except during the fair. The predominant church at Bremen is the reformed, or Calviniſt. Of this perſuaſion are the magiſtrates; though the Lutherans are not, by any law, excluded from the regency. Formerly they were ſometimes choſen into theſe offices; but ſince the Calviniſts have had undiſturbed poſſeſſion of the government, they have taken take to keep out all that are not of their own ſect. This city was formerly an archbiſhopric; but ſo early as the 13th century, frequent diſputes occurred between it and the biſhops and chapter. Frederic, the laſt archbiſhop of Bremen, was frequently at variance with the city, oppoſing its appearance at the diet, though formally ſummoned to it; and in 1639 he conferred the cathedral on the Lutherans, which had been ſhut up ever ſince the year 1568. But in 1640, Bremen was ſummoned to the diet, and allowed a ſeat and vote on the Rheniſh bench in the college of Imperial cities. In 1648, at the peace of Weſtphalia, both the city, its dependencies, and vaſſals were confirmed in their ſtate-freedom, rights, and privileges, eccleſiaſtical as well as civil; and though diſputes afterwards aroſe, the houſe of Brunſwick and Luneburg, in 1731, voluntarily granted to the city that freedom which had been conteſted, and all diſputes were brought to an amicable termination. In 1757, the French got poſſeſſion of this city; but in the following year haſtily abandoned it and were ſucceeded by a body of Hanoverians. In the diet of the empire it poſſeſſes the eighth ſeat on the Rheniſh bench in the college of Imperial cities. Its matricular aſſeſſment is 320 florins, and its contingent to the chamber at Wetzlar 148 rix-dollars, 67½ kreutzers. The king of Great Britain, as elector of Brunſwick, now claims all the authority which the prelate and chapter formerly enjoyed. He appoints the paſtor of the cathedral, which belongs to the Lutherans; who, as ſuch, are immediately dependent on the electoral government.

Bremen is ſupplied with water from the Weſer by means of a wheel turned by the ſtream, which raiſes it into a reſervoir, whence it is conveyed to the ſeveral houſes by ſubterranean conduits, at a very ſmall expence. On the building which contains this machine is the following inſcription:

"Volve Pater, Civi tradam tua dona, Viſurgis!"

Proviſions of all kinds are much cheaper at Bremen than at Hamburg, or even in Hanover; and yet neither the commerce nor the wealth of Bremen is inferior, in proportion to its ſize, to thoſe of the other Hanſe towns; but the expenſive luxury, which prevails in many trading places is unknown here, and the manners of the inhabitants are plain and frugal; of which one great cauſe is, that the town is very little viſited by ſtrangers. In this city there are many manufactures, excluſive of a very conſiderable trade. This trade conſiſts in iron, flax, hemp, and linen, exported to England, France, Spain, and Portugal, and in returns of various other articles with which it ſupplies Weſtphalia, and the countries about Hanover. It is alſo a conſiderable gainer by its fiſheries, and particularly the trade of blubber with the ſouth of Germany. Bremen is famous for Rheniſh wine; the ſale of which is monopolized by the city, and it can be bought only at the public vaults. In one of theſe, as we are informed by baron Knigge in his "Letters written on a Journey from Lorraine to Lower Saxony," publiſhed in 1793, wine is kept ſo very old, that if, to the prime coſt, the accumulating intereſt of the money, the filling up, and other expences, were added, a bottle of it would amount to above a thouſand dollars; but the baron does not vouch for the truth of this report. This precious liquor is only uſed by the magiſtrates on rare and grand occaſions, and it is ſometimes adminiſtered, by order of the preſident, to the ſick.

The character of the inhabitants of Bremen, ſays this author, has been unjuſtly treated with contempt by travellers; and they have been repreſented as a plodding, ſtupid people, without genius or taſte. He obſerves, on the contrary, that though the citizens of Bremen have not that exquiſite taſte for the comparatively trifling arts of luxury and amuſement, nor that ſtudied poliſh of manners which reſult from an habitual want of more ſerious employment, and from frequent intercourſe with foreigners, whoſe ſole object is pleaſure; they have in general good natural abilities, improved by a judicious education; and with reſpect to uſeful knowledge, whether literary or ſcientific, more information may be obtained by converſation in Bremen, than in many places in which more pompous pretenſions are ſet forth. They are obliging, frank, and hoſpitable; and their numerous and excellent inſtitutions for the education of orphans, and for other charitable purpoſes, which are ſupported by voluntary contributions, reflect honour on their generoſity and public ſpirit. This city has lately afforded M. Olbers an opportunity of forming an aſſociation of opulent merchants, who have eſtabliſhed a muſeum, a phyſical cabinet, and an obſervatory, with profeſſors, among whom M. Olbers, the diſcoverer of the new planet called PALLAS, is the profeſſor of aſtronomy. Bremen is ſituated 52 miles S. W. of Hamburg. N. lat. 53° 30′. E. long. 9°.

BREMENIUM, in *Ancient Geography*, a town from which Antoninus begins his firſt journey in Britain. It was one of the towns belonging to the Otadeni. Dr. Gale places it at Brampton, on the river Bremiſh in Northumberland; others place it at Brampton in Cumberland; but the altar that has been found at Riecheſter, or Rucheſter, near the head of the river Read in Northumberland, with the name Bremenium upon it, demonſtrates that this was its real ſituation. Baxter (Gloſs. p. 46.) derives its name from the Britiſh words Bre man iii, which ſignify a town upon a hill near a river, which is agreeable both to its ſituation and preſent appellation. Horſley, Brit. Rom. p. 243.

BREMERVORDE, in *Geography*, a large village and bailiwick of Germany, in the duchy of Bremen, in which was formerly the palace of the archbiſhop. It has municipal privileges and two burgomaſters; 30 miles N. of Bremen, and 10 S. W. of Stade. N. lat. 53° 58′. E. long. 8° 35′.

BREMETONACIS, in *Ancient Geography*, a place of Britain, in Antonine's tenth rout, from Glanoventa to Mediolanum, between Galacum and Coccium, or Appleby and Ribcheſter; ſuppoſed to be Overborough.

BREMGARTEN, in *Geography*, a town of Swiſſerland, and one of the free bailliages, formerly ſubject to the cantons of Zuric, Bern, and Glarus, from the year 1712, and united by the French diviſion of 1798, to Baden, which forms a part of the department of Argovie or ARGOW, according to the French conſtitution of 1801. The inhabitants of this bailliage are Roman catholics. Its regency, previous to the French conqueſt, conſiſted of the little and great council; the former being compoſed of 12 members, and the latter of 40. The town is ſeated on the Reuſs, about 8 miles S. of Baden; and has a wooden bridge over the river, forming a communication between the cantons of Zuric and Bern. It is divided into the Upper and the Lower town; the former ſituate on an eminence, and the latter on the bank of the river. N. lat. 47° 14′. E. long. 8° 12′.

BREMIS, a town of Swiſſerland, in the Valais, ſituate ſouth of the Rhine and near it; 4 miles E. S. E. of Sion. N. lat. 46° 16′. E. long. 7° 16′.

BREMONT LA MOTTE, a town of France, in the department of Puy-de-Dôme, 10 miles from Clermont.

BREMPT, a ſmall town of Germany, in the electorate of Treves, ſeated on the Moſelle.

BRENAS, a range of mountains in the ſouthern part of Africa, towards the Cape of Good Hope, which, according to Barrow, in his "Travels," 1801, p. 298, paſſes N. W. and S. E. about lat. 32° or 33°. This great range, ſays Paterſon, p. 125, runs E. and W. at the diſtance of about 4 days' journey from the mouth of the Orange river; probably the inmoſt terrace of the Table land of ſouthern Africa, which ſeems to be pervaded by the Jagas, a wandering nation like the Tartars.

BRENCKHAUSEN, a town of Germany, in the circle of Weſtphalia, belonging to the abbey of Corvey, 4 miles N. W. of Corvey.

BRENDOLO, a ſmall ſea-port town in the canals of Venice, between Venice and the mouth of the Po.

BRENET, a pictureſque lake of Swiſſerland, in the valley of the lake of Joux, upon that part of the Jura chain of mountains called Mont Joux, in the bailliage of Roman Motier. From this ſmall lake deſcends a ſtream, which is loſt in a hollow gulph called "L'Entonnoir," or the funnel, in which ſeveral mills are turned by the force of the current. About 2 miles further, on the other ſide of the mountain, the river Orbe burſts forth, and is probably produced by the ſtream here ingulphed.

BRENETS, LES, a village and mayoralty of Swiſſerland, in the Valais, containing about 1000 inhabitants; 10 miles N. W. of Neuchatel. It is ſeated near the river Dou. N. lat. 47° 5′. E. long. 6° 27′.

BRENNA, Bregno, or Blenzo, Val di, one of the bailliages of Swiſſerland, which formerly belonged to the cantons of Uric, Schweitz, and Underwalden, but referred by the French conſtitution of 1801, to the 17th department. It lies N. of the Bellinzone and Riviera, and between Val Leventina and the river Teſſino, on the weſt, and Val Calanca on the eaſt. It is about 7 leagues long, and half a league broad. Its principal reſources are its paſtures and its cheſnuts. See Bellinzone.

BRENNAGE, *Brennagium*, in *Middle Age Writers*, a kind of tribute paid, in lieu of bran, or bran itſelf, which the tenants were obliged to furniſh for ſupport of the lord's hounds. The word is alſo written *brenage*, *brenagium*, and *brenaige*, *brenagium*, *brenaticum*, and *brennaticum*. Du-Cange Lat. Gloſſ.

BRENNAU, in *Geography*, a town of Lower Bavaria, ſituate on the river Ilum, meanly built and ſinking into decay; 92 miles from Munich, and 23 miles from Paſſau.

BRENNE, the name, before the revolution, of a ſmall diſtrict of France, that lies between Berri, Tourraine, and Poitou, and of which the chief town was Mezzieres; forming now a part of the department of the Indre.

Brenne, a town of France. See Braine.

BRENNER, Henry, in *Biography*, a learned Swede, was born 1669, in the pariſh of Kronoby in Weſt Bothnia. Having finiſhed his education at Upſal, he accompanied, in 1697, Lewis Fabricius, his Swediſh majeſty's ambaſſador, to Perſia; and as he had acquired, in this journey, an extenſive knowledge of the eaſtern languages, he remained in that country for the purpoſe of aſſiſting the Perſian envoy, Sarug Chan Beg, in his miſſion to Sweden. On their way through Ruſſia in 1700, a war having taken place between Charles XII. and Peter I. Brenner was arreſted at Moſcow, under a ſuſpicion of ſome political intrigue, and confined in priſon till the peace of Nyſtad. This journey, however, produced a learned epiſtolary correſpondence with Elias Brenner, Gripenhielm, Gavelius, Benzelier, and Lilienſtedt, part of which has been publiſhed; and the hiſtory of Moſes Armenus Choronenſis, under the title of "Epitome Commentariorum Moyſes Armeni de origine et regibus Armenorum et Parthorum, cum notis et obſervationibus," Stockholm, 1723. The Armenian original of this work, written about the middle of the 15th century, in the Armenian language, was printed at Amſterdam in 1695; and another tranſlation of it was printed at London in 1736 by the ſons of the celebrated Whiſton. In 1722 Brenner communicated to the royal college of the chancery his obſervations on the cauſe of the expedition undertaken by Peter I. againſt the Perſians; of which Juſtus Rabner has availed himſelf in his hiſtory of that prince. In the courſe of theſe obſervations, he announced his intention of giving an accurate deſcription of the Caſpian ſea, and of the river Daxia in the country of the Nezetzu Tartars, which he ſuppoſed to be the ancient Jaxartes; but a copy of it was inſerted without acknowledgment, in the "Memorabilia Orientalis Partis Aſiæ." Whilſt Brenner occupied the office of librarian to the royal library at Stockolm, to which he was appointed in 1722, he enriched it with more than 30 volumes of MSS. which treat of the eccleſiaſtical hiſtory of Sweden. But his health having been impaired by his long confinement in Ruſſia, he died in 1732. Gen. Biog.

Brenner, in *Geography*, the modern denomination of the Rhætian Alps, which paſs through the Tyrol, between Inſpruck and Storzing, over which the high road is extended through an interval of 4 leagues. Theſe mountains rival the grand Alps of Swiſſerland in numerous glaciers, and, like other grand chains, preſent exterior barriers; that on the north being diſtinguiſhed by the name of Spitz, and that on the ſouth by the appellation of Vedretta. The primitive or greateſt elevations ariſe to the north of Storzing, whence ſtreams proceed towards the river Inn on the north, and to the Adige on the ſouth; and the Eiſac deſcends, as a precipitous torrent, amidſt maſſes of granite, petroſilex, and marble, while the avalanches become dangerous to travellers. The naked and rugged peaks of the mounts Lorenzen, Fartſchel, and Tſchafatſch, raiſe their towering heads towards the N. W., and on the S. E. are thoſe of Glander, Schloſs, Pragles, and Pallanſer. Their ſummits are entirely bare, and ſeem to be compoſed of granite. The glacier moſt eaſy of acceſs is that of Stuben, the centre of which preſents many Alpine plants; and the granite and porphyry are frequently covered with calcareous ſtone. The glacier of Stuben is 4692 feet above the level of the ſea, and exhibits the uſual phenomena of ſuch ſcenes, with beautiful pyramids of azure, which in ſunſhine reflect a blaze of light. The mountain, particularly called Brenner, is, according to Beaumont (ubi infra) only 5109 feet above the level of the ſea. The town of Steinach is placed nearly in the centre of the Tyroleſe chain; towards the eaſt, from the midſt of a long courſe of glaciers running N. E. and S. W. riſes the grand mountain Gefrorn, a maſs of granite covered with ſnow, and one of the higheſt peaks of the Rhætian Alps; on the weſt is Habiſchſpiz, of ſmaller height; but to the S. W. is Tributaan, another ſtupendous peak of the great Brenner chain. Bock-kogo (which ſee) is another. The Brenner, or burning hill, ſays Beaumont, is ſo called on account of the frequent thunder-ſtorms. Beaumont's Rhætian Alps, Lond. 1792. Pinkerton's Geog. vol. i. p. 362, &c. See Alps, and Tyrol.

BRENNING. See Burning.

BRENNKIRCHEN, in *Geography*, a ſmall town of Lower Auſtria, on the frontiers of Hungary, not far from the Danube.

BRENO, a town of Italy, in the Breſſano, ſeated near the Oglio, between Bormio and Breſcia; 32 miles N. of Breſcia.

BRENOD, a town of France, in the department of the Ain, and chief place of a canton, in the diſtrict of Nantua; 5 miles S. of Nantua. The town contains 879, and the canton 6959 inhabitants: the territory includes 215 kiliometres and 11 communes.

BRENSCHEN, or Breunschen, a town of Germany, in the circle of the Lower Rhine, and electorate of Mentz; 7 miles S. of Militenberg.

BRENT, Miss, in *Biography*, afterwards Mrs. Pinto, the firſt ſinger who performed the part of Mandane in Dr. Arne's Artaxerxes. In her bravura ſinging ſhe had conſiderable merit: her execution was neat, diſtinct, rapid, and unrivalled at the time (1763); but has been greatly ſurpaſſed by ſubſequent female ſingers. This performer died in 1802, oppreſſed by age and indigence. Her hiſtory, if detailed, might furniſh a uſeful leſſon to female favourites of the public, poſſeſſed of greater vocal powers than human prudence.

Brent, in *Geography*, a river of England, which runs into the Thames at Brentford in Middleſex.

BRENTA, a river which has its ſource in the Tyrol, about 7 miles E. from Trent, paſſes by Padua, and runs into the Adriatic, a little to the ſouth of Venice.

Brenta, in *Ornithology*. See Branta.

BRENTFORD, in *Geography*, a market-town of Middleſex, England, ſtands on the northern banks of the river Thames, at the diſtance of ſeven miles W. from London. This place is particularly diſtinguiſhed in the page of hiſtory as the ſcene of warm contention, in the ſtrongly conteſted elections for the county of Middleſex. It derives its name from a rivulet called Brent, which paſſes through it in its courſe from Hendon to the Thames. The town is divided into two parts called New and Old Brentford, and belongs to two diſtinct pariſhes: the former being moſtly within the boundary of Hanwell pariſh; whilſt the latter is ſituated in that of Great Ealing, to which village its chapel is ſubordinate. This is a modern ſtructure, and was rebuilt in 1764. Excluſive of continual paſſage of travellers through this town, it derives conſiderable profits from the different mills and manufactures eſtabliſhed here. Large quantities of malt, corn, flour, pottery, bricks, and tiles, are annually ſent hence to the metropolis. Here are a weekly market on Tueſdays, and two annual fairs for ſwine, ſheep, &c. The town is compoſed of one very long ſtreet, occupying the ſides of the great weſtern road, and its houſes are moſtly inhabited by ſhop-keepers and tradeſmen. In 1801, the population amounted to 1443, and the houſes to 287.

In the civil wars between Charles I. and his ſubjects, this town was rendered a ſcene of conflict and ſlaughter. The king, after defeating the rebels at Edge-hill, marched his forces to Brentford, where he was oppoſed by thoſe of the parliament. A battle enſued, and the latter were vanquiſhed, when their captain was killed, and above 500 were taken priſoners. The earl of Forth, having greatly ſignalized himſelf in this engagement, was firſt made general of the king's forces, and afterwards created earl of Brentford; which title became extinct at his death in 1651.

About one mile Weſt of Brentford ſtands Sion-houſe, a ſtately ancient manſion of the dukes of Northumberland. It takes its name from a monaſtery founded here by Henry V. in 1414. Edward VI. gave it to his uncle the protector, Edward Seymour, duke of Somerſet, who, about 1547, began to build a magnificent ſtructure here; but being afterwards executed for felony, this property was confiſcated. Paſſing through different proprietors, James II. at laſt ſettled it for ever on the Northumberland family. The houſe ſtands in a ſpacious park on the bank of the Thames, and is compoſed of a large ſquare with towers at the corners, and an open court in the centre. It is built of white ſtone, and embattled all round.

On the oppoſite banks of the river are the beautiful royal gardens of Kew. They were begun by the late prince of Wales, afterwards much improved by the dowager princeſs, and completed under the direction of his preſent majeſty. This monarch has alſo commenced the building of a magnificent caſtellated palace, under the ſuperintendence of Mr. James Wyatt, architect. See Kew, et ſeq. Lyſon's Environs of London, vol. ii. Gough's edition of Camden's Britannia, vol. ii.

BRENTIUS, or Brentzen, John, in *Biography*, one of the earlieſt Lutheran divines, was born at Wil, in Suabia, in 1499; and having purſued his ſtudies with great reputation at Heidelberg, he obtained a canonry of Wittenberg, and took holy orders. Although, at an early period of the reformation, he became a convert to the opinions of Luther, and taught them publicly, he retained a great part of the popiſh doctrine of the real preſence, and attempted to explain and defend it by the notion of the ubiquity of Chriſt ſince his aſcenſion, whence the appellation of "Ubiquitarians" has been applied to a claſs of Lutherans. On the ſubject of baptiſm he had alſo peculiar notions, and he maintained, in the extreme, Luther's opinion concerning juſtification. In the aſſemblies of Worms and Ratiſbon, he diſtinguiſhed himſelf as an ardent diſputant; and he was charged with promoting the religious war of 1546, which rendered him particularly obnoxious to Charles V. After the death of Luther, he aſſumed a conſiderable lead in his party. He was twice married; and in 1570 died at Tubingen, where he was theological profeſſor, leaving behind him a numerous progeny. His works have been publiſhed in 8 vols. fol. Moreri.

BRENTOLA, or Brendola, in *Geography*, a ſmall town and diſtrict of Italy, in the Vicentin, at a ſmall diſtance from Vicenza.

BRENTON'S *reef*, the ſouthernmoſt point of Rhode iſland, in America, about three miles from Newport, lies 2 miles E. of Beaver-tail; forming with it the mouth of Newport harbour.

BRENTONEGO, a town of Germany, in the Tyrol; 12 miles S. S.W of Trent.

BRENTUS, in *Entomology*, a genus of Coleopterous inſects, having the head projecting into a very long, ſtraight, cylindrical ſnout, beyond the middle of which the antennæ, which are moniliform, are inſerted. Fab. &c. The ſpecies of this genus are *anchorago*, *aſſimilis*, *barbicornis*, *bifrons*, *cylindricornis*, *diſpar*, *druryanus*, *haſtile*, *monilis*, *naſutus*, and *ſemipunctatus*, which ſee.

BRENTWOOD, in *Geography*, is a large chapelry in the pariſh of South-Weald, in the county of Eſſex, England, ſituated 18 miles E. from London, on a commanding eminence. It is a conſiderable thoroughfare, and contains many inns and public-houſes. The Crown Inn is of very ancient foundation; and even in Salmon's time was reputed to have had that ſign for 300 years. The county-aſſizes were once held here; and in the High-ſtreet are the remains of a town-hall and priſon, inhabited by a farrier and other perſons, who are bound to put them in repair when the aſſizes ſhall be again removed hither. Here is a good grammar-ſchool, endowed by ſir Anthony Brown in 1537. The chapel, a ſmall ancient ſtructure, was founded about the year 1221, at the interceſſion of David, prior of St. Oſyth, for the uſe of the tenants of a manor belonging to that monaſtery. This townſhip contains 182 houſes, and 1007 inhabitants. Camden ſuppoſed the Cæſaromagus of the Itinerary to have been in the neighbourhood of Brentwood. At South-Weald is a circular camp, ſingle-ditched, including about ſeven acres, ſuppoſed to have been a caſtra exploratorum near which the Roman way, called Watling-ſtreet, paſſes. Morant's Hiſtory of Eſſex, 2 vols. fol.

Brentwood, a townſhip of America, in Rockingham county and ſtate of New Hampſhire, containing 899 inhabitants, diſtant 7 miles from Exeter, and 22 from Portſmouth. In its vicinity is found a ſtone in which vitriol and ſulphur are combined.

BRENTZ, a river of Germany, which riſes in Wirtemberg, and diſcharges itſelf into the Danube, near Laugingen.

BREPHOTROPHIUM, from βρεφος, *infant*, and τρεφω, *I nouriſh*, an hoſpital for foundlings, or a place wherein children, expoſed by their parents, are brought up at the public charge.

BREREWOOD, Edward, in *Biography*, firſt profeſſor of aſtronomy at Greſham-college in London, to which office he was choſen in 1596, was born in the city of Cheſter in 1565; and having completed his courſe of grammar-learning in his native place, was admitted, in 1581, of Brazen-Noſe college, in the univerſity of Oxford. Here he acquired the character of an aſſiduous ſtudent, and took his degree of maſter of arts in 1590. Failing in his attempt to obtain a fellowſhip, for which he was a candidate, he removed to St. Mary's hall. After his election to the profeſſorhip of Greſham college, he ſeems to have had no wiſhes of further preferment; but devoted himſelf to the purſuit of knowledge, and paſſed the remainder of his life in retirement. He died of a fever, Nov. 4th, 1613; and was buried in the chancel of St. Helen's church, without any monument or other memorial. From his works on a variety of ſubjects, which were printed after his death, we may conclude that he was a very general ſcholar. Theſe are as follow: 1. "De ponderibus et pretiis veterum nummorum, eorumque cum recentioribus collatione," lib. i. Lond. 1614, 4to. printed alſo in the "Critici Sacri," vol. viii. and in the Apparatus of the "Biblia Polyglotta." 2. "Enquiries touching the diverſity of Languages and Religions through the chief parts of the World," Lond. 1614, 23, 25, 4to.; 1647, &c. 8vo. To this was prefixed a learned preface by his nephew and heir, Robert Brerewood. 3. "Elementa logicæ, in gratiam ſtudioſæ juventutis in academia Oxonienſi," Lond. 1614, 1615, &c. 8vo. 4. "Tractatus quidam logici de predicabilibus, et predicamentis," Oxon. 4to. 1628; and 1637. &c. 8vo. 5. "Tractatus duo; quorum primus eſt de meteoris, ſecundus de oculo," Oxon. 1631, 1638, 8vo. 6. "A Treatiſe of the Sabbath," 1611; Oxf. 1631, 4to. 7. "Mr. Byfield's Anſwer, with Mr. Brerewood's Reply," Oxf. 1631, 4to. 8. "A ſecond Treatiſe of the Sabbath," or "An explication of the fourth Commandment," Oxf. 1632, 4to. 9. "Commentarii in Ethica Ariſtotelis," Oxon. 1640, 4to. 10. "A Declaration of the Patriarchal Government of the Ancient Church," Oxf. 1641, 4to.; Lond. 1647; Bremen, 1701, 8vo. Ward's Lives of the Profeſſors of Greſham College, p. 74, &c.

BRESANY, or Brezan, in *Geography*. See Brzezany.

BRESARGIA, a ſmall town of Sardinia, in the north part of the iſland denominated "Capo di Lugatori."

BRESCIA, or Il Bressano, or Bresciano, a country of Italy, formerly a part of Lombardy, but now belonging to the Ciſalpine republic, is bounded on the north by the county of Bormio, on the north-eaſt by the Trentin, on the eaſt by the Veroneſe, from which it is ſeparated by the lake Garda, on the ſouth by the Mantuan and Cremoneſe, and the ſmall lake of Idro, and on the weſt by the Bergamaſco, from which it is in a great part divided by the lake Iſco. Breſcia, though mountainous, is fertile in wine, oil, and maize, and has excellent paſturages, and ſome mines of copper and iron, and alſo manufactures of ſilk, paper, &c. The air is wholeſome, and the country populous. Its principal rivers are the Adige and the Oglio. It became a province of the Venetian ſtates in 1517; but Breſcia, its capital, was taken by the French under Bonaparte, in 1796, and it formed a part of the Ciſalpine republic by the 8th article of the treaty of Campo Formio in 1797, confirmed by the 12th article of the treaty of Luneville in 1801.

Brescia, in Latin *Brixia*, the capital of the above province, is ſituated on a beautiful plain on the ſmall river Garza. It is large, being reckoned about a league in circumference, well fortified, having a caſtle on a hill, and is ſaid to contain about 50,000 inhabitants, ſome of whom are rich and noble, and others are ingenious and diligent in carrying on ſeveral manufactures of linen, and particularly fire-arms, ſwords, knives, and other cutlery wares. It is encircled with walls, in which are five gates; the ſtreets are handſome and clean, moſt of them being watered by little ſtreams from the river, and the buildings are good. It has ſeveral public ſquares, the largeſt of which is ſurrounded with piazzas, and in the centre of it ſtands the town-houſe. The palace, where public buſineſs is tranſacted, is a magnificent ſtone ſtructure, built from the ruins of a temple of Vulcan, and remarkable for its architecture and paintings in freſco. Beſides the cathedral, this city has 19 pariſh-churches, 30 convents, a general hoſpital, and ſeveral charitable foundations. The cathedral is a modern edifice, to the rearing of which cardinal Quirini, once biſhop of this city, contributed liberally; and he alſo preſented the city with a library; in acknowledgment of which the magiſtracy, in 1750, erected two marble ſtatues to his honour, one in the church, and the other at the entrance of the library. In the cathedral is exhibited the famous ſtandard of Conſtantine; and this, as well as ſeveral of the churches, are adorned with beautiful ſtatues and paintings. The magiſtracy, before the revolution, conſiſted of 600 citizens, divided into inferior councils, under a noble Venetian, who preſided as governor, or podeſtat. This city was the ſee of a biſhop, ſuffragan of Milan. Breſcia is ſaid to have been built by the Cenomani, commanded by Beloveſus; and as others affirm, by Brennus; and it afterwards became a Roman colony. It was burnt by Radagaſſus, king of the Goths, in 412, and re-eſtabliſhed by Attila in 452. It was afterwards poſſeſſed by the Lombards. Charlemagne, having defeated king Didier in 771, entered Breſcia, and built the church of St. Denis. In 1426, after having ſuffered much by the troubles occaſioned by the duke of Milan, it ſurrendered itſelf to the republic of Venice. Gaſton de Foix, general of Lewis XII. took it in 1512 from the Venetians, and abandoned it to pillage, with the exception of the houſe inhabited by Chevalier Bayard: but in 1517, it was reſtored to the Venetians. Is was viſited by a plague in 1478, which ſwept away 25,000 perſons; and again by a ſimilar calamity in 1524. Breſcia was the birth-place of Tartaglia, the famous mathematician, and of Gambara, the poet, who died in 1596. It is diſtant about 44 miles E. of Milan, and 32 N. W. of Mantua. N. lat 45° 31′. E. long. 10° 5′.

BRESCICATI, in *Commerce*, a kind of bays, which ſupplies the negroes between the river Gambia and Sierra Leona. The beſt ſorts for this trade are the blue and red.

BRESCOU, in *Geography* a, ſmall iſland of France, with a fort upon it, in the gulf of Lyons, near the coaſt of Languedoc, or Herault, about a league S. of Agde; which ſee.

BRESELLO. See Bersello.

BRESINI, a ſmall town of Poland, in the palatinate of Lenczicz.

BRESINS, or Bresons, a ſmall iſland of the Atlantic, near the ſouth-weſt coaſt of England.

BRESK, or Brescan, a town of Africa, in the kingdom of Algiers, ſeated on the ſea coaſt, at the bottom of a bay in the Mediterranean; 50 miles W. S. W. of Algiers. N. lat. 36° 50′. E. long. 2° 30′.

BRESKENS, a town of Flanders, in the iſland of Cadſand; 10 miles N. of Sluys.

BRESLAU, or Wratislau, a principality of Sileſia, bounded on the N. and N.E. by that of Oels, on the S.E. by that of Brieg, on the S. and S.W. by thoſe of Brieg and Schweidnitz, and on the W. by thoſe of Lignitz and Wohlau. This diſtrict forms a kind of long ſquare, about 25 miles in length, by 16 in breadth. The country is very level; and the parts of it near the rivers, are either ſandy or ſwampy. It is, however, an excellent corn country, and not deſtitute of rich paſturage ground; it abounds with ſheep and cattle; and near the capital, the cows are of an uncommon ſize, and yield a proportionate quantity of milk; and this part of the country produces great quantities of madder. Wood is every where ſcarce, except in the circle of Namſlau; and the roads are ſo bad, as to be in ſome places impaſſable; but this inconvenience is remedied, particularly in the vicinity of Breſlau, by dykes and canals, which are kept in repair at a great annual expence.

On the partition of Sileſia in 1164, among the ſons of Uladiſlaus II., Breſlau fell to the ſhare of Boleſlaus Altus;

but diſputes occurring among his ſucceſſors, it was ſold by one of them, viz. Henry VI., to John, king of Bohemia, who, after the death of Henry, in 1335, incorporated it with the crown of Bohemia, endowing the city, at the ſame time, with divers important privileges; and the kings of Bohemia always appointed governors over that principality. In 1337, king John aſſigned the government to the city of Breſlau; and, in 1505, king Wladiſlaus transferred the judicature of the whole principality to the ſame city; ſo that the chief magiſtrate occupied the part of governor until the year 1635, when both the government and judicatures were ſurrendered to the emerpor Ferdinand III.; and in this ſtate it continued, till it was united to Pruſſia. It is divided into four circles: viz. thoſe of Breſlau, Neumarkt, Canth, and Namſlau; and, together with the diſtrict of Glogaw, it includes 53 cities, 108 towns, 14 market-towns, and between 5 and 6 thouſand villages, 2000 catholic churches, 605 proteſtant churches, 20 abbeys, 91 convents, and 39,000 hearths in the cities. The principal river of this principality, of which the property and juriſdiction belong to the king, is the Oder, which, in its courſe through the country, receives the inferior ſtreams of Ohlau, Lohe, Weyda, and Weiſtritz.

Breslau, or Breslaw, the capital of the above deſcribed principality, and of the whole duchy of Sileſia, is ſituated on the ſouth ſide of the Oder, which receives the Ohlau after its winding courſe through Old Breſlau. This place, the antiquity of which is uncertain, was ſet on fire by the Tartars in 1241, and was formerly environed by the Ohlau, as with a moat; and all without the Ohlau to the walls in their preſent poſition, were additions made by the emperor Charles IV. The Neuſtadt is more modern, and, ſince the year 1529, has been included within the fortifications, which are now, indeed, of no great importance. The whole town, both old and new, including the ſuburbs, is of great extent, being no leſs than two German miles in length. It is reckoned one of the moſt beautiful cities in Germany; and has ſeveral large regular ſquares, broad ſtreets, and ſtately edifices, both public and private. The Roman catholics have ſeveral churches and convents; the Lutherans have ſeven churches within the walls, and two without, and two-gymnaſiums; the Calviniſts and the Greeks have, each of them, one church; and the Jews have two ſynagogues. The popiſh univerſity is a noble edifice; and the exchange, adjoining to the council-houſe, is an elegant ſtructure. Several of its monaſteries and convents are magnificent buildings: and it has ſome good public libraries, with two armouries, a college of phyſicians, and a mint. Breſlau holds the third rank, next to Berlin and Konigſberg, among the cities of Pruſſia. It is the centre of all the trade of Sileſia, and its manufactures are conſiderable and various. The number of its inhabitants is eſtimated at about 52,000: and as it has ſeveral annual fairs, it is much frequented by Hungarian, Bohemian, Poliſh, and other merchants. The magiſtracy, which is Lutheran, conſiſts of a town-court and a council; and its conſiſtory is likewiſe Lutheran. This city was taken by the king of Pruſſia in 1741; compelled to ſurrender to the Auſtrians in 1757; and taken by the Pruſſian army at the cloſe of the ſame year, after a ſignal victory over the Auſtrians in its vicinity. In the laſt ſiege, ſeveral of its churches were much damaged, the library of St. Mary Magdalen was deſtroyed by the burſting of a bomb, and its ſuburbs were conſiderably injured. N. lat. 51° 3'. E. long. 17° 8' 45".

BRESLE, a town of France, in the department of the Oiſe, and diſtrict of Beauvais; 7 miles S. E. of Beauvais.—Alſo, a river of France, which riſes near Aumale, and ſeparates the department of the Somme, from that of the Eure, till it falls into the ſea at Treport.

BRESMA, in *Ichthyology*, a name given by Hildegard, and ſevaral others to the Bream, Cyprinus Brama, which ſee.

BRESMAL, John Francis, in *Biography*, a phyſician at Liege, was born in the year 1660. After ſtudying ſome years at home, he went to Paris, where he was admitted doctor in medicine, in 1689. In the courſe of his travels, he had turned his attention, in a particular manner, to inveſtigating the properties of the moſt celebrated mineral ſprings, of which, on his return to Liege, he publiſhed analyſes, giving alſo accounts of their virtues in the cure of diſeaſes. The titles of his works are, "La circulation des eaux, ou l'hydrographie des minerales d'Aix, et de Spa." Liege, 1699, 12mo. "Deſcription, ſeu analyſis de fontis, S. Ægidii, prope Tunyros," 1700, 12mo. He cites a deſcription of this ſpring from Pliny. "Parallele des eaux minerales chaudes et froides du dioceſe de Liege. Avec un avis au public, pour le preſerver de la peſte, &c." 1721, 8vo. For the titles of other works by this writer, on the ſubject of mineral waters, ſee Eloy. Dict. Hiſt.

BRESSAN, in *Geography*. See Brescia.

BRESSAY, or Brassa, one of the Shetland iſlands of Scotland, about 4 miles long, and 2 broad, ſeparated from the main land of Shetland by a narrow ſea, called "Breſſay ſound," forming a ſpacious harbour, in which a thouſand ſhips may ride at the ſame time. In this harbour, the Dutch veſſels, employed in the herring fiſhery, aſſemble about the middle of June. The inhabitants of Breſſay fit out about 26 large fiſhing boats The mountains ſupply ſlate for building, and peat for firing. N. lat. 60° 20'. W. long. 0° 50'.

BRESSE, a country of France, ſo denominated before the revolution, from a foreſt called "Brexia," ſituate in the province of Burgundy, and bounded on the eaſt by Savoy, on the ſouth by Viennois, on the weſt by Lyonnois and Dombes, and on the north by Franche Comté. It is eſtimated at 40 miles from north to ſouth, and 23 from eaſt to weſt. It is fertile in corn and hemp, and has fine paſtures and ſeveral lakes, abounding with fiſh. For ſome time, it was an earldom ſubject to the dukes of Savoy, who added it in 1601 to France, in lieu of the marquiſate of Saluzzo. The principal towns are Bourg, the capital, Beauge or Bauge, Coligny, Montreuil, Loge, and Pont de Vaux.

BRESSICI, or Breste. See Brzesc.

BRESSOLES, ſee Brezoles.

BRESSUIRE, a town of France; in the department of the two Sévres, and chief place of a canton, in the diſtrict of Thouars. The town contains 630, and the canton, 5911 inhabitants: the territory includes 290 kiliometres, and 13 communes.

BRESSUS, or Brepus; in *Ancient Geography*, a town of Aſia in Armenia Major, ſituate near the Euphrates, according to Ptolemy.

BREST, or Breast, in *Architecture*, a term uſed by ſome, for that member of a column otherwiſe called the *Tore*.

Brest-summers, or Bressumers, in *Building*, are pieces of timber deſigned for the ſupport of the brick-work in the front or rear wall of a building, for carrying arches, &c. In the inner parts of a building, the pieces into which the girders are framed are called summers.

Brest, in *Geography*, a ſea port town of France, and principal place of a diſtrict, in the department of Finiſterre. The number of inhabitants in the 3 parts, into which it is divided, is eſtimated at 27,000; the firſt canton contains 13,000, and includes 52½ kiliometres, and one commune;

the ſecond contains 17,275 inhabitants, and comprehends 2½ kiliometres, and 5 communes; and the third canton includes 14,408 inhabitants, 22½ kiliometres, and 1 commune. Breſt is ſeated on the declivity of a hill on the ſide of its port; and its ſtreets, which are few in number, are narrow and inconveniently contrived. It has two pariſh churches, a marine ſeminary, and a court of admiralty; but it is principally famous for its ſpacious road and harbour, which are reckoned (if we except Toulon), the largeſt and the ſafeſt in the whole kingdom, and capable of containing 500 ſhips of war, in 8, 10, and 15 fathoms, at low water. Its entrance from the W.S.W. called the "Gullet," is narrow and rocky, and the paſſage is difficult and dangerous, on account of the ſunken rocks on both ſides of the ſhore. The entrance is alſo guarded by a ſtrong caſtle ſeated on a rock on the ſea-ſide, and defended on the land-ſide by a large ditch and other fortifications. On one ſide of the port is a large quay, more than a mile long, and 200 paces broad, covered with ſtore-houſes for various kinds of merchandiſe; and, on the other ſide, there is alſo a quay, for the warehouſes, and the fine church of Notre Dame; and in a ſuburb, about half the ſize of the city, there is a ſtrong tower oppoſite to the caſtle, at the entrance of the harbour. At the bottom of the harbour, to which the range of magazines on the quay nearly extend, there are two docks for the building of ſhips, adjoining to which are the ſhops and houſes of the workmen; and one of theſe docks ſeparates the rope walks from the city. The arſenal of Breſt is a very large and magnificent building, plentifully ſupplied with different kinds of naval ſtores. This was entirely conſumed by fire in the year 1744. In 1694, an attempt was made by lord Berkeley, who commanded a fleet of 29 ſhips of war, with a number of fire ſhips and bomb-ketches, and general Tálmache, who had the command of twelve regiments of infantry, and two of marines, to ſeize on Breſt. But whilſt the ſailing of this expedition was delayed by counter intrigues, the king of France diſpatched mareſchal Vauban to repair the old, and to raiſe new fortifications, and a large body of troops to defend them. When the Engliſh armament arrived, the French were prepared in great force to repel it; and therefore the attempt, though conducted with ſingular reſolution, was defeated, with the loſs of 900 Britiſh ſoldiers, and 400 ſeamen, and of general Tálmache, who died of his wounds, and who, in the agonies of death, complained, that he had fallen by the treachery of his countrymen. N. lat. 48° 22′ 55″. W. long. 4° 30′ 50″.

Breſt, *bay of*, an American bay on the coaſt of the Weſtern ocean, in New Britain. N. lat. 52° 10′. W. long. 52° 30′.

BRET, *Cape*, lies in the Pacific ocean, on the eaſt coaſt of the north iſland of New Zealand, within about 7 leagues of ſeveral ſmall iſlands, cloſe under the main, called "Cavalles." S. lat. 35° 7′. E. long. 173° 52′.

Bret, in *Ichthyology*, a name which the people on the coaſt of Lincolnſhire give to the common turbot, a fiſh extremely common with them, and taken in vaſt abundance. The way of catching them is in a net, trailed, it is ſaid, upon the ground by two horſes; the one going up to the middle of his body in the water, the other on the ſhore. The turbot is known by the name of Bret among the fiſhermen, on many of our ſea coaſts, but moſt commonly, the ſmaller turbot only are diſtinguiſhed by that title; when they have attained to a moderate ſize for the table, they are called turbot.

It ſhould be further obſerved, that the pearl, *Pleuronectes Rhombus*, likewiſe obtains the name of bret in ſome parts of the country. Bret is the name of the turbot almoſt throughout the north of Britain.

BRETACHIÆ, in *Middle Age Writers*, denote wooden towers or caſtles, wherewith towns or camps were defended. Du-Cange Gloſſ. Lat.

BRETAGNE, in *Geography*. See Britany.

BRETCHEM, or Gratham, a ſmall town of Poliſh Pruſſia with a caſtle on the ſame river, in the territory of Culm; 48 miles E. of Culm.

BRETENOUX, a town of France, in the department of the Lot, and chief place of a canton in the diſtrict of Figeac, 4 miles N.N.W. of St. Ceré. The place contains 589, and the canton 8734 inhabitants; the territory comprehends 140 kiliometres, and 15 communes.

BRETESSED, in *Heraldry*, a term uſed by French heralds to expreſs any charge that is embattled on both ſides oppoſite to each other.

BRETEUIL, in *Geography*, a town of France, in the department of the Eure, and chief place of a canton, in the diſtrict of Evreux, 5 leagues S.S.W. of Evreux. The place contains 1893, and the canton 12,775 inhabitants; the territory includes 187½ kiliometres, and 14 communes.

Breteuil, is alſo a town of France, in the department of the Oiſe, and chief place of a canton, in the diſtrict of Clermont, 3½ poſts ſouth of Amiens. The place contains 2160, and the canton 11,632 inhabitants; the extent of the territory comprehends 147½ kiliometres, and 19 communes.

BRETHREN *and Siſters of the Free Spirit*, in *Eccleſiaſtical Hiſtory*, an appellation aſſumed by a new ſect which ſprung up towards the cloſe of the thirteenth century, and gained many adherents in Italy, France, and Germany. They took their denomination from the words of St. Paul, Rom. chap. viii. v. 2. 14. and maintained, that the true children of God were inveſted with the privilege of a full and perfect freedom from the juriſdiction of the law. They were enthuſiaſts to a degree of diſtraction, both in their principles and practice. They reſembled the Beghards, by which name they were ſometimes called, in their aſpect, apparel, and manner of living. Some of their profeſſed principles reſembled thoſe of the Pantheiſts; for they held, that all things flowed by emanation from God; that rational ſouls were portions of the Deity; and that the univerſe was God; and that by the power of contemplation they were united to the Deity, and acquired hereby a glorious and ſublime liberty, both from the ſinful luſts and the common inſtincts of nature; and hence they concluded that the perſon who was thus abſorbed in the abyſs of the Deity, became a part of the godhead, and was the ſon of God in the ſame ſenſe and manner that Chriſt was, and that he was freed from the obligation of all laws, human and divine. They treated with contempt all Chriſtian ordinances, and all external acts of religion, as unſuitable to the ſtate of perfection at which they were arrived. Some of them were honeſt but deluded enthuſiaſts: and they endured the torments inflicted upon them by the inquiſitors with aſtoniſhing calmneſs and triumph. Others proceeded to the moſt extravagant licentiouſneſs of conduct. They held their ſecret aſſemblies ſtark-naked, and lay in the ſame beds with their ſpiritual ſiſters, and indiſcriminately with other women, without the leaſt ſcruple or heſitation; modeſty and decency being, according to their creed, marks of inward corruption. And ſome of them proceeded ſtill farther, and maintained, that the *divine man*, or believer, could not ſin, let his conduct be ever ſo horrible or atrocious. Many edicts were publiſhed againſt them; but notwithſtanding the ſeverities they ſuffered, they continued till about the middle of the fifteenth century. They were called by ſeveral other names, ſuch as Schweſtriones, Picards, Adamites, and Turlupins. Moſheim's Eccl. Hiſt. vol. iii. p. 122, &c. 202, &c. 273, &c.

Brethren *and Clerks of the Common Life*, a denomination aſſumed by a religious fraternity towards the latter end of the fifteenth century. They lived under the rule of St. Auguſtin, and were eminently uſeful in promoting the cauſe of religion and learning. Their ſociety was firſt formed, in the preceding century, by Gerard de Groote, a native of Deventer; but did not flouriſh till about the period above-mentioned, when it obtained the approbation of the council of Conſtance, and became very reſpectable in Holland, the Lower Germany, and the adjacent provinces. It was divided into two claſſes; the *lettered brethren*, or *clerks*, and the *illiterate*: they lived in ſeparate habitations, but maintained the cloſeſt fraternal union. The former applied to the ſtudy of polite literature, and the education of youth; whilſt the latter were employed in manual labour, and the mechanic arts. Unreſtrained by religious vows, they nevertheleſs had all things in common; and this community was the great bond of their union. From the ſchools erected by the claſs of clerks proceeded many celebrated perſons, who contributed to the revival of literature and taſte in Germany and Holland; ſuch as Eraſmus, Hegius, Murmelius, &c. They were frequently called *Beghards*, and *Lollards*, by way of reproach. Moſheim, vol. iii. p. 253.

Brethren, *White*, *fratres albati*, were the followers of a leader about the beginning of the fifteenth century, who was arrayed in a white garment: and, as they were alſo clothed in white linen, they were diſtinguiſhed by this title. Their leader was a prieſt from the Alps, who carried about a croſs, like a ſtandard, and whoſe apparent ſanctity and devotion drew together a number of followers. This deluded enthuſiaſt practiſed many acts of mortification and penance, endeavouring to perſuade the European nations to renew the holy war, and pretended that he was favoured with divine viſions. Boniface IX. apprehending that this enthuſiaſt or impoſtor concealed inſidious and ambitious views, ordered him to be apprehended and committed to the flames, upon which his followers diſperſed. Moſheim, vol. iii. p. 275.

Brethren *of the Obſervance*. See Observance.

BRETON, in *Geography*, a river of England, which runs into the Stour, near Hadleigh, in Suffolk.

Breton, a ſand-bank, about two miles from the coaſt of France, in the Engliſh channel, and at the ſame diſtance S. from Granville, towards Cancale bay, the middle of which is dry at low water.

Breton, *Cape*, lies at the north end of the lake which extends northward from the Bayonne river at the bottom of the bay of Biſcay. It is known at Bayonne by its flat tower, and often called “Cabriton.”

Breton, *Cape*, an iſland, or rather a collection of iſlands, called by the French “Les Iſles de Madame,” ſituated in the Atlantic ocean, on the coaſt of North America, between 45° 28′ and 47° N. lat. and between 59° 44′ and 61° 29′ W. long. and about 45 leagues E. of Halifax. This iſland is about 109 miles in length, and from 20 to 34 in breadth; and, though attached to Lower Canada, is ſeparated from Nova Scotia by a narrow ſtrait, called the “Gut of Canſo,” which forms the communication between the Atlantic ocean and the gulf of St. Lawrence. It is ſurrounded with ſharp pointed rocks, ſeparated from one another by the waves, above which ſome of their tops are viſible. All its harbours are open to the eaſt, turning towards the ſouth; and on the other parts of the coaſt there are not a few anchoring places for ſmall veſſels, in creeks or between iſlets. The ſoil is generally ſwampy and moſſy, and unfit for agriculture; and as it abounds with lakes and foreſts, the climate is cold and foggy. The ſcarcity and poverty of paſtures have likewiſe prevented the increaſe of cattle. Although it abounds in timber, ſuch as pine, beech, birch, maple, ſpruce, and fir, it has derived little advantage from it. The fur-trade of this iſland has always been very inconſiderable; its peltry conſiſted only in the ſkins of a few lynxes, elks, muſk-rats, wild-cats, bears, otters, and foxes, both of a red and ſilver and grey colour. Some of theſe were procured from a colony of Micmac Indians, who had ſettled on the iſland with the French, and never could raiſe more than 60 men able to bear arms. The reſt came from St. John's, on the neighbouring continent. The fiſhery is a much more important object; and in 1743, when this iſland belonged to the French, the whole value of it is ſaid to have amounted annually to a million ſterling; and no leſs than 564 ſhips, beſides ſhallops, and 27,000 ſeamen, were employed in this trade. At preſent the inhabitants of the iſland take about 30,000 quintals of fiſh annually, which are ſhipped for Spain and the ſtraits, principally by merchants from Jerſey (belonging to England) who yearly reſort hither, and keep ſtores of ſupplies for the fiſhermen. Part of their fiſh was ſent to the French ſouthern iſlands, in 20 or 25 ſhips from 70 to 140 tons burden. Beſides the cod, which made at leaſt half their cargo, they alſo exported to the other colonies, timber, planks, thin oak-boards, ſalted ſalmon and mackarel, train-oil, and ſea-coal. In return they received ſugar and coffee, rum and molaſſes; the overplus of which they conveyed to Canada and to New England, where they obtained in exchange, fruits, vegetables, wood, brick, and cattle. Beſides this allowed trade, they alſo carried on a clandeſtine or ſmuggling commerce, in flour and ſalt fiſh. In this iſland there is a very extenſive bed of coal, which lies in a horizontal direction, about ſix or eight feet below the ſurface: but this has been chiefly uſed as ballaſt. In one of the pits a fire has been accidentally kindled, which could never yet be extinguiſhed. Theſe mines yield a revenue of 12,000l. yearly to the crown. The number of inhabitants in cape Breton does not exceed 1000.

This iſland was diſcovered, according to the French authors, about the year 1500, by the Normans and Bretons, who navigated theſe ſeas; and as it was ſuppoſed to be a part of the continent, it was called *Cape* Breton, which appellation it has abſurdly retained. But though it had been for ſome time a place of reſort for fiſhermen in the ſummer, the French did not take poſſeſſion of it before the year 1713; they then changed its name into that of “Iſle Royale,” and fixed upon fort St. Dauphin as their chief ſettlement. But as this harbour, though ſpacious and ſheltered from winds, was difficult of acceſs, they directed their views to another ſtation; and in 1720 commenced their fortifications at Louiſbourg. The ſettlers were chiefly Europeans; the Acadians and French of Nova Scotia not chooſing to leave that country. This iſland remained in the poſſeſſion of the French till the year 1745; when it was captured by the New England militia under the command of William Pepperell eſq. a colonel of the militia, and a ſquadron under commodore Warren. It was afterwards reſtored to the French, and retaken in 1758, by admiral Boſcawen and general Amherſt; and finally ceded to Great Britain by the peace of 1763; ſince which period the fortifications have been blown up, and the town of Louiſbourg diſmantled. This iſland, with reſpect to matters of government, was conſidered as annexed to Nova Scotia, till the year 1784, when it was erected into a ſeparate government by the name of Sydney, its capital. The other principal town is Louiſbourg. The preſent ſeat of government is at Spaniſh river, on the north ſide of the iſland. This iſland may be regarded as the key to Canada, and the fiſhery in its neighbourhood depends on its protection; and the moſt convenient harbour for its ſecurity and ſupply is Louiſbourg.

Breton, *Pertuis*, or *Breton channel*, lies on the weſt coaſt of France, and on the north of the iſland of Rhé, between that iſland and the main.

Breton, *Port*, lies at the extreme part of the Mediterranean, on the coaſt of Syria in Aſia; N. N. E. from Lariſſa gulf, at the diſtance of about 14 or 15 leagues.

BRETONNAYAN, René, in *Biography*, practiſed medicine with reputation at Turin, towards the end of the 16th century, but is only now known by a ſingular work in verſe: "La Generation de l'homme, et le temple de l'ame, avec autres œuvres poeticques extraites de l'Eſculape, de R. B." Paris, 1583, 4to. In the courſe of the poem the author treats of the ſtone, gout, melancholy, colic, &c. The heart he calls the ſun of the microcoſm; the liver the temple of human nature. He deſcribes alſo a variety of coſmetics to beautify the ſkin, which was at that time pretty much the cuſtom, among writers on medicines, particularly thoſe who treated on the diſeaſes incident to women. Haller. Bib. Ch. Eloy. Dict. Hiſt.

BRETOYSE, or Bretois, the law of the marches of Wales; in uſe among the ancient Britons.

BRETTA, or Bretten, in *Geography*, a town of Sweden, in the province of Dalecarlia, at the weſtern extremity of the lake Vener or Wener, and at the diſtance of about half a Swediſh mile from Wenerſborg.

BRETTEN, or Bretheine, a town of Germany, in a prefecturate of the ſame name, in the circle of the Lower Rhine, and palatinate of the Rhine, ſeated on a hill on the Salzbach, and accommodating the Roman catholics, Lutherans, and Calviniſts, in their reſpective worſhip. It is famous as the birth-place of Philip Melancthon. It was ſet on fire by the French in 1689; diſtant 21 miles S. from Heidelberg, and 18 S. E. from Spire.

BRETTEVILLE *ſur Laiſe*, a town of France, in the department of the Calvados, and chief place of a canton in the diſtrict of Falaiſe; 10 miles N. N. W. of Falaiſe. The place contains 790, and the canton 14,450 inhabitants; the territory comprehends 230 kiliometres, and 41 communes.

Bretteville *l'Orgueilleuſe*, a town of France, in the department of the Calvados, and chief place of a canton in the diſtrict of Caen; 2 leagues W. N. W. of Caen.

BRETTIGAU. See Prettigau.

BREVAL, a town of France, in the department of the Seine and Oiſe, and diſtrict of Mantes, one league S. W. of Mantes.

BREVANNE, a town of France, in the department of the Upper Marne, and diſtrict of Chaumont, 6 miles S. of Bourmont.

BREUDEL, John Philip, in *Biography*, a Dutch phyſician of eminence, who lived the latter end of the 16th and the beginning of the 17th centuries, only now known by a "Collection of medical conſultations," which he publiſhed in 1615, at Franckfort, 4to. and which were much eſteemed.

Breudel, Zacchary, born at Jena in Saxony, in 1592, was initiated into the knowledge of medicine by his father, who was one of the profeſſors in that univerſity. In 1617, he was made doctor, and, on the ſeceſſion of his father, profeſſor in medicine, an office which he filled ſeveral years with diſtinguiſhed attention and ability. He has left ſeveral works, the principal of which are "Chemia in artis formam redacta," Jena, 1630, 12mo.; "De Medicina, arte nobiliſſima," 1635, 4to.

Breudel, Adam, profeſſor in anatomy and botany in the univerſity of Wittemberg, diſtinguiſhed for his knowledge of the Greek language, as well as for his ſkill in his profeſſion, publiſhed, in 1700, a collection of inaugural diſſertations, among which Haller notices, as of ſuperior value, "De hydrope ovarii muliebris," in which he gives an accurate deſcription of that organ; "Embryonem in ovulo ante conceptionem," an opinion which is now pretty generally aſſented to; "De nutritione fœtus in utero materno." He alſo publiſhed "De lapidicina microcoſmi," 4to. 1711, ſhewing the varieties in ſtones found in the kidnies and bladder. He relates the caſe of a young woman who deſtroyed a fœtus ſhe was pregnant with, and procured abortion, by paſſing a ſtillet up the vagina into the uterus, but her life fell a ſacrifice to the experiment; alſo, "Obſervationum anatomicarum decades tres," 4to. They came out from 1606 to 1618. In the third part he deſcribes the exhaling veſſels of the heart.

Breudel, John Godfrey, nephew to Adam, profeſſor in anatomy at Gottingen, the beginning of the laſt century, publiſhed, in 1738, an accurate anatomical deſcription of the "valvula Euſtachij," with engravings; and, in 1747, "De auris humanæ concha;" "De phoſphoro urinario," and other ſimilar works, which have conſiderable merit. He died at Gottingen, January 18th, 1758, aged 47. Haller. Bib. Medica. Botan. Anatom. et. Chirurg. Eloy. Dict. Hiſt.

BREVE, Brevis, *ſhort*, in *Grammar*.—Syllables are diſtinguiſhed into *longæ* and *breves*, according as they are pronounced quicker or more ſlow; the time of a breve is half that of a long, or, as the grammarians expreſs it, a breve is one time, and a long two. See Accent.

Breve, is uſed in the *Civil Law* for a ſhort note or minute.

In which ſenſe, the word is alſo written *brevis* (ſubaude *libellus*) and in Engliſh Brief or breve; amounting to much the ſame with what is otherwiſe called *ſchedula* and *brevicula*. See Brief.

Breve more particularly denotes a liſt or regiſter of the names of the ſoldiers under the command of a general.

Breve is more particularly uſed in *Common Law* for a writ or brief; by which a man is ſummoned or attached to anſwer in action; or by which any thing is commanded to be done in the king's courts, in order to juſtice, &c. It is called "breve" from the brevity of it; and is directed to the chancellor, judges, ſheriffs, and other officers. See Writ. Hence,

Breve *perquirere*, is to purchaſe a writ or licence of trial in the king's courts by the plaintiff; and on this depends the uſage of paying to the king in ſuits for money due on bond, 6s. 8d. when the debt is 40l. and 10s. when it is 100l.

Fitzherbert has given a new Natura Brevium; thus called by way of diſtinction from an Old Natura Brevium, compoſed about the time of Henry III. There is a copy of this book of Fitzherbert filled with manuſcript notes by ſir M. Hales, in Dr. Williams's Library in Red Croſs Street.

Beeve *de recto*, ſee Recto.

Breve, in *Muſic*, is a note or character of time, formed ſquare without any tail; and equivalent to two meaſures, or ſemibreves. See Characters *of muſic*, and Semibreve.

In fugues, *tempo di capella*, of two ſemibreves in a bar, the movement is ſaid to be *alla breve*, from a bar containing one *breve* or two ſemibreves, and from the rapidity with which theſe ſeeming long notes are executed; *breves* as quick as ſemibreves, and ſemibreves as quick as minims, &c. See Time-table, and Notation.

Breve, *Breve de Bengale*, *Breve des Philippines*, and *Breve*

Breve de Madagaſcar, in *Ornithology*, names given by Buffon to different varieties of Corvus Brachyurus.

Breve, *vas*. See Vas *breve*.

BREVEN, in *Geography*, a mountain of Swiſſerland, ſituate on one ſide of the valley of Chamouny, and oppoſite to the glaciers. The height above the Mediterranean is eſtimated at 8358 feet.

BREVET, in the *French Laws*, denotes an act iſſued by a ſecretary of ſtate, importing a grant of ſome favour or donation from the king. The word is formed from the middle age Latin, *brevettum*, of *breve*, *ſhort*. In which ſenſe brevet amounts to much the ſame with our warrant. They ſay a brevet of nomination, a duke by *brevet*; ſuch a perſon had a brevet of a marſhal of France.

Brevet more particularly denotes the commiſſion of a ſubaltern officer, being only written on parchment, and without ſeal. A brevet-officer is one whoſe rank is above his pay; e. g. a brevet-major ſerves only as a captain, and receives pay as ſuch. Hence, a ſubaltern, who obtains rank by brevet is under a neceſſity of diſcharging the additional expences of his new dignity, together with the fees of his new commiſſion, without additional pay.

Brevet, in the *Sea Language*, is ſometimes uſed for a bill of loading.

BREUGHEL, or Brueghel, Peter, in *Biography*, commonly called *Old Breughel*, in contradiſtinction to his ſon, an eminent painter and engraver, was born at Breughel, a village near Breda in 1510, and acquired the firſt principles of his art from Peter Cock or Koeck-van-Aelſt, whoſe daughter he married. He afterwards travelled in France and Italy; ſtudied nature, amidſt the mountains of Tyrol and the ſcenery of the Alps; and availed himſelf of the works of the greateſt maſters in Italy. On his return from Italy he reſided for ſome time at Antwerp, and from thence he removed to Bruſſels. Whilſt he was employed by the magiſtrates of this city in taking views of the canal which falls into the Scheldt, he ſickened, and died in 1570; after having cauſed to be burned in his preſence all his licentious and ſatirical deſigns. He chiefly excelled in landſcapes, and droll ſubjects, reſembling thoſe of Jerom Boſche; and he was particularly fond of repreſenting the marches of armies, robberies, ſkirmiſhes, ſports, dances, weddings, and drunken quarrels; and in order to acquire greater ſkill and accuracy in this kind of repreſentations, he often aſſumed the habit of a peaſant, and joined the meaner boors at their feaſts and amuſements. His figures were correct, and their draperies well choſen; the heads and hands were touched with ſpirit; and his expreſſion, though not elegant, was true. His principal performance is in the emperor's collection at Vienna, which is the "Repreſentation of the building of the tower of Babel, by Nimrod." Several of his paintings are in the cabinets of the emperor and elector palatine, and diſperſed through various parts of Europe. For his amuſement he engraved ſome few landſcapes and groteſque ſubjects. Pilkington and Strutt.

Breughel, Peter, the *younger*, known by the appellation of the "Helliſh Breughel," from his delight in repreſenting horrible ſubjects, the ſon of the preceding artiſt, was born at Bruſſels, and became the diſciple of Gelles Coningſloo. His compoſitions rather excite diſguſt than ſatisfaction; and his human figures, though freely pencilled and not ill coloured, are not much more elegant than thoſe of the infernal kind. In his hiſtorical ſubjects he generally introduced witches and devils; ſuch as Orpheus charming Pluto and Proſerpine to procure the deliverance of Eurydice, ſurrounded with horrible forms and appearances; Saul and the witch of Endor; or St. Anthony's temptations. He alſo was an engraver. He died in 1642. Pilkington and Strutt.

Breughel, John, diſtinguiſhed from his mode of dreſs by the appellation of "Velvet Breughel," was the ſon of Peter Breughel the Old, and born at Bruſſels in 1560. He was inſtructed, probably, by his father, and by other artiſts; but, whoever were his inſtructors, he acquired an eminence in every art of painting, in colouring, in deſign, and in pencilling, far ſuperior to that of his father, and of all his contemporaries in his ſtyle. He began with painting flowers and fruit, which he executed with admirable ſkill; and then proceeded to landſcapes, ſea-ports, and markets, in which he introduced a number of ſmall figures, ſurpriſingly exact and correctly drawn. At Cologne, where he reſided for ſome time, he gained an extraordinary reputation; and his pictures were well known and admired in Italy, in which country he ſpent ſome time. He died, according to the moſt probable accounts, in 1625. That the induſtry of this artiſt muſt have been ſingular, ſufficiently appears from the number and variety of his pictures, and the exquiſite neatneſs and delicacy of their execution. It has been lamented, however, by connoiſſeurs, that his diſtances are overcharged with a bluiſh tinge. Breughel often decorated the pictures of his friends with ſmall figures, thus greatly enhancing their value; he was employed in painting flowers, fruits, animals, and landſcape ſcenery, in the pieces of hiſtory-paintings; and in this way Rubens made occaſional uſe of his pencil. He ſometimes joined this maſter in larger works, which have been much admired; and particularly in a "Vertumnus and Pomona," a picture three feet high and four broad, highly commended by Houbraken, and ſold at Amſterdam for above 280l. ſterling; and "a Terreſtrial Paradiſe," painted for Charles I. king of England. In the gallery of the archiepiſcopal palace at Milan, there is an admirable landſcape of Breughel, repreſenting a deſert, in which Giovanna Battiſta Creſpi painted the figure of St. Jerom; and among a great number preſerved in the Ambroſian library in that city, there is an oval picture of the Virgin, painted by Rubens, which is encompaſſed by a garland of flowers admirably executed by Breughel. Moſt conſiderable cabinets poſſeſs ſpecimens of the art of this maſter. Some ſmall engravings of landſcapes, &c. are alſo aſcribed to Breughel. Pilkington and Strutt.

Breughel, Abraham, called the *Neapolitan*, was born at Antwerp in 1672; and removing to Italy at an early age, he ſtudied with ſuch ſucceſs, that he acquired a degree of reputation, which made his works much ſought for, and highly valued. Nature was his model; and he repreſented his objects with elegance and truth, with a warm and natural colouring, and with a broad and free touch; which indicates a ready and expert hand. The performances of this maſter are claſſed among thoſe of the moſt admired artiſts. The fortune, acquired by his profeſſion, was conſiderable; but, he loſt the whole of it by the diſhoneſty of a merchant in whom he confided, and died in conſequence of the grief occaſioned by this misfortune. Pilkington.

Breughel, Peter, of Bois le Duc, took his degree of doctor in medicine at Padua, and was in ſuch eſteem with Philip II. king of Spain, that he was by his command appointed profeſſor in medicine at the univerſity of Louvain, though, from his frequent attendance on the nobility in the neighbouring provinces, he was not able to perform the duties of that office. On his death, which happened in the year 1577, he left a ſum of money to found a college at Louvain for ſix ſtudents, who were to be inſtructed in the different branches of medicine. The college, which is ſtill in exiſtence, bears the name of the founder; but no addition having been made to the revenue, it is now only capable of maintaining three ſtudents. Eloy. Dict. Hiſtor.

BREVIA *teſtata*, mentioned by *Feodal Writers*, were written memorandums, introduced to perpetuate the tenor of the conveyance and inveſtiture of lands, when grants by parol only became the occaſion of diſpute and uncertainty. To this end they regiſtered in the deed the perſons who attended as witneſſes, and heard it read without ſigning their names; the clerk adding their names in a ſort of memorandum. Modern deeds are an improvement and amplification of theſe. Blackſtone's Comment. vol. ii. p. 307.

BREVIARE, to abbreviate or reduce a thing into a ſhorter compaſs. This is otherwiſe called *abbreviare* and *inbreviare*.

BREVIARIUM, is more particularly uſed among Roman writers, to denote a book introduced by Auguſtus, containing the accounts of the empire. The deſign of it was for giving an account to the people how the monies levied on them were applied. The emperor Tiberius laid aſide the breviarium, but it was reſumed by Caligula.

BREVIARY, is an epitome and abridgment, or ſhort ſtate of a thing. The word is Latin, *breviarium*, though not pure, as appears from Seneca, who obſerves, that the ancients, in lieu of it, uſed *ſummarium*.

Breviary was alſo uſed among the ancients for the place where the briefs, or what was written abbreviately, were preſerved.

Breviary, among *Eccleſiaſtical Writers*, denotes the office or ſervice, both for day and night, as performed in the Romiſh churches.

Breviary is more frequently uſed for a church-book, containing the office of the breviary, that is, the prayers, and other parts of the ſervice, with the ſeveral variations to be made therein, according to the ſeveral days, canonical hours, feaſts, and the like.

D. Mege derives the name breviary from hence, that the ancient monks in their journeys, &c. had little books, wherein were the pſalms and leſſons read in the choir, collected out of large volumes: and F. Mabillon tells us, he has ſeen two ſuch books in the archives of Ciſteaux; they were not above three fingers broad: their letter was exceedingly ſmall, and conſiſted moſtly in abbreviations, expreſſing a whole period in a few ſyllables: whence they had a good title to the appellation of breviaries, q. d. *abridgments*. Some deduce the appellation breviary hence, that when the popes reſided in the Lateran palace, the office read in the papal palace was much ſhorter than that ſaid in the other churches of Rome; which office, thus abbreviated, was compiled by Innocent III., and called *officium capellare*, till ſuch time as the Franciſcan friars adopting the ſame, in conformity to the papal chapel, it become denominated *breviarium*, and ſhortly after was in general uſe. Marg. Vocab. Eccleſ. p. 38. Menag. Orig. Franc. The firſt time the word breviary occurs, in the ſenſe of a church-book, is in a letter of the archbiſhop of Lyons to the biſhop of Langres, in 1099; or rather by Micrologus, who lived in 1080.

The Roman breviary is general, and may be uſed in every place: but on the model of this have been formed various others, peculiarly appropriated to each dioceſe, and each order of religious.

The breviary conſiſts of the ſervices of matins, lauds, prime, third, ſixth, nones, veſpers, and the complines, or *poſt-communio*; that is, of ſeven different hours; on account of that ſaying of David, *Septies in die laudem dixi tibi*. The obligation of reciting the breviary every day, which was at firſt univerſal, by degrees was reduced to the beneficiary clergy alone, who are bound to do it on pain of mortal ſin, and of refunding their revenues, in proportion as they are delinquent herein. In the fourteenth century, there was a particular reſervation in favour of biſhops, for paſſing, on occaſion, three days without rehearſing the breviary. The inſtitution of the breviary not being very ancient, the lives of the ſaints were inſerted in it, agreeable to the opinions of the times, i. e. full of ridiculous ill-atteſted facts; which gave a handle to ſeveral purgations, or reformations thereof, by ſeveral councils, particularly thoſe of Trent and Cologne; by ſeveral popes, as Pius V. Clement VIII. and Urban VIII. as alſo by ſeveral cardinals and biſhops, each of whom lopped off ſome of the extravagancies, and brought the work nearer to the ſimplicity of the primitive offices; as acknowledging, that in the ancient church there was nothing read, but ſcripture itſelf.—Cardinal Quignon carried the reformation the fartheſt; leaving out the little office of the Virgin, the verſes, reſponſes, and a great part of the lives of the ſaints.

The breviaries now in uſe are almoſt innumerable: the difference between them conſiſts principally in the number and order of the pſalms, hymns, pater-noſters, ave-maries, credos, magnificats, cantemuſes, benedictuſes, canticamuſes, nunc dimittites, miſereres, hallelujahs, gloria patris, &c.

The moſt eminent, after the Roman breviary, are thoſe of the Benedictines, of the Bernardines, of the Chartreux, of the Præmonſtratenſes, of the Dominicans, the Carmelites, the Franciſcans, and Jeſuits; alſo that of Cluny, of the church of Lyons the church of Milan, and the Mozarabic breviary uſed in Spain. But, in reality, there is ſcarcely a church in the communion of Rome, in France, Flanders, Spain, Germany, &c. that has not ſomething particular in the form and manner of its breviary, though the differences are generally inconſiderable. See Ambrosian, Gallican, &c.

The breviary of the Greeks, which they call ωρολογιον, *horologium*, q. d. *dial*, is nearly the ſame, in almoſt all the churches and monaſteries that follow the Greek rite. The Greeks divide the pſalter into twenty parts, καθισματα; which are a kind of reſts, pauſes, or ſtations: and each pauſe is again ſubdivided into three parts. In general, the Greek breviary conſiſts of two parts; the one containing the office for the evening called μεσονυκτιον; the other that for the morning, conſiſting of matins, lands, prime, tierce, ſixth, none, veſpers, and complines. The breviary of the Maronites contains ſome more conſiderable variations.

Among the people who ſpeak the Sclavonic language, or any of its dialects, the breviary is rehearſed in the vulgar tongue, as among the Maronites in Syriac, among the Armenians in Armenian, &c. Thoſe who rehearſe the breviary in the Sclavonic, are divided as to the rite; ſome following the Roman or Latin rite, as the inhabitants of Dalmatia and the neighbouring coaſts; whereas thoſe who live farther within the continent, as in Hungary, Boſnia, Sclavonia, &c. and in Poland, Lithuania, and Muſcovy, follow the Greek rite. The breviaries of the Cophts and Abyſſinians are much alike.

BREVIATE, is ſometimes uſed for an abridgment, or ſhort extract of a book or paper. Phil. Tranſ. N° 37. p. 2212.

BREVIATOR, an officer under the eaſtern empire, whoſe buſineſs was to write and tranſcribe briefs. At Rome, thoſe are ſtill called breviators, or abbreviators, who dictate and draw up the pope's briefs. See Abbreviator.

BREVIBUS, *et Rotulis liberandis*, in *Law*, a writ or mandate to a ſheriff, to deliver to his ſucceſſor, the county, and the appurtenances, with the rolls, briefs, remembrances, and all other things belonging to that office.

BREVICORNIS, in *Entomology*, a ſpecies of Cerambyx that inhabits Sierra Leona in Africa. The thorax is unarmed, and green: wing-caſes obſcure: antennæ ſhort, and black. Fabr. &c.

Brevicornis, a ſpecies of Necydalis found in Guinea. The wing-caſes are very minute: head and thorax fuſcous, with a longitudinal yellow line: antennæ, very ſhort and thick. Gmel. &c.

Brevicornis, a ſpecies of Cimex of an obſcure or dull cupreous colour: antennæ, very ſhort and compreſſed; the anterior thighs dentated. Fabr. This ſort is from China.

Brevicornis, a ſpecies of Tipula of a black gloſſy colour: margin of the wings blackiſh: abdomen fuſcous: anterior ſhanks ſpinous. Fabr. A native of Europe, called by Degeer, Tipula flavicauda.

Brevicornis, a ſpecies of Monoculus that inhabits marſhes overflown by the ſea. It is ſimply deſcribed as having the hairs of the tail very ſhort. Müll-Stroem, &c. *Obſ.* The antennæ in the male of this ſpecies are hooked; thoſe of the female forked at the tips.

BREVIER, among *Printers*, is the denomination of a ſmall ſpecies of letters between *minion* and *Bourgeois*. See Printing.

BREVINE, in *Geography*, a town of Swiſſerland, in the principality of Neuchatel, 12 miles W. of Neuchatel. N. lat. 47°. E. long. 6° 23′.

BREVIPES, in *Entomology*, a ſpecies of Staphylinus that inhabits Europe. The colour is deep black: wing-caſes and legs teſtaceous: ſhanks ſhort. Linn. Inhabits Europe.

BREVIPILIS, in *Zoology*, that variety of the dog (Canis) known by the name of king Charles's dog.

BREVIS *cubiti*, in *Anatomy*, one of the extenſor muſcles of the cubitus, ariſing from the external ſpine of the humerus.

Brevis *radii*, one of the ſupinatory muſcles of the radius, ariſing partly from the external condylus of the humerus, and partly from the upper and exterior part of the ulna; and inſerted into the ſuperior part of the radius, which it embraces wholly: and ſerves to turn the palm of the hand upwards.

Brevis is alſo uſed by ſome for the third of the extenſors of the carpus, which, ariſing from the lower part of the humerus, and running along the radius, terminates in the bone of the carpus which ſuſtains the middle finger. Some anatomiſts join this with the ſecond extensor, and call them bicornis, or radialis externus: others chooſe to diſtinguiſh them becauſe they have different origins, and inſertions; and that their bellies are ſeparable.

Brevis *extenſor pollicis pedis*. See Extensor.

Brevis *flexor pollicis pedis*. See Flexor.

Brevis *peronæus*. See Peronæus.

Brevis *pronator radii*. See Pronator.

Brevis, in *Entomology*, a ſpecies of Cerambyx of a blackiſh colour, with ſpinous thorax: thighs rotundate, ſhort: anterior joints of the feet lobed with hairs. Sulz. &c. A native of Surinam.

BREVITY, in a general ſenſe, that which denominates a thing brief or ſhort.

Brevity is more particularly uſed in ſpeaking of the ſtyle or compoſition of diſcourſe. Brevity of diſcourſe is by ſome called brachylogia and breviloquentia; ſometimes laconiſmus. Tacitus and Perſius are remarkable for the brevity of their ſtyle. There are two kinds of brevity, one ariſing from dryneſs, poverty, and narrowneſs of genius; the other from judgment and reflection; which latter alone is laudable. Brevity is ſo eſſential to a tale, a ſong and an epigram, that without it, they neceſſarily languiſh and become dull. Rhetoricians make brevity one of the principal marks or conditions of eloquence; but the rules they preſcribe for attaining it, are difficult to apply, ſo as ſtill to keep the due medium between too much and too little.

A juſt brevity is attained by uſing all the words which are neceſſary, and none but thoſe which are neceſſary. Sometimes it may alſo be had, by chooſing a word which has the force of ſeveral. It is this laſt kind which Quintilian admires ſo much in Salluſt; and the imitation of which, by other writers, has cauſed ſo much obſcurity. See Obscurity.

BREVIUM *cuſtos*. See Custos.

Brevium *falſo retorno*. See Falso.

BREUNLINGEN, in *Geography*, a ſmall town of Germany, in the circle of Swabia, which, at the peace of Munſter, was ceded to the houſe of Auſtria.

BREVOORDT, a fortified town in the United Netherlands, in the province of Guelderland, and county of Zutphen, ſurrounded by a marſh; ſeven leagues S. E. of Zutphen.

BREW, a river of England, which runs into the Britiſh channel, about 8 miles N. of Bridgewater.

BREWED-wine. See Wine.

BREWER, a perſon who profeſſes the art of brewing. Brewers are called, in *Middle Age Writers*, *breſiatores*, *braciatores*, *braxionarii*, *braſiatrices*, *braxatrices*, and *cambarii*. Du-Cange Gloſſ. Lat. tom. i.

The brewers of London make a company, incorporated by Henry VI. in 1438, conſiſting of a maſter, three wardens, twenty-eight aſſiſtants, and one hundred and eight liverymen. See Company.

The apparatus and utenſils of a brewer, or a brewhouſe, are a furnace made cloſe and hollow for ſaving fuel, with a vent for the paſſage of the ſmoke, leſt it taint the liquor; a copper, which is preferable to lead; a maſk-fat near the head, a cooler near the maſk-fat, and guile-fat under the cooler; adjoining to all, are ſeveral clean tubs, to receive the worts and liquors.

Brewer, in *Geography*, a ſtrait in the Magellanic ſea, about the iſland called Statenland, which parts it from the ſtraits of Le Maire. It was diſcovered by the Dutch navigator Brewer, about the year 1643.

Brewer's *Haven*, a good harbour at the N. end of the iſland of Chiloe, on the coaſt of Chili, in South America, and in the South ſea. The Duch attempted to land here in 1643, in order to obtain poſſeſſion of ſome part of Chili, but they were driven off by the Spaniards and natives. S. lat. 42° 30′. W. long. 74° 10′.

BREWING, *Braſſage de la biere*, Fr. *Das Brauen*, Germ. The art of brewing, or of preparing a vinous fermented liquor from the farinaceous ſeeds, is of very high antiquity. The ancient Egyptians, from the ſoil and climate of their country not being favourable to the culture of the vine, were induced to ſeek a ſubſtitute in barley, from which, in all probability, by the proceſs of malting, they knew how to procure a fermented liquor. The town of Peluſium, ſituated on one of the mouths of the Nile, was particularly celebrated for its manufactories of malt liquor, of which there were two kinds; one called *Carmi* was ſweet, and appears to have reſembled our ſweet and glutinous ales, the other named *Zithum*, ſeems to have been analogous to modern beer. The Germans, from the teſtimony of Tacitus, were capable of preparing a liquor ſimilar to wine (quandam vini ſpeciem) from barley, by fermentation. Julian, Strabo, and Polybius, ſhow, that the ſame art was known to the Spaniards, the Gauls, and the inhabitants of the Britiſh iſlands, and the north of Europe. All the ancient malt liquors, however, ſeem to have been made entirely of barley, or ſome other farinaceous grain, and therefore were not generally calculated for long keeping, as this quality depends conſiderably, though not entirely, on the bitter extract of hops, or other vegetables, with which the liquor is mingled.

Modern malt liquor is eſſentially compoſed of water, of the ſoluble parts of malt and hops, and of yeaſt.

For a particular account of the preparation of Malt, we refer our readers to that article. It will be ſufficient for our preſent purpoſe, to mention, that barley conſiſts of fecula or ſtarch, albumen, and a little gluten; and, that by the proceſs of germination or malting, the ſtarch is converted into ſaccharine mucilage. If each grain of barley was perfectly malted, the whole of its ſtarch would be changed into ſugar; this, however, is never the caſe: the ſoluble contents, therefore, of ſuch malt as the brewers make uſe of, arranged in the order of their reſpective proportions, are ſaccharine mucilage, ſtarch, albumen, and gluten, of which only the firſt is abſolutely neceſſary for the production of a vinous liquor. Three or four different kinds of malt are diſtinguiſhed by the brewer by their colours, which depend on the degree of heat that was uſed in the drying. Malt that has been dried by a very gentle heat ſcarcely differs in its colour from barley; if expoſed to a ſomewhat higher temperature, it acquires a light amber-yellow hue; and by ſucceſſive increments of heat, the colour becomes deeper and deeper, till, at length, it is black. The change of colour is owing to the grain being partially charred or decompoſed; and in proportion to the extent to which this alteration is allowed to proceed, will the produce of ſugar, that is of fermentable matter, be diminiſhed. The principal advantage of high-dried malt over the paler kind, is the deep yellowiſh brown tinge which it gives to the liquor: but this colour may be communicated much more economically by burnt ſugar. The malt, whether pale or high-dried, muſt be bruiſed between rollers, or coarſely ground in a mill before it is uſed, and it is found by experience, that malt which has lain to cool for ſome weeks is, in many reſpects, preferable to that which is uſed as it comes hot from the mill. The firſt ſtep in the proceſs of brewing, is

§ 1. *Maſhing.*

This is performed in the *maſh-tun*, which is a circular wooden veſſel, ſhallow in proportion to its extent, and furniſhed with a falſe bottom, pierced with ſmall holes, fixed a few inches above the real bottom: when it is ſmall, it ought to have a moveable wooden cover. There are two ſide-openings in the interval between the real and falſe bottom; to one is fixed a pipe for the purpoſe of conveying water into the tun; the other is fitted with a ſpiggot for the purpoſe of drawing the liquor out of the tun. The brewing commences by ſtrewing the griſt or bruiſed malt evenly over the falſe bottom of the maſh-tun, and then, by means of the ſide pipe, letting in from the upper copper the proper quantity of hot water. The water firſt fills the interval between the two bottoms, then forcing its way through the holes in the falſe bottom, it ſoaks into the griſt, which, at firſt floating on the ſurface of the water, is thus raiſed off the bottom on which it was ſpread. When the whole of the water is let in, the proceſs of maſhing, properly ſo called, begins. The object in maſhing is to effect a perfect mixture of the malt with the water, in order that all the ſoluble parts may be extracted by this fluid: for this purpoſe, the griſt is firſt incorporated with the water by means of iron rakes, and then the maſs is beaten and agitated, and ſtill further mixed by long flat wooden poles, reſembling *oars*, which indeed is the name by which they are technically known. In ſome of the large porter breweries, the extent of the tun is ſo great, that the proceſs of maſhing cannot be adequately performed by human labour, and recourſe is had to a very ſimple and effectual inſtrument for this purpoſe. A very ſtrong iron ſcrew, of the ſame height as the maſh-tun, is fixed in the centre of this veſſel, from which proceed two great arms or radii, alſo of iron, and beſet with vertical iron teeth a few inches aſunder, in the manner of a double comb: by means of a ſteam engine, or any other moving power, the iron arms which at firſt reſt on the falſe bottom, are made ſlowly to revolve upon the central ſcrew, in conſequence of which, in proportion as they revolve, they alſo aſcend through the contents of the tun to the ſurface; then, inverting the circular motion, they deſcend again in the courſe of a few revolutions to the bottom. Theſe alternate motions are continued till the griſt and water are thoroughly incorporated. When the maſhing is completed, the tun is covered in to prevent the eſcape of the heat, and the whole is ſuffered to remain ſtill, in order that the inſoluble parts may ſeparate from the liquor: the ſide ſpiggot is then withdrawn, and the clear wort is allowed to run off, ſlowly at firſt, but more rapidly as it becomes fine, into the lower or boiling copper.

The operation of maſhing, as it is the firſt in order, is the moſt important; and all the ſucceeding ones are modified according to the circumſtances, under which this primary one is effected. The principal thing to be attended to, is the temperature of the maſh, which depends, partly on the heat of the water, and partly on the ſtate of the malt. If any quantity of barley is mingled with twice its bulk of water, the temperature of the maſs will be very nearly that of the mean temperature of the ingredients. If the paleſt malt is ſubjected to the ſame experiment, the temperature will be ſomewhat greater than that of the mean heat. This exceſs is found to increaſe very rapidly, in proportion to the colour or dryneſs of the malt employed; ſo that when one part of the higheſt dried malt is mixed with two parts of warm water, the temperature will be no leſs than 40° Fah. above the mean. In calculating, therefore, the heat of the maſh, it is neceſſary to take into conſideration, both the dryneſs of the malt, and the proportion which it contains of unmalted, or imperfectly malted barley. The object in maſhing is to extract from the malt, as much as poſſible of the ſaccharine mucilage; but this is ſo intimately combined with the other parts of the grain, that the range of temperature which can be employed for this purpoſe, is very confined. If the water was let upon the griſt boiling hot, the ſtarch which it contains would not only be diſſolved, but converted into a gelatinous ſubſtance, in which all the other parts of the malt, and moſt of the water, would be entangled, beyond the poſſibility of recovery by any after-proceſs; and great loſs is perpetually ſuſtained by inattentive brewers, from this very circumſtance. The moſt eligible temperature upon the whole for maſhing, appears to be about 185° to 190° of Fahrenheit: the heat of the water, therefore, for the firſt maſhing, muſt be ſomewhat below this temperature, and the lower in proportion to the dark colour of the malt made uſe of. Thus, for pale malt, the water of the maſh may be at 180° and upwards; but for high-dried brown malt, it ought not much to exceed 170°. The wort of the firſt maſhing is always by much the richeſt in ſaccharine matter; but to exhauſt the malt, a ſecond and third maſhing is required; and as no heat is generated, except in the firſt maſhing, the water in the ſucceeding ones may be ſafely raiſed to nearly 190°. The proportion of wort to be obtained from each buſhel of malt, depends entirely on the propoſed ſtrength of the liquor. For ſound ſmall beer, 30 gallons of wort may be taken from each buſhel of malt; but for the ſtrongeſt ale, only the produce of the firſt maſhing, or about 6½ gallons per buſhel, is employed. But whatever be the proportion of wort required, it muſt be held in mind, that every buſhel of well made malt will abſorb, and retain 3¾ gallons of water, and therefore the water made uſe of muſt exceed the wort required, in the ſame proportion.

It is of great importance to the brewer, to aſcertain the ſtrength of his worts, or their richneſs in ſaccharine matter; this may be done, partly by the taſte, but more accurately by an inſtrument called a *Saccharometer*, which in fact is only a hydrometer, the ſcale of which is adapted to the various denſities of wort. The name Saccharometer, however, is an improper one, as it is apt to miſlead the brewer: this inſtrument ſhews merely the ſpecific gravity of the liquor, and this depends, not only upon the ſugar, but the ſtarch, and every other part of the malt which is ſoluble in water. But the relative proportions of theſe ſubſtances are, in all likelihood, very various in different parcels of malt; whence ariſes a ſerious objection to much dependence on the ſaccharometer.

§ 2. *Boiling and hopping.*

If only one kind of liquor (whether ale or beer) is to be made, the produce of the three maſhings is to be mixed together: but, if both ale and beer are required, the wort of the firſt, or of the firſt and ſecond maſhings, is appropriated to the ale, and the remainder is ſet aſide for the beer. All the wort deſtined for the ſame liquor, after it has run from the maſh-tun, is transferred to the large lower copper, and mixed while it is heating with the required proportion of hops. The ſtronger the wort is, the larger proportion of hops does it demand: and this is calculated in two ways, either according to the quantity of malt employed, or the richneſs of the wort. Where the former baſis of calculation is referred to, the quantity of hops, eſpecially in private families, where economy is not ſo ſtrictly attended to as in large eſtabliſhments, is one pound of hops to a buſhel of malt, whether the wort is intended for the ſtrongeſt ale, or the weakeſt ſmall beer. In public breweries, the proportion of hops is conſiderably ſmaller, and is regulated, not merely by the quantity of malt, but the richneſs of the wort. For ſtrong ales, the common proportion is about 1 lb. of hops to 1. 3 buſhel of malt; for beer, the quantity is lowered to 1 lb. of hops to 1. 7 buſhel of malt. When both ale and beer are brewed from the ſame malt, the uſual practice is to put the *whole* quantity of hops in the ale-wort; and after they have been boiled a ſufficient time in this, to transfer them to the beer-wort, in order to be exhauſted by a ſecond boiling.

When the hops are mixed with the wort in the copper, the liquor is brought to boil; and the beſt practice is to keep it boiling as faſt as poſſible, till, upon taking a little of the liquor out, it is found to be full of minute flakes, like curdled ſoap. Theſe flakes conſiſt of the gluten and ſtarch of the malt ſeparated from their former ſolution in the wort, by the joint action, in all probability, of the heat, and the bitter extract of the hops. For the aſcertainment of this important queſtion, no regular experiments, however, have been as yet inſtituted.

The boiling copper is in moſt breweries uncovered, but in ſome it is fitted with a ſteam-tight cover, from the centre of which paſſes a cylindrical pipe, that terminates by ſeveral recurved branches in the upper or maſhing copper: the ſteam, therefore, produced by the boiling, inſtead of being waſted, is let into the cold water of the upper copper, and thus raiſes it very nearly to the temperature required for maſhing, beſides impregnating it very ſenſibly with the eſſential oil of the hops, in which the whole of the flavour reſides, and which would otherwiſe be diſcharged into the air, and thus be loſt.

§ 3. *Cooling.*

When the liquor is ſufficiently boiled, it is diſcharged into a number of ſhallow tubs called coolers, where it remains expoſed to a free draft of air, till it has depoſited the hop-ſeeds and coagulated flakes with which it was charged, and is become ſufficiently cool to be ſubmitted to the next proceſs, which is that of fermentation. It is neceſſary that the proceſs of cooling ſhould be carried on as expeditiouſly as poſſible, particularly in hot weather; for unfermented wort, by expoſure to a hot cloſe air for a few hours, is very liable to contract a nauſeous ſmell and taſte, when it is ſaid technically to be *foxed*, in conſequence of ſmall ſpots of white mould forming on its ſurface. Liquor made from pale malt, and which is intended for immediate drinking, need not be cooled lower than 75° or 80°, and in conſequence may be made all the year through, except perhaps during the very hotteſt ſeaſon; but beer from brown malt, eſpecially if intended for long keeping, requires to be cooled to 65° or 70°, and therefore cannot poſſibly be made except in cool weather; hence it is that the months of March and October have always been reckoned peculiarly favourable to the manufacture of the beſt malt liquor.

§ 4. *Tunning and barrelling.*

From the coolers the liquor is transferred into the fermenting or working tun, which is a large cubical wooden veſſel capable of being cloſed at pleaſure. As ſoon as the wort is let in, it is well mixed with yeaſt, in the proportion of about one gallon to four barrels, and in about five hours afterwards the fermentation commences. The ſigns of fermentation are muddineſs of the liquor, the formation of froth or yeaſt on the ſurface, and a copious diſengagement of carbonic acid. In the firſt ſtage of fermentation, on taking ſome of the yeaſt in a bowl it ſoon falls down into a liquid; but when the fermentation is ſufficiently eſtabliſhed to allow of barrelling, the yeaſt has a certain degree of toughneſs, and will remain a long time without falling in. When the wort is let down hot into the working tun, the fermentation is conducted with the tun cloſed, and proceeds rapidly, ſo that in about 18 or 20 hours it is fit to be cleanſed or put into the barrels; but when the wort is let down at 65° it requires 48 hours for the firſt fermentation, and is peculiarly liable to be affected by a conſiderable change of weather.

Although, in common practice, the coagulated fecula and gluten are depoſited and left in the coolers, yet, ſkilful brewers mix them again with the wort by agitation, and ferment the liquor in this ſtate. Fermentation is conſiderably retarded by this practice; but, in return, the liquor is much clearer and more completely fermented, as is obvious from the remarkable diminution of ſpecific gravity which it undergoes.

The laſt proceſs is transferring the liquor from the working tun to the barrels, when the fermentation is completed. During a few days, a copious diſcharge of yeaſt takes place from the bung hole, and the barrels muſt be carefully filled up every day with freſh liquor: this diſcharge gradually becomes leſs, and in about a week ceaſes; at which time the bung-hole is cloſed up and the liquor is fit for uſe, after ſtanding from a fortnight to three months according to its ſtrength, and the temperature at which it has been fermented.

Brewing, among *Diſtillers*, denotes the method of extracting the more ſoluble parts of vegetables with hot water, and thus procuring a ſolution or decoction fitted for vinous fermentation.

In which ſenſe brewing is a neceſſary ſtep towards diſtillation.

A fermentable ſolution, fit for yielding a ſpirit or brandy, is obtainable from any vegetable, under proper management; but the more readily and perfectly the ſubject diſſolves, the better it is diſpoſed for fermentation, and the production of brandies. Thus ſugar, honey, treacle, manna, and other inſpiſſated vegetable juices, which totally unite with water, into a clear and uniform ſolution, are more immediate, more perfect, and better adapted ſubjects of fermentation than roots, fruits, or herbs, in ſubſtance, the grains, or even malt itſelf; all which diſſolve but very imperfectly in hot water.

Yet malt, for its cheapneſs, is generally preferred in England, and brewed for this purpoſe, much after the common manner of brewing for beer; only the worſt malt will ſerve for diſtillation; and the tincture, without the addition of hops, and the trouble of boiling, is here directly cooled and fermented.

The grain intended for brewing is previouſly malted, to prepare it for diſſolving more eaſily and copiouſly in the water, ſo as to afford a richer tincture or ſolution, which, after due fermentation, will yield about one half more of proof ſpirit than the tincture of an equal weight of unmalted corn.

Brewing is alſo uſed, in an ill ſenſe, for the counterfeiting and compounding eſpecially of wines. Vintners and wine-coopers are ſuſpected of brewing wines, or mixing divers inferior ſorts, to imitate ſome better kind. The neceſſity of accommodating their liquors to the palates of their gueſts, is another cauſe of brewing; inſomuch that ſome have confeſſed they commonly draw out of two or three caſks for every pint.

Brewing, the appearance of a collection of black and tempeſtuous clouds, ariſing gradually from a part of the horizon, being an indication of an approaching ſtorm.

BREWINGTON, Fort, in *Geography*, lies in the townſhip of Mexico, New-York, and at the weſt end of lake Oneida, about 24 miles S.E. from fort Oſwego.

BREWOOD, or Breewood, a market town of Staffordſhire, England, conſiſts of 581 houſes, and 2863 inhabitants, the greater number of whom are engaged in the iron manufactories. The biſhop of the dioceſe had formerly a ſeat here, and a ſmall Benedictine nunnery was founded here in the time of Richard I. A large free grammar ſchool is eſtabliſhed in this town. Here are a market on Fridays, and one fair annually. Gough's edit. of Camden's Britannia, vol. ii.

BREY, a ſmall town of Germany, in the circle of Weſtphalia, and biſhopric of Liege, ſeated on the river Neer, 29 miles N. of Liege.—Alſo, a town of Upper Guelderland, 6 miles W. of Venlo.

BREYDA Fiordur, a bay of Iceland, in the weſt quarter, and in the diſtrict called Dala-Syſſel.

BREYDEL, Charles, called *Cavalier*, in *Biography*, a painter of landſcapes, was born at Antwerp, in 1677, and remained under the inſtruction of old Ryſbrack, the landſcape painter, for three years, after which period he became, in conſequence of his cloſe application, competent to commence the practice of his art. Having been diverted from his purpoſe of viſiting Italy, by the encouraging reception which he met with at Frankfort and Nuremberg, he ſpent two years with his brother, Francis Breydel, at the court of Heſſe-Caſſel; and he afterwards went to Amſterdam, where he copied ſeveral views of the Rhine, from the deſigns of Griffier, and thus improved his colouring, pencilling, and taſte of deſign, ſo that the works of this artiſt may be regarded as his ſecond and beſt ſchool. At length he ſettled at Ghent, where his performances were much admired; but he was reduced, by extravagance in his dreſs, furniture, and table, to the neceſſity of earning money expeditiouſly, and to multiply pictures much inferior in deſign and execution to others, which had been produced by his pencil. His health declined towards the cloſe of his life; and his performances, during the intervals of eaſe which he enjoyed, amidſt recurring paroxyſms of the gout, wanted the ſpirit, delicate finiſhing, and firmneſs of touch of his better days. Whilſt the ideas and ſtyle of Griffier were his models, his pictures, which were views of the Rhine, were well deſigned, neatly executed, and excellently coloured. But he changed this manner, in order to imitate Velvet Breughel, whoſe works were univerſally admired, and ſelected for his ſubjects battles, ſieges, and encampments. He often copied the prints of Vandermeulen; but afterwards compoſed very readily in this ſtyle, without borrowing from any other artiſt. His beſt pictures are full of ſpirit, his touch is firm and well adapted to his ſtyle, and his deſign is correct. Some of them appear too laboured, but others are full of harmony. He died in 1744. Pilkington.

Breydel, Francis, brother of the preceding, was born at Antwerp, in 1679; and is ſuppoſed to have been a diſciple of old Ryſbrack. At an early age he excelled in portraits, and was appointed painter to the court of Heſſe-Caſſel, where his works were held in high eſtimation. From Heſſe-Caſſel he removed to England, and continued here for ſeveral years, with his friend Vandermyn. Beſides portraits, he painted converſations, feaſts, aſſemblies, and carnavals; and his converſations, as well as his other compoſitions, are finely executed, agreeably coloured, and well diſpoſed. This artiſt died in 1750. Pilkington.

BREYER, in *Geography*, the name of an iſland on the coaſt of N. America. N. lat. 44° 19′. W. long. 66° 25′.

BREYNIA, in *Botany*, (in memory of Jac. Breynius, and his ſon, Jac. Phil. Breynius, both celebrated botaniſts). Forſter 73. Schreb. 1605. La Marck Illuſt. 860. Claſs, *polygamia diœcia*.

Gen. Char. 1. Complete flowers. *Cal.* perianth one-leaved, top-ſhaped, minute, with ſix ſegments; ſegments, concave, blunt, cloſely converging, depreſſed, flat at the end, ſo that it is pervious only by a ſmall hole. *Cor.* none. *Stam.* filaments none; anthers five, linear, erect, faſtened longitudinally to the ſtyle, approximating. *Piſt.* germ, very ſmall. Style cylindric, as long as the calyx; ſtigma obtuſe. *Pericarp.* berry, dry, globoſe, three-celled, ſupported by the perianth, now increaſed to three times its former ſize, and ſpreading very wide. *Seeds*, two in each cell, convex at the back, flat on the ſides. 2. Stameniferous flowers. *Cal.* one leaved, with five ſegments; ſegments roundiſh, concave, nearly equal. *Cor.* none. *Nectary*, five glands, on ſhort pedicells, alternate with the ſtamens. *Stam.* filaments five, very ſhort; anthers roundiſh, as long as the calyx. 3. Piſtiliferous flowers. *Cal.* and *Cor.* as in the ſtameniferous. *Piſt.* germ globoſe; ſtyle none; ſtigmas five, obcordate, reſembling petals. *Pericarp.* five-celled. *Seeds*, ſolitary, rather three-ſided. Native of New Caledonia and Tannan, in the South Seas.

Breynia, (Brown). See CAPPARIS CYNOPHALLOPHORA, and SILIQUOSA.—(Jacquin). See CAPPARIS BREYNIA.

Breynia, (Pet.) See SERIPHIUM CINESEUM, and PLUMOSUM.

BREYRELDE, in *Geography*, a town of Flanders, 8 miles S. of Aloſt.

BREYSICH. See Brisich.

BREZAN, a town, having a caſtle, of Poland, in the palatinate of Lemberg, and diſtrict of Halicz.

BREZE, a town of France, in the department of the Mayne and Loire, 8 miles S. of Saumur.

BREZOLLES, or Bressolles, a town of France, in the department of the Eure and Loire, and chief place of a canton in the diſtrict of Dreux; 4 leagues W. of Dreux. The place contains 810, and the canton 9951 inhabitants: the territory comprehends 267½ kiliometres, and 22 communes.

BREZOWA, a populous town of Lower Hungary, in the Ujhely diſtrict. The inhabitants follow agriculture and handicrafts.

BRIAC, St., a town of France, in the department of the Ille and Vilaine, and in the diſtrict of St. Malo, 1½ league W. of St. Malo.

BRIACK *iſland*, about 2 miles long from N.N.E. to S.S.W. lies on the coaſt of France, in the Engliſh channel. See Brehat.

BRIADEN, a town of Aſiatic Turkey, in Syria, 100 miles N.N.E. of Damaſcus.

BRIANçON, a town of France, and chief place of a diſtrict, in the department of the Higher Alps, ſituate on the Durance, ſurrounded with rocks and mountains, and defended by forts and redoubts; 14 leagues N.N.E. of Gap. The place contains 2976, and the canton 7187 inhabitants; the territory includes 257½ kiliometres and 8 communes. N. lat. 44° 46'. E. long. 6° 45'.

BRIANçONNET, a fortreſs of Savoy, in the Tarentaiſe, near the town Mouſtiers, ſituate on a rock which is inacceſſible, except by the ſide of a river, where it is aſcended by 200 or 300 ſteps. The common paſſage from Savoy to the Tarentaiſe and Italy is by this fortreſs.

BRIANçONNOIS, the name, before the revolution, of a diſtrict of France, in the province of Dauphiny, about 12 leagues long and 6 wide, comprehending ſeveral vallies, which are ſituated among the Alps. The air is cold in winter, and warm in ſummer. The inhabitants are ſober, active, induſtrious; they cultivate ſome wheat and fruit, and feed flocks of ſheep; they gather manna from the trees, and make ſome wine. This diſtrict now forms a part of the department of the Lower Alps. Its inhabitants were formerly known to the Romans under the appellation of Brigantes.

BRIANSK. See Bransk.

BRIANZA, mountains of Italy, near the lake of Como, in the Milaneſe.

BRIAR, in *Botany*, a name given to many ſpecies of the roſe.

Briar *Creek*, in *Geography*, a water of Savannah river, in Georgia; the mouth of which is about 50 miles S.E. by S. from Auguſta, and 55 north-weſterly from Savannah.

BRIARE, a town of France, in the department of the Loiret, and chief place of a canton, in the diſtrict of Gien, ſeated on the Loire, and 2 leagues S.E. of Gien. The place contains 1655, and the canton 7700 inhabitants; the territory includes 330 kiliometres, and 14 communes. At this town commences the canal, which unites the Loire and Seine. N. lat. 47° 40'. E. long. 2° 45'.

BRIAREUS, in *Fabulous Hiſtory*, a giant, the ſon of Æther, Titan, or Cœlus, and Terra. This was his celeſtial appellation; on earth he was called "Ægeon." Jupiter derived ſingular ſuccour from him, when Juno, Pallas, Neptune, and the other gods, endeavoured to bind him in chains, and to dethrone him; though he afterwards conſpired with his brethren, the giants, to dethrone Jupiter. Virgil deſcribes him (Æn. x. 365.) on this occaſion, as having 100 hands, 50 heads, and breathing out fire. According to the fable, Jupiter puniſhed him by throwing him under Mount Ætna, which, as often as he moves, belches out fire.

Briareus, in *Natural Hiſtory*, a ſpecies of Gorgonia, found in the Weſt Indian ſeas. This kind is ſubramoſe, round, thick, riſing from a broad dilated baſe; the fleſh white within; externally grey; florets large, bearded, with eight tentacula; bone compoſed of ſmall glaſſy needles of a purple colour irregularly, and compactly diſpoſed in a longitudinal manner. Ellis, Solander, &c.

BRIASCA, in *Geography*, a town of European Turkey in Moldavia; 76 miles E. of Jaſſi.

BRIATEXTE, a town of France, in the department of the Tarn, and the diſtrict of Lavaur: 1½ league N.E. of Lavaur.

BRIATICO, a town of Naples, in the province of Calabria Ultra; 11 miles N.E. of Nicotera.

BRIBACH, a river of Swabia, in the Black foreſt, which riſes near the ſource of the Danube, and unites with the Brege below the town of Doneſchingen.

BRIBE, a reward given to pervert the judgment, or corrupt the conduct. See Bribery.

The word is French, *bribe*, which originally denotes a bit, fragment, or relic of meat taken off the table; on which footing, bribe imports as much as *panis mendicatus*, and ſtill keeps up the idea of the matter whereof bribes anciently conſiſted. Hence alſo the Spaniards uſe *bribar* and *brivar* for *begging;* and *brivia*, *brivoneria*, and *brivoniſmo*, for *beggary*. Menag. Orig. Franc. p. 131. Skinner Etym. in voc. In *Middle Age Writers*, a bribe given to a judge, is called *quota litis;* and the receiver, *campi particeps*, or *cambi particeps;* becauſe the ſpoils of the field, i. e. the profits of the cauſe, were thus ſhared with the giver. Du-Cange. Gloſſ. Lat. tom. i.

BRIBERY, in *Common Law*, is when a perſon, occupying a judicial place, takes any fee, gift, reward, or brocage, for doing his office, or by colour of his office, except of the king only. In a larger ſenſe, bribery denotes the receiving or offering of any undue reward, to or by any perſon concerned in the adminiſtration of public juſtice, as an inducement for acting contrary to duty; and ſometimes it ſignifies the taking or giving of a reward for a public office.

In the eaſt it is the cuſtom never to petition any ſuperior for juſtice, kings not excepted, without a preſent; a practice adapted to the genius of deſpotic countries. The Roman law, though it contained many ſevere injunctions againſt bribery, as well for ſelling a man's vote in the ſenate or other public aſſembly, as for the bartering of common juſtice, nevertheleſs tacitly encouraged this practice; becauſe it allowed the magiſtrate to receive ſmall preſents, provided they did not in the whole amount exceed a hundred crowns in the year. Plato, in his Ideal Republic (De Leg. l. 2.) more wiſely orders thoſe who take preſents for doing their duty to be puniſhed in the ſevereſt manner: and by the laws of Athens, the offerer as well as the receiver of a bribe were proſecuted. In England, this offence of taking bribes is puniſhed, in inferior officers, with fine and impriſonment; and in thoſe who offer a bribe, though not taken, the ſame. (3 Inſt. 147.) But in judges, eſpecially the ſuperior ones, it has been always regarded as a very heinous offence; inſomuch, that anciently it was puniſhed as high treaſon, and the chief juſtice Thorp was hanged for it in the reign of Edw. III.; and at this day it is puniſhable with forfeiture of office, fine, and impriſonment. By ſtatute

11 Hen. IV. all judges and officers of the king, convicted of bribery, ſhall forfeit treble the bribe, be puniſhed at the king's will, and be diſcharged from the king's ſervice for ever.

Officers of the cuſtoms taking any bribe, whereby the crown may be defrauded, forfeit 100l., and are rendered incapable of any office; and the perſon giving the bribe or offering any bribe to officers of the cuſtoms, to induce them to connive at the running of goods, ſhall forfeit 50l. See Customs. Candidates that bribe electors, after the date or *teſte* of the writs, or after the vacancy, by giving or promiſing any money or entertainment, are diſabled to ſerve for that place in parliament; and he that takes as well as he that offers a bribe, forfeits 500l. and is for ever diſabled from voting, and holding any office in any corporation, unleſs, before conviction, he diſcovers ſome other offender of the ſame kind, whereby he is indemnified for his own offence. The oath againſt bribery in the election of members of parliament, is as follows: "I do ſwear, I have not received, or had, by myſelf, or any perſon whatſoever, in truſt for me, or for my uſe and benefit, directly or indirectly, any ſum or ſums of money, office, place, or employment, gift, or reward, or any promiſe or ſecurity, for any money, office, employment, or gift, in order to give any vote at this election." Upon this oath, archdeacon Paley (Principles of Moral and Political Philoſophy, vol. i. p. 208.) remarks, that the ſeveral contrivances to evade this oath, ſuch as the electors accepting money under colour of borrowing, and giving a promiſſory note, or other ſecurity for it, which is cancelled after the election; receiving money from a ſtranger or a perſon in diſguiſe, or out of a drawer or purſe, left open for the purpoſe; or promiſes of money to be paid after the election; or ſtipulating for a place, living, or other private advantage of any kind; if they eſcape the legal penalties of perjury, incur the moral guilt: for they are manifeſtly within the miſchief and deſign of the ſtatute, which impoſes the oath; and within the terms indeed of the oath itſelf; for the word "indirectly" is inſerted on purpoſe to comprehend ſuch caſes as theſe. See Parliament. Blackſtone's Comm. vol. i. p. 179. vol. iv. p. 139.

BRIBEKOU, in *Geography*, a town of Africa, on the Gold Coaſt.

BRIBIESCA. See Briviesca.

BRICE, St., a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Fougeres; 2½ leagues N. W. of Fougeres. The town contains 1193, and the canton 13,830 inhabitants; the territory comprehends 150 kiliometres, and 11 communes.—Alſo, a town of France, in the department of the Seine and Oiſe; 3 leagues N. of Paris.—Alſo, a town of France, in the department of the Yonne; 2 leagues S. E. of Auxerre.—Alſo, a town of France, in the department of the Marne, and in the diſtrict of Reims; 1 league N.W. of Reims.

BRICHERASCO, a town of Piedmont, in the diſtrict of the Four Vallies; 2½ miles S. S. W. of Pignerolo.

BRICIANI, *Knights of St. Bridget*, a military order, reſembling that of Malta, eſtabliſhed by St. Bridget, princeſs of Sweden, in 1366, and approved of by pope Urban V. who gave it the rule of St. Auguſtin. The arms of the Briciani were a croſs azure, like that of the knights of Malta; under which was a tongue of fire, to expreſs the ardour of their zeal: their office was to fight againſt heretics, bury the dead, aſſiſt widows and orphans, &c.

BRICK, a kind of factitious ſtone, compoſed of an argillaceous earth, tempered and formed in moulds, dried in the ſun, or burnt in kilns.

The uſe of bricks is of the higheſt antiquity. The earlieſt buildings of Aſia were of bricks, dried in the ſun, and cemented with bitumen. In this manner, we learn from the hiſtorical books of the Old Teſtament, Nineveh was built by Nimrod; and the famous walls of Babylon, reckoned by the Greeks among the wonders of the world, were of the ſame materials.

Unburnt bricks were uſed in Egypt: the making of them was one of the oppreſſions to which the Iſraelites were ſubjected during their ſervitude in that country. The antique edifices which at preſent exiſt in Egypt are principally of ſtone: however, Pococke deſcribes a pyramid of unburnt brick, called "Kloube-el-Menſhieh (the bricks of Menſhieh), from a village near, called Menſhieh-Daſhour. It was doubtleſs built near the plain, on account of the bricks, which ſeem to be made of the earth brought by the Nile, being of a black ſandy earth, with ſome pebbles and ſhells in it. It is mixed up with chopped ſtraw, in order to bind the clay together; as they now make unburnt bricks in Egypt, and many other eaſtern parts, which they uſe very much in their building. I found ſome of theſe bricks 13½ inches long, 6½ inches broad, and 4 inches thick; and others 15 inches long, 7 inches broad, and 4¾ inches thick. I obſerved on the north ſide the bricks were laid lengthways from north to ſouth, but not every where in that direction; however, I particularly took notice that they were not laid ſo as to bind one another. It is much crumbled and ruined, but as it is I meaſured it, and found it to be 157 feet on the north ſide, and 210 feet on the weſt ſide; it is 150 feet high. By what I could judge, from the preſent ſlope of it, I concluded that it was built with five degrees, like the pyramid of Saccara, each being about 10 feet broad and 30 deep, ſo that the aſcent to it is eaſy, as the bricks are crumbled away."

The Greeks and Romans alſo uſed this material, both ſun-dried and burnt. Vitruvius inſtances ſeveral celebrated buildings, as the walls of Athens; the cells of the temples of Jupiter and Hercules, which were of brick, the ſurrounding columns and entablature being of ſtone; the ancient walls of Arezzo in Italy; the houſe built by the Attalic kings at Tralles, which was always given for the habitation of thoſe who bore the office of prieſts in that city. The paintings which were brought from Lacedæmon to ornament the Comitium, in the edileſhip of Varro and Murena, were cut from walls of brick; the houſe of Crœſus at Sardis; and the celebrated tomb of Mauſolus, in which, though the ornaments were all of Proconneſian marble, the walls were built of brick, and (ſays Vitruvius) remain to this time exceedingly ſubſtantial, and the incruſtation appears as poliſhed and ſhining as glaſs.

The following directions for making unburnt bricks are given by Vitruvius. They ſhould not be made of ſandy, ſtony, or gravelly loam, for ſuch kind of earth renders them heavy; and upon being wetted with rain after being laid in the wall, they ſwell and diſſolve, and the ſtraw which is put in them does not adhere on account of their roughneſs: the earth of which they are formed ſhould be light chalky white or red. They ſhould be made in ſpring or autumn, as being the beſt time for drying; for the intenſe heat of ſummer parches the outſide before the inſide is dry, which afterwards drying in the building, cauſes them to ſhrink and break. They are beſt when made two years before they are uſed, as they cannot be ſufficiently dry in leſs time. If they are uſed when newly made and moiſt, the plaſter work which is laid on them remaining firm and ſtiff, and they ſhrinking, and conſequently not preſerving the ſame height with the incruſtation, it is by ſuch contraction, looſened and ſeparated. At Utica, therefore, the laws allow no bricks to be uſed before they have lain to dry five years.

Vitruvius proceeds to deſcribe the different kinds of bricks, which were of three ſizes; the firſt, called *didoron*, were in general uſe among the Romans; they were a foot long, and half a foot broad. The other two ſorts were uſed by the Greeks; one called *tetradoron*, which were on every ſide four palms, or one foot; the other *pentadoron*, five palms, or fifteen inches every way: the firſt were uſed in private, and the latter in public edifices. They had alſo half bricks of each ſort; and in building, the whole bricks were laid in one courſe, and the half in the next.

At Pitane in Aſia, at Calentum in Spain, and at Marſeilles, they had bricks ſo light as to ſwim on water, the earth of which they were made being of the nature of pumice ſtone.

When Vitruvius mentions bricks, it appears that he means ſun-dried bricks; for he obſerves, that bricks could not be uſed by the Romans within the city; as to ſave room in ſo crowded a town, the laws did not permit any walls in public places to be made thicker than one foot and a half, while brick walls of that thickneſs would not ſupport more than one ſtory. Accordingly, the walls were built with hewn ſtone, *teſtaceous ſubſtances* (ſtructuris teſtaceis,) or rubble. That theſe teſtaceous ſubſtances were tiles, is evident, for he obſerves, that it could not be known at firſt whether they were of good loam and well burnt, but that they ſhould be laid in a roof during a winter and ſummer before they were uſed in a wall.

Auguſtus boaſted that he had found Rome of brick, and left it of marble. It could be only ſun-dried bricks that he referred to, for baked bricks were uſed in the moſt ſumptuous edifices: the temple of Peace, the Pantheon, and all the Thermæ were of this material.

Whatever may be the preciſe time of the introduction of baked bricks in the edifices of Rome, they appear to have been always ſquare. M. Quatremere de Quincy, in the Encyclopedie Methodique, obſerves, that in his reſearches among the antique buildings of Rome, he has found bricks of three ſizes. The leaſt were $7\frac{1}{2}$ inches ſquare, and $1\frac{1}{2}$ thick; the medium ones $16\frac{1}{2}$ inches ſquare, and from 18 to 20 lines in thickneſs; and the larger ones 22 inches ſquare, by 21 or 22 lines thick. The ſmaller bricks were employed to face walls of rubble work; and to make a better bond with the wall, they were cut diagonally into two triangles, the longer ſide was placed on the outſide, and the point towards the interior of the work. To tie more effectually the facing with the rubble, they placed at every four feet in height one or two courſes of the large ſquare bricks. The large bricks were alſo uſed in the arches of openings or diſcharge, which were neceſſary in the building.

No long bricks, ſuch as are uſed at preſent, are found in antique conſtructions.

In modern times, bricks have been uſed in all countries. Chardin thus deſcribes the manufacture of bricks in Perſia. The material of Perſian buildings is bricks, either dried in the ſun or burnt in the fire. The tiles or bricks of earth are made in thin wooden moulds, 8 inches long, 6 wide, and $2\frac{1}{2}$ inches thick. The labourers temper with their feet the earth, which is generally mixed with ſtraw cut very ſmall, to give it more conſiſtence, and that the bricks may laſt longer and not break. They paſs the hands over the bricks to ſmooth them, after having dipped them in a veſſel of water mixed with ſtraw, ſtill finer than was at firſt uſed. Then taking off the mould they leave the bricks to dry for two or three hours, after which they are ranged over one another, where they remain till the drying is completed.

The baked bricks are made of two parts of earth and one of cinders well tempered together, in moulds larger than for the others. They leave them to dry in the ſun for ſeveral days, then place them in a large furnace, ranged one over the other, at ſome diſtance, which they fill with plaſter. They cloſe the furnace and light the fire, which is kept up for three days and nights.

Bricks have ſeveral advantages over ſtone as building materials. From their porous ſtructure they unite better with the cement uſed; they are lighter than ſtone, and not ſubject to attract damps and moiſture.

The earth proper for the manufacture of bricks is a clayey loam, neither abounding too much in ſand, which renders the ware heavy and brittle, nor yet with too large a proportion of argillaceous matter, which cauſes it to ſhrink and crack in drying.

The general proceſs of the manufacture is as follows: The earth ſhould be dug in the autumn; it ſhould lie during the whole of the winter expoſed to the froſt, as the action of the air, in penetrating and dividing the particles of the earth, facilitates the ſubſequent operations of mixing and tempering. During this time the earth ſhould be repeatedly turned and worked with the ſpade. In the ſpring the clay is broken in pieces, and thrown into ſhallow pits, where it is watered and ſuffered to remain ſoaking for ſeveral days. The next ſtep is that of tempering the clay, which is generally performed by the treading of men or oxen. In the neighbourhood of London, however, this operation is performed by means of a horſe-mill. The tempering of the clay is the moſt laborious part of the proceſs, and that on which the perfection of the manufacture eſſentially depends. It is to neglect in this part, that we are chiefly to attribute the bad quality of modern bricks, in compariſon with the ancient. All the ſtones ſhould be removed, and the clay brought to a perfectly homogeneous paſte, uſing the leaſt poſſible quantity of water.

The following experiment, made by M. Gallon, merits attention. He took a certain quantity of the earth, prepared for the making of bricks; he let it remain for ſeven hours, then cauſed it to be moiſtened and beaten during the ſpace of thirty minutes: the next morning the ſame operation was repeated, and the earth was beaten for thirty minutes; in the afternoon it was again beaten for fifteen minutes. Thus this earth had only been worked for an hour and a quarter longer than uſual, but at three different times. The material had acquired a greater denſity by this preparation; for a brick made with this earth weighed five pounds eleven ounces, while another brick, made in the ſame mould, of the earth that had not received this preparation, weighed only five pounds ſeven ounces. Then having dried theſe bricks in the air, during the ſpace of thirteen days, and having burnt them along with others, without any particular precautions, they were examined when taken from the kiln, and it was found that the bricks made of the earth which had been the moſt worked ſtill weighed four ounces more than the others, each having loſt five ounces by the evaporation of the moiſture. But their ſtrength was very different; for on placing them with the centre on a ſharp edge, and loading the two ends, the bricks formed with the well tempered earth, were broken with a weight at each end of 65 pounds or 130 pounds in all, while the others were broken with 35 pounds at each end, or 70 pounds in the whole.

The earth being ſufficiently prepared in the pits, is brought to the bench of the moulder, who works the clay into the brick-moulds, and ſtrikes off the ſuperfluous earth. The bricks are delivered from the mould and ranged on the ground; and when they have acquired a ſufficient hardneſs to admit of handling, they are dreſſed with a knife, and ſtaked or built up in long dwarf walls, and thatched over, where they remain to dry.

The burning of bricks, which is the next operation, is performed either in a kiln or a clamp. In the former, the bricks being ſet in, and the kiln covered with pieces of brick, they put in wood to dry them with a gentle fire; and this they continue till they are pretty dry, which is known by the ſmoke turning from a whitiſh to a thin black ſmoke. They then ceaſe to put in wood, and proceed to burn with bruſh, furze, ſtraw, brake, or fern faggots, having firſt cloſed up the mouth of the kiln with a thin log (pieces of brick piled upon one another and cloſed with wet brick earth inſtead of mortar), then they continue to put in more faggots till the kiln and its arches look white, and the fire appears at the top, upon which they ſlacken the fire for an hour, and let all cool by degrees. Thus they continue alternately heating and ſlacking, till the ware be thoroughly burnt, which is uſually effected in 48 hours.

About London they burn in clamps, built of the bricks themſelves, after the manner of arches in kilns, with a vacancy between each brick's breadth, for the fire to play through; but with this difference, that inſtead of arching, they gather the flues over by making the bricks project over one another. The place for the fuel is carried up ſtraight on both ſides till about three feet high; they then nearly fill it with wood, and over that lay a ſtratum of ſea coal, and then overſpan the arch; ſea-coal is alſo ſtrewed between every row of bricks in the clamp; laſtly, they kindle the wood which communicates with the coals; and when all is burnt out, they conclude that the bricks are ſufficiently burnt.

The proper burning of bricks is a matter of conſiderable difficulty, and requires an experienced workman; as it is neceſſary to maintain an equal heat throughout the whole maſs, neither too little, which would leave the bricks weak and crumbly, nor too great, which would cauſe them to run together into a vitrified ſlag. This operation is much better performed in kilns than in clamps, as the fire can be kept up and regulated at diſcretion; while in clamps, as the whole of the fuel muſt be put in at once, the manufacturer is always tempted to uſe too little, and the outſide bricks are neceſſarily under-burnt. Theſe are called ſamel bricks, and are ſold at an inferior price.

The legiſlature has often interfered to regulate the manufacture of bricks. By ſtat. 12 Geo. I. cap. 35, earth or clay, deſigned for making bricks for ſale, ſhall be dug and turned at leaſt once between the 1ſt of November and the 1ſt of February, and not be made into bricks till after the 1ſt of March, and no bricks be made for ſale but between the 1ſt of March and 29th of September. But by ſtatute 10, Geo. III. cap. 49. earth may be dug for making bricks at any time in the year, provided ſuch earth be turned once before it be made into bricks. And by the former ſtatute, no Spaniſh is to be mixed with the earth or breeze uſed in the burning of bricks: and all bricks are to be burnt either in kilns, or diſtinct clamps, each ſort by itſelf.

By ſtat. 3 Geo. II. cap. 22. there may be mixed with the brick-earth any quantity of ſea-coal aſhes, ſifted or ſcreened through a ſieve or ſcreen half an inch wide, and not exceeding 20 loads, to the making of 100,000 bricks, each load not exceeding 36 buſhels. And breeze may be mixed with coal in the burning of bricks in clamps for ſale, &c. Stock-bricks and place-bricks may be burnt in one and the ſame clamp, ſo that the ſtock-bricks be ſet in one diſtinct parcel, and not mixed and ſurrounded with place-bricks.

For the more effectually ſecuring the obſervation of theſe laws, it was enacted, by 12 Geo. I. cap. 35. for the better diſcovery of offenders, that the maſter and wardens of the company of tylers and bricklayers ſhould have power to ſearch brick-kilns, &c.; but they having permitted, and even encouraged divers perſons to make bricks contrary to the directions in the ſaid act, by 2 Geo. II. cap. 15. they are diveſted of that power, and any two, three, or more perſons, appointed by the juſtices of peace, are empowered, within 15 miles of London, to go in the day-time into any grounds, ſheds, or places where any clay or earth ſhall be digged or digging for bricks or pan-tiles, or any bricks or pan-tiles ſhall be making or made for ſale, and there to view, ſearch, and inſpect the ſame, &c. Offenders to forfeit 20s. for every thouſand of unſtatutable bricks, and 10s. for every thouſand of ſuch tiles; one moiety to the uſe of the proſecutor, the other to the poor of the pariſh where the offence ſhall be committed.

By 17 Geo. III. cap. 42. all bricks made for ſale ſhall, when burned, be not leſs than 8½ inches long, 2½ thick, and 4 wide.

By 43 Geo. III. c. 69. (conſolidating the exciſe duties) paſſed July 4, 1803, every thouſand of bricks made in Great Britain, not exceeding 10 inches long, 3 inches thick, and 5 inches wide, is liable to a duty of 5s. and exceeding the fore-mentioned dimenſions to 10s.; and every thouſand of bricks made in Great Britain, and ſmoothed or poliſhed on one or more ſides, not exceeding the ſuperficial dimenſions of 10 inches long by 5 inches wide, is ſubject to a duty of 12s. and if ſuch bricks exceed theſe dimenſions to the duty on paving tiles. The ſaid duties are to be paid by the makers. An additional duty of 10d. per thouſand was impoſed on bricks and tiles in the ways and means for the year 1805.

The different kinds of bricks made in this country are principally place-bricks, grey and red-ſtocks, marle facing bricks and cutting bricks. The place-bricks and ſtocks are uſed in common walling. The marles are made in the neighbourhood of London, and uſed in the outſide of building; theſe are very beautiful bricks, of a fine yellow colour, hard, and well burnt, and in every reſpect ſuperior to the ſtocks. The fineſt kind of marle and red bricks are called cutting bricks, they are uſed in the arches over windows and doors, being rubbed to a centre, and guaged to a height. There is alſo a fine kind of white bricks made near Ipſwich, which are uſed for facing, and ſometimes brought to London for that purpoſe. The Windſor bricks, or fire-bricks, which are made at Hedgerley, a village near Windſor, are red bricks, containing a very large proportion of ſand; theſe are uſed for coating furnaces, and lining the ovens of glaſs-houſes, where they ſtand the utmoſt fury of the fire. Dutch clinkers are alſo imported, long narrow bricks, of a brimſtone colour, very hard and well burnt; they are frequently warped, and appear almoſt vitrified by the heat. The uſe of them is for paving yards and ſtables.

BRICK-*walls*. See WALL.

BRICKS, *Oil of*. See OIL *of Olives*.

BRICK-*duſt*. It is a cuſtom with ſome perſons to reduce this ſubſtance to a very fine powder, and give it, inſtead of chalk, in the heart-burn. Many of the lozenges, ſo much famed for the cure of this diſorder, and ſold under the pompous name of coral lozenges, are only made of a mixture of this uncouth medicine, and ſugar, made into the conſiſtence of paſte, with gum tragacanth reduced to a mucilage with roſe-water.

BRICK is alſo uſed in ſpeaking of divers other matters made in the form of bricks.

In which ſenſe, we ſay a penny-brick, or brick-bread. Some alſo mention brick-tin, a ſort of tin in that ſhape brought from Germany; and brick-ſoap, made in oblong pieces, from a pound and a half to three pounds.

Brick, πλινθιον or πλινθια, *laterculus*, in the *Military Art*, denotes one of the forms of the Grecian army, which was drawn up in the figure of a brick or tyle, with four unequal ſides; its length being extended towards the enemy, and exceeding its depth. That of the brick inverted, denominated πυργος, *turris*, was an oblong ſquare, after the faſhion of a tower, with the ſmall end towards the enemy. Homer. Iliad. μ. v. 43.

Bricks, or Briques, in *Heraldry*, are figures or bearings in arms, reſembling a building of bricks; being of a ſquare form, like billets; from which they only differ in this, that they ſhew their thickneſs, which the other do not.

Brick *earth*, in *Agriculture*. See *Brickiſh* Soil.

Brick *kiln*, a place to burn bricks in.

Brick-*layer*, an artificer whoſe buſineſs it is to build with brick, or make brick work.

Brick-layers work or buſineſs, in London, includes tyling, walling, chimney work, and paving with bricks and tyles. In the country, it alſo includes the maſon's and plaiſterer's buſineſs. The materials uſed by brick-layers, are bricks, tyles, mortar, laths, nails, and tyle-pins. Their tools are, a brick-trowel, wherewith to take up mortar; a brick ax, to cut bricks to the determined ſhape; a ſaw, for ſawing bricks; a rub-ſtone, on which to rub them; alſo a ſquare, wherewith to lay the bed or bottom, and face or ſurface of the brick, to ſee whether they be at right angles; a bevel, by which to cut the under ſides of bricks to the angles required; a ſmall trannel of iron, wherewith to mark the bricks; a float ſtone, with which to rub a moulding of brick to the pattern deſcribed; a banker to cut the bricks on; linepins, to lay their rows or courſes by; plumb-rule, whereby to carry their work upright; level to conduct it horizontal; ſquare, to ſet off right angles; ten-foot rod, wherewith to take dimenſions; jointer, wherewith to run the long joints; rammer, wherewith to beat the foundation; crow and pick-ax, wherewith to dig through walls.

The London brick-layers and tylers make a regular company, which was incorporated in 1568, and conſiſts of a maſter, two wardens, twenty-eight aſſiſtants, and one-hundred and eight on the livery.

A brick-layer and his labourer will lay in a day about 1000 bricks, in whole work, on a ſolid plane, when the wall is but a brick and a half, or two bricks thick; and ſince a cubic yard contains 460 bricks, he will lay above two cubic yards in a day: and hence it may be eaſily computed how many brick-layers are required to finiſh a certain piece of work in a given time.

Brick-laying is one of the arts ſubſervient to architecture. Moxon has an exercise expreſs on the art of brick-laying, wherein he deſcribes the materials, tools, and methods of working uſed by brick-layers. See *Brick* Walls.

Brick-*work*. There is very little to be added under this head, to what has been ſaid in the preceding article, to which the reader is referred.

Bricks, when uſed in external walls, are generally worked in what is called Flemiſh bond, that is, with headers and ſtretchers alternately, and the courſes ſo diſpoſed, that the middle of the bricks of one fall over the joints of the next. Brick-work is meaſured by the ſquare foot reduced to the thickneſs of one brick and a half; thus a wall two bricks thick, ten feet long, and three feet high = 30 ſquare feet would be called 40 feet reduced. It is valued by the rod of 272 feet. Facing and gauged arches are meaſured by the ſuperficial ſquare foot, and cornices by the foot running or the length.

BRICKWELL, Charles, and James, in *Biography*, two brothers, who appear to have made their travels ſerve to the improvement of natural hiſtory. The elder publiſhed "A natural and political Hiſtory of Portugal," 8vo. London, 1726; the other, "A natural Hiſtory of Carolina," 8vo. 1739, Dublin, in which he gives a particular account of plants, indigenous to that country; and the ſame year, alſo at Dublin, "A Catalogue of American Trees and Shrubs, which will bear the Climate of England," fol. with engravings. Haller. Bib. Botan.

BRICON, in *Geography*, a town of France, in the department of the Upper Marne, and diſtrict of Chaumont; 7 miles W. of Chaumont.

BRICZANI, a town of European Turkey, in the province of Moldavia; 30 miles S.E. of Cokzim.

BRIDE, a woman juſt married, or a wife in the firſt days of her matrimonial ſtate. See Marriage.

Among the Greeks, the bride was uſually conveyed in a chariot from her father's houſe to that of her huſband in the evening, as the moſt convenient time for concealing her bluſhes; ſhe was placed in the middle, her huſband ſat on one ſide, and his intimate friend on the other; torches were carried before her, and in the proceſſion they were ſometimes accompanied by ſingers and dancers. When they arrived at the end of their journey, the axle-tree of the carriage was broken, ſignifying, by this action, that the bride was never to return to her father's houſe. The day on which the bride left her father's houſe was celebrated as a feſtival, diſtinct from the nuptial ſolemnity; which was kept at the houſe of the bridegroom, and began in the evening, at the time of the bride's arrival. A banquet was prepared for her reception, from reſpect due to the gods of marriage, who had been previouſly invoked, and that the marriage might be made public, as it was uſually attended by a concourſe of friends. Before the bride was conducted to the marriage-bed, which was richly adorned, according to the quality of the perſon, ſhe bathed her feet in water, which the Athenians fetched from the fountain "Callirhue," afterwards called Εννεακρουνος, from nine ciſterns, ſupplied by it with water; which water was brought by a boy nearly allied to one of the married pair. The bride was then lighted to bed with ſeveral torches, round one of which the married perſon's mother tied her hair-lace, taken from her head for this uſe, to which cuſtom Seneca alludes, Theb. v. 505. Whilſt the married couple were ſhut together in a chamber, the laws of Athens obliged them to eat a quince, thus intimating that their firſt converſation ought to be mutually agreeable; and then the huſband proceeded to looſe his bride's girdle, called ζωνη; during which time the young men and maids ſtood without the door dancing and ſinging ſongs, called επιθαλαμια, *epithalamia*. In the morning they returned again, and ſung other epithalamia. See Apaulia and Anacalypteria.

Among the Romans, the maid eſpouſed remained a *bride*, *ſponſa*, till ſhe entered the huſband's houſe; from which time ſhe commenced a wife, *uxor*.

The bridegroom was attended by a brideman, *paranymphus*; the bride by a *pronuba*, or bridemaid, whoſe buſineſs was to inſtruct her young miſtreſs in the duties of the genial bed, and to prepare every thing for a proſperous copulation.

The ancient ceremonies practiſed in reſpect of a bride were numerous; moſt of them emblematical, or ſignificant of ſome part of her duty; as, dreſſing her hair after a peculiar manner, and parting it with a ſpear; putting on her a crown; girding her with a girdle, which the bridegroom was to looſen; putting a yoke on her neck; dreſſing her in yellow ſocks;

ſock; and veiling her with the *flammeum*. She was to ſeem to be raviſhed or torn by force from her mother, in memory of the rape of the Sabines under Romulus; ſhe was to be carried home in the night-time to the bridegroom's houſe, accompanied by three boys, called *patrimi* and *matrimi*, one of whom carried a torch, and the other two, called *paranymphi*, led the bride, a ſpindle and a diſtaff being carried with her: ſhe brought three pieces of money, called *aſſes*, in her hand to the bridegroom, whoſe doors, on this occaſion, were adorned with flowers and branches of trees: being here interrogated who ſhe was, ſhe was to anſwer, *Caia*, in memory of Caia Cæcilia, wife of Tarquin the Elder, who was an excellent *lanifica*, or ſpinſtreſs; for the like reaſon, before her entrance, ſhe lined the door-poſts with wool and ſmeared them with greaſe.

Fire and water being ſet on the threſhold, ſhe touched both; but ſtarting back from the door, refuſed to enter, till at length ſhe paſſed the threſhold, being careful to ſtep over, without touching it; here the keys were given her; a nuptial ſupper was prepared for her, and minſtrels to divert her; ſhe was ſeated on the figure of a Priapus, and here the *patrimi* and *matrimi* reſigned her to the *pronubæ*, who brought her into the nuptial chamber, and put her into the genial bed. This office was to be performed by matrons who had only been once married, to denote that the marriage was to be for perpetuity. When the bridegroom was brought to her, epithalamia were ſung by the women, who were divided for that purpoſe into two bands, one whereof ſung in the evening, the other the next morning; and, for the like purpoſe, nuts were alſo thrown about for the boys to ſcramble for. Potter Archæol. lib. iv. cap. 11. tom. ii. Val. Max. 10. Plut. Quæſt. Rom. 30. Serv. ad Æn. lib. iv. ver. 450. Ken. Rom. Ant. p. ii. lib. i. c. 9. Fabr. Bibl. Ant. cap. 10. § 5.

Bride, in *Geography*, the name of a river in Ireland, which riſes in the Nagle mountains, county of Cork, and having paſſed near the towns of Rathcormuck and Tallow, from the latter of which it is navigable, joins the Blackwater about 8 miles above Youghall.

Bride, in *Ichthyology*, a French name of the fiſh called by Linnæus *Chætodon capiſtratus*, which ſee. *Sparus capiſtratus* of Linnæus alſo bears this name among the French.

Bride's *bay*, *St.* in *Geography*, a bay of St. George's channel, on the weſt coaſt of the county of Pembroke, in South Wales, having good anchorage in 7 to 10 fathoms; but as the weſterly winds cauſe a great ſea, in the mouth of the bay, the iſland of Ramſey affords ſhelter. This iſland is its northern limit, and Scaumore is its ſouthern point; and on the north of the bay is the city of St. David's. N. lat. 51° 48′. W. long. 5° 23′. In ſpring tides it has high water at 6 o'clock.

BRIDEGROOM, the ſpouſe or mate of a bride.

Among the Spartans, the bridegroom, as we are informed by Plutarch, in his "Lycurgus," (Op. t. i. p. 43. ed. Xylandr.) committed a kind of rape on his bride. After the preliminaries of marriage were ſettled, the woman, that conducted the buſineſs, ſhaved off the bride's hair cloſe to her ſkin, dreſſed her in man's clothes, and left her upon a mattraſs; whilſt ſhe was in this ſtate the bridegroom ſtole privately into the room, untied her virgin girdle, and took her into his embraces; and after a ſhort interval, he returned to his companions, with whom he continued to ſpend his life, remaining with them by night as well as by day, unleſs he ſtole a ſhort viſit to his bride, which he had no opportunity of doing without great circumſpection, and fear of being diſcovered.

Among the Romans, the bridegroom was decked to receive his bride; his hair was combed and cut in a peculiar form; he had a coronet or chaplet on his head, and was dreſſed in a white garment. Pitiſc. Lex. Ant. tom. i.

By the ancient canons, the bridegroom was to forbear the enjoyment of his bride the firſt night, in honour of the nuptial benediction given by the prieſt on that day. Johnſ. Eccleſ. Law. ann. 740. § 88.

In Scotland, and perhaps alſo ſome parts of England, a cuſtom, called marchet, obtained, by which the lord of the manor was entitled to the firſt night's habitation with his tenants' brides. See Borough *Engliſh* and Marchet.

BRIDEMIF, in the *Perſian Tables*, the conſtellation Lupus, or the Wolf.

BRIDEWELL, in our *Cuſtoms*, denotes a work-houſe, partly for the correction of vagrants and diſorderly perſons, and partly for the employment of the pariſh poor.

They are ſupplied during their abode here with cloathing and diet; and thoſe who are committed for correction are not only made to work, but according to their crimes, they receive occaſionally ſuch a number of ſtripes as the governor of the houſe of correction ordains.

Bridewell, near Fleet-ſtreet, is a foundation of a mixt and ſingular nature, partaking of the hoſpital, the priſon, and work-houſe; it was founded in 1553, by Edward VI. who gave the place, where king John had formerly kept his court, and which had been repaired by Henry VIII. to the city of London, with 700 marks of land, bedding, and other furniture. Several youths are ſent to this hoſpital as apprentices to manufacturers, who reſide there; they are clothed in blue doublets and breeches, with white hats. Having faithfully ſerved their time of ſeven years, they have their freedom and a donation of ten pounds each, for carrying on their reſpective trades.

BRIDGE, in *Architecture*, from the Saxon bꞃic, is a ſtructure of carpentry, maſonry, or iron-work, built over a river, canal, or valley, for the convenience of paſſing from one ſide to the other, and may be conſidered as a road ſupported in the air by arches or lintels, and theſe again ſupported by proper piers or butments.

Bridges generally form the continuation either of an highway or of a ſtreet; in the firſt caſe they are frequently built in a rude and cheap manner, and too often without proper attention to thoſe principles which would enſure permanence and ſolidity to the ſtructure; but when they take their lead or direction from a principal ſtreet in a capital city, their conſtruction is attended with great expence, and a degree of elegance and durability is required in their formation, which calls for the utmoſt judgment and ſkill in the architect. The magnitude of bridges alſo varies with their ſituation. When they are erected in places not much frequented, they are often, without any impropriety, made about eight or ten yards wide, but the breadth of a bridge for a great city ſhould at leaſt be ſuch as to allow a ſafe and eaſy paſſage for three carriages, and two horſemen abreaſt, and for three or four foot paſſengers in the ſame manner on each banquet.

A ſtately bridge over a large and rapid river, while it is one of the moſt difficult, is juſtly eſteemed one of the moſt noble and ſtriking ſpecimens of human art. To behold grand arches compoſed of an immenſe quantity of ſmall materials, ſo diſpoſed and united together as to form one compacted body, which, beſtriding the ſtream, affords above an ample communication with the diſtant ſhores, and allows below an uninterrupted paſſage to navigation, is enough to awaken the admiration of every ſpectator. The art of bridge-building, accordingly, has received conſiderable attention from writers on architecture, the earlieſt of whom is Alberti, who has given ſeveral judicious precepts, which, with little alteration, were afterwards laid down by Palladio, Serlio, and Scamozzi. The beſt of theſe rules are alſo given by Goldman and Bankhurſt, and by Hawkeſmoor in his hiſtory of London bridge. M. Gautier has a conſiderable volume upon bridges ancient and modern. M. Belidor has treated on this ſubject, in his "Archit. Hydraulique;" and M. Parent, in his "Eſſais and Recherches Mathemat." vol. iii. De la Hire, too, has touched upon the ſubject, in his "Traité de Mechanique;" Perronet alſo has given the reſult of his experience in a magnificent work, which has acquired great credit in France; Boſſut has given an excellent treatiſe in the "Memoires de l'Academie;" and Regemortes, in the year 1771, publiſhed an account of a bridge conſtructed by him on the river d'Allier at Moulins. This bridge conſiſts of thirteen arches, 64 feet ſpan each, and 24 feet high; ſemi-ellipſis.—The top of the bridge is level. Mr. Rion publiſhed, in 1760, "Short Principles for the Architecture of Stone Bridges;" and Mr. Semple has given ſome excellent practical remarks in his "Treatiſe on Building in Water," publiſhed in 1776. Other writers on the ſubject of arches and bridges, are Muller, Labelye, Atwood, Emerſon, and Dr. Hutton in his "Principles of Bridges."

Hiſtory of Bridges.—We have no records which will enable us to trace the art of bridge-building from its firſt rude and imperfect ſtate, through its various ſtages of improvement, to its preſent maturity and grandeur. It cannot, however, be doubted, that men in the earlieſt ages would do as our villagers do at preſent: the accidents of nature would preſent a model; a fallen tree, or a wave-worn cavern would frequently form a natural bridge, and the firſt bridges were compoſed of lintels of ſtone or wood, either of length ſufficient to ſtretch from bank to bank, or when this was impracticable, ſupported by piers or poſts placed in the bed of the river. There are ſtill conſiderable ſtructures of this kind in China, and many of them in this country on a rural ſcale. This method, however, would in many ſituations be oppoſed by inſuperable difficulties: the frequent piers required for the ſupport of lintels would, by contracting the water-way, increaſe a ſtrong current to a dangerous, rapid torrent, impeding navigation, and undermining and deſtroying the piers themſelves. It would, therefore, be found neceſſary, in conſtructing bridges over rapid rivers, to have the ſupports as few and diſtant, and the openings as wide as poſſible; this could only be effected by the uſe of arches of ſtone and truſſes of wood; accordingly theſe inventions muſt have been completed before bridges of importance had become common.

The origin of arches is ſo obſcure, and our lights ſo few, that it is, perhaps, impoſſible at this time to determine to whom this invention is due. The Egyptians, ſkilful as they were in architecture, do not appear to have poſſeſſed arches; their temples were roofed with ſlabs laid horizontally from column to column, and the openings covered with maſſy lintels, or, as in the paſſages within the great pyramid, with courſes of ſtones projecting over one another like inverted ſteps, till they met at top. Some of their tombs, however, which are excavated in the ſolid rock, have the appearance of vaults, as the ceilings are hollowed out in a circular form, and there are inſtances of hemiſpherical niches. Similar forms alſo prevail in the Hindoo excavations at Ellore, in the Deccan, and in the iſland of Salſette. See Mr. Daniel's Plates of Indian Antiquities and Hindoo Excavations. This practice, though its has the form, has not the principle of an arch; for it is evident that a ſolid lintel gains no ſtrength by being hollowed in the middle, neither is the execution more difficult; and though both the Hindoos and Egyptians attained this ſtep, they never, at leaſt there are no remains which authorize us to ſuppoſe that they ever did make any further progreſs in the diſcovery of arches.

The Chineſe are acquainted with the uſe of arches, and from the known adherence of this nation to ancient modes, we may attribute a very high antiquity to this practice among them. Their arches are of various forms, pointed, ſemicircular, ſemi-elliptical, and horſe-ſhoe ſhaped; their conſtruction, as deſcribed by Mr. Barrow, is curious, "each ſtone, from five to ten feet in length, is cut ſo as to form a ſegment of the arch, and, as in ſuch caſes there is no key-ſtone, ribs of wood fitted to the convexity of the arch are bolted through the ſtones by iron bars, fixed faſt into the ſolid parts of the bridge. Sometimes, however, they are without wood, and the curved ſtones are morticed into long tranſverſe blocks of ſtone." Mr. Barrow proceeds to obſerve, that "there are, however, arches wherein the ſtones are ſmaller, and pointed to a centre as in ours. I have underſtood from the late captain Pariſh, that no maſonry could be ſuperior to that in the great wall, and that all the arched and vaulted work in the old towers was exceedingly well turned."

However, the moſt ancient arches, of whoſe erection we have dates, are thoſe in the cloacæ of Rome, which were begun by Tarquinius Priſcus. There are alſo arches in ſeveral Greek theatres, ſtadia, and gymnaſia; among others, the theatre of Bacchus at Athens, erected, probably, 400 years before the Chriſtian era.

The Greeks, it is well known, often neglected the moſt neceſſary objects to laviſh enormous ſums on works of magnificence, though deſtitute of any eſſential utility. Pericles, ſo far from thinking of aqueducts, could never be prevailed upon even to conſtruct a bridge over the little Cephiſus. The Romans diſcovered, in this reſpect, a more ſolid manner of thinking; they were, it is true, much attached to pomp, but they never neglected works of public utility: they never riſked their lives unneceſſarily in croſſing a torrent, as the Athenians muſt have done previous to the arrival of the emperor Adrian; for it was Adrian who undertook to form, by a bridge, a ſafe communication acroſs the Cephiſus, between the territories of Attica and Eleuſis, on the moſt frequented road of Greece. While, therefore, we aſcribe to the Greeks the uſe of arches and vaults, properly conſtructed for covering various openings in their buildings, we muſt look to the Romans for the application of arches to bridges, and for the chief improvements in theſe uſeful ſtructures.

The conſtruction of the Roman bridges is beſt deſcribed by Bergier: they poſſeſſed all the requiſites which are met with in a modern bridge; they conſiſted of *pilæ*, or piers, *fornices*, or arches, *ſublices*, or butments, *pavimenta*, and *aggeres*; the roads over in the middle for carriages, on each ſide of which were *decurſoria*, or banquets, ſomewhat higher than the reſt of the road for foot paſſengers, and ſeparated from it by a *ſponde*, or railing, and ſometimes even covered over to ſhelter paſſengers from the rain, as in the Pons Ælius. Among the Romans, the building and repairing of bridges was firſt committed to the prieſts, thence named *pontifices*, then to the cenſors and curators of the roads, and laſtly, the emperors took the care of the bridges into their own hands.

The ancient bridges of Rome were eight in number. The bridge of *Fabricius*, which joins the iſland of the Tyber to the city; it is now called *Ponte Quatro Capi*, from the four heads of Janus, which are placed upon it. The bridge of *Ceſtius*, now called of *San Bartholomeo*, which from the other ſide of the iſland paſſes to Trans-Tevere. The firſt bridge built at Rome, which was of wood, and thence called *Pons Sublicius*, was afterwards rebuilt of ſtone by Æmilius

Lepidus; ſome veſtiges are ſtill to be ſeen at the bottom of the Aventine mountain. The bridge called *Senatorius*, and alſo *Palatinus*, of which ſome arches remain near to Santa Maria. The bridge of *Janiculus*, which, as it was rebuilt by Sixtus IV. is now called *Ponte Siſto*. The *Milvius*, now called *Ponte Molle*. There are alſo, near the hoſpital of Santo Spirito, the remains of the Triumphal Bridge, ſo named becauſe the proceſſion of the triumphs paſſed over it to go to the Capitol. Near to this is the bridge of Santo Angelo, formerly called *Pons Ælius*, from the Emperor Ælius Adrianus; it was repaired by Nicholas V. and afterwards ornamented with ſtatues by Clement IX. Of theſe bridges the laſt mentioned is the only one at all remarkable for ſize.

One of the moſt celebrated of the bridges of antiquity was that built by Trajan over the Danube. It was erected by that emperor for the conveniency of ſending ſuccours to the Roman legions on the other ſide of the Danube, in caſe they ſhould be ſuddenly attacked by the Daci, but demoliſhed by his ſucceſſor, Adrian, leſt the barbarians, overpowering the guards ſet to defend the bridge, ſhould, by means of it, pour into Mæſia and cut off the garriſons there. Some of the piers are ſtill to be ſeen in the middle of the river, near the town of Warhel in Hungary. According to the deſcription given by Dion Caſſius (lib. 68. cap. 13.) this bridge conſiſted of twenty piers of ſquared ſtone, each of them 150 feet high above the foundation, 60 feet in breadth, and 170 feet diſtant from each other, which was the ſpan or width of the arches, ſo that the whole length of the bridge was nearly 1500 yards. Conſiderable doubt, however, is thrown on this account by Montfauçon, who obſerves, that in the baſſo relievos of the Trajan column, this bridge is repreſented with only four piers beſides the abutments, which ſupport three larger arches or truſſes of wood, with two ſmaller ſtone arches at the extremities.

On the road from Loretto to Rome, at the bottom of the hill on which the town of Narni is ſituated, there are the broken remains of an ancient bridge, which appears to have been very magnificent. Its form and dimenſions are ſtated by Agoſtino Martinelli, in a book printed at Rome in 1676, entitled "Deſcrittione de diverſi Ponti eſſiſtenti ſopra la Fiume Nera & Tevere." This bridge which joined two mountains, between which flows the river Nera, was of an extraordinary height, and was built in this manner by Auguſtus, that the inhabitants of Narni might paſs on a level from one mountain to another. The whole length was 850 palms (637 feet). It conſiſted of four large and unequal arches; the firſt, which was entire in the time of Martinelli, while all the others were broken, was 100 palms (75 feet) in ſpan, and 150 palms (102 feet) in height; the ſecond arch 180 palms (135 feet) in ſpan; the third 152 palms (114 feet); and the fourth, which abutted againſt the other mountain, 190 palms, or 142 feet.

The *Pont du Garde*, about 3 leagues from Niſmes, is a very conſiderable Roman work. This ſtructure was at once a bridge over the river Gardon, and an aqueduct which carried water to Niſmes. The firſt row of ſix arches, which is the bridge, ſupports a ſecond arcade of 11 arches, which is continued upon the ſlope of the two mountains forming the valley; above the ſecond is a third arcade of 35 arches, much ſmaller than thoſe below, ſupporting the canal on a level with the two mountains, along which the water was conducted to Niſmes by a continued aqueduct. This remarkable edifice is built of ſtones of an extraordinary ſize, connected together without cement by iron cramps. The length of the firſt arcade is about 465 feet, of the ſecond 780, of the third 850, and the height from the river 190 feet.

The celebrated Roman bridge *Pont St. Eſprit*, near Lyons, has long been reckoned one of the fineſt and boldeſt of the ancient bridges in France. Its whole length is upwards of 800 yards; it is very crooked, bending in many places, and making ſeveral unequal angles, eſpecially in thoſe parts where the Rhone has the ſtrongeſt current. The arches are from 15 to 20 fathoms wide, and have their feet, or the bottoms of the piers, protected by two pedeſtals which project from them; the lower part of the piers conſiſts of ſeveral courſes of footings jutting out like ſteps. Between the great arches there are ſmaller arches like windows that come down nearly to the top of the pedeſtals, about the middle of the pier. This mode of conſtruction was adopted with a view of breaking gradually the mighty force of the Rhone, the ſeveral courſes of ſteps jutting out from the piers were intended to oppoſe and break the ſtream by portions, and prevent it from coming with its whole force at once upon the fabric; and when the flood ſhould riſe ſo high as to cover the ſteps and pedeſtals, then the ſmall window-like arches would aſſiſt to convey the water through, which might otherwiſe endanger the great arches.

The bridge of Brioude is of great antiquity, and very remarkable, as the largeſt ſtone arch with which we are acquainted. This bridge has only one arch, under which paſſes the whole ſtream of the river Allier. The arch is formed of two ranks of ſquared ſtones; all the reſt of the fabric is of rubble work. The two extremities of the arch are founded upon the rock, which occaſions the ſpringing on one ſide to be higher than on the other; its ſpan is 181 feet, and its greateſt height from the water to the ſoffit of the arch is 68 feet 8 inches, and the width of the bridge between the parapets is 13 feet.

In the middle ages bridge-building was reckoned among the acts of religion; and a regular order of hoſpitallers was founded by St. Benezet, towards the cloſe of the 12th century, under the denomination of pontifices or bridge-builders, whoſe office was to aſſiſt travellers by making bridges, ſettling ferries, and receiving ſtrangers in hoſpitals or houſes built on the banks of rivers. We read of a hoſpital of this kind at Avignon, where the hoſpitallers dwelt under the direction of their firſt ſuperior St. Benezet. The Jeſuit Raynaldus has a treatiſe expreſsly on Saint John the bridge-builder.

The bridge of Avignon was begun in the year 1176, and finiſhed in 1188; it conſiſted of 18 arches, and was about 1000 yards in length. Several of its arches have been deſtroyed by the rapidity of the current together with the force of the ice.

Over the ſeveral canals at Venice are laid nearly 500 bridges of different ſizes; the greater number of them are of ſtone. The chief of theſe, called the *Rialto*, is celebrated as a maſter-piece of art: it conſiſts of one flat and bold arch, nearly 100 feet ſpan, and only 23 feet high above the water, and was built in 1588 to 1591, after a deſign of Michael Angelo. The breadth of the bridge, which is 43 feet, is divided by two rows of ſhops into three narrow ſtreets, that in the middle being the wideſt; and there is in the centre an open archway, by which the three ſtreets communicate with one another. At each end of the Rialto is an aſcent of 56 ſteps; the view from its ſummit is very lively and magnificent. The whole exterior of the ſhops and the bridge is of marble. The foundation extends 90 feet, and reſts upon 12,000 elm piles. This ſtructure coſt the republic 250,000 ducats.

The aqueduct bridge of Alcantara, near the city of Liſbon, is one of the moſt magnificent works of the kind ever executed. It was begun in the reign of John V. king of

Portugal, in the year 1713, and finiſhed the 6th of Auguſt 1732. The architect, under whoſe inſpection it was begun and finiſhed, was the brigadier Manſel de Maya. The ſtreams which paſs through this duct, for the uſe of the inhabitants of the city of Liſbon and villages adjacent, have their chief ſupply from a ſpring near the Riberia de Caranque, about three leagues and a half from Liſbon, where the aqueduct commences; and the water is conveyed from thence through the hills by ſubterraneous paſſages, where ſome other ſprings unite with it, and acroſs many valleys on the tops of ranges of very magnificent arches, of which that croſſing the vale of Alcantara is the chief. From a ſubterraneous courſe the water is conveyed through the building on the top of the arches by means of two channels, each of which is about 12 inches deep; it generally flows about the depth of 7 inches, and is an abundant and never-failing ſupply of water to Liſbon. The interior height of the building is about 13 feet; and through the centre, between the ſtreams, is a wide handſome walk or foot-path, paved with beautiful free-ſtone. The building is continued the ſame height and width through the whole of the aqueduct from Liſbon to the ſpring, near the Riberia de Caranque, ſo that if by accident any part becomes out of repair, the workmen have eaſy acceſs to it. The ſubterraneous paſſages are lighted and ventilated by frequent openings made from the ſurface of the earth into the aqueduct; and over each of theſe openings turrets or ſquare towers are erected, which have windows latticed with iron bars to admit the light and air, and at the ſame time to prevent miſchievous perſons from throwing any thing into the building to injure it.

This pile is lighted and ventilated by 79 windows and 16 turrets; the former are three feet ſeven inches long by 13 inches wide, railed with iron and latticed with bars; the latter riſe 23 feet ſix inches above the roof, and are 16 feet ſquare; beneath every ſecond turret is an arched door-way into the aqueduct on each ſide of the building, wherein the water flows, and between that building and a parapet wall is a foot-path leading from Liſbon towards the very pleaſant village of Bemſique, about 4 miles from Liſbon, where ſeveral gentlemen have their quintas or country-ſeats: one in particular, the quinta of Gerard de Viſme eſq. an Engliſh merchant of the firſt eminence, muſt not paſs unnoticed; it is a perfect palais enchanté, whoſe ſhady bowers, beautiful gardens, fine ponds, purling ſtreams, and ſportive fountains, are frequently honoured with viſits by the queen and royal family.

The water channel under the grand arch is about 24 feet wide, and ſeven feet deep, but, except in very rainy ſeaſons, no water paſſes through this channel; the ſmall running ſtream conſtantly paſſing through the vale of Alcantara is conveyed by a very narrow channel under the pavement through the grand arch, and then continues its courſe through the valley, in a ſtream between two and three feet wide till it empties itſelf into the Tagus at Alcantara bridge, about the diſtance of two miles from the aqueduct. The expence attending the execution of ſo magnificent a work, and keeping the ſame in repair, has been immenſe, yet the ſmall tax of a ſingle rey on every pound of meat, raiſes a fund ſufficient for the purpoſe. There is a chapel ſeen through the eleventh arch, dedicated to Noſſa Senhora dos Terramotos, our Lady of the Earthquakes; in commemoration of that dreadful event the earthquake in 1755, when the greateſt part of the city of Liſbon, with moſt of her ſtately buildings, and magnificent temples, were levelled with the ground.

The width of the different Arches are as under:

Number.	WIDTH. Feet.	WIDTH. Inches.	Number.	WIDTH. Feet.	WIDTH. Inches.
1	22	0	19	44	4
2	29	0	20	36	5
3	43	0	21	36	5
4	43	0	22	36	5
5	56	0	23	36	5
6	60	0	24	29	2
7	70	0	25	29	2
8 Grand A.	108	5	26	29	2
9	72	0	27	29	2
10	65	10	28	29	2
11	65	10	29	29	2
12	65	10	30	21	10
13	54	8	31	21	10
14	54	8	32	21	10
15	54	7	33	21	10
16	44	4	34	21	10
17	44	4	35	21	10
18	44	4			

The height of the grand arch is 227 feet, and the total length of the piers and arches 2464 feet.

Several of the bridges in France are remarkable for their ſize and boldneſs of conſtruction, among which may be mentioned the bridge of Neuilly, built by M. Perronet, over the Seine, on the alignment of the great avenue of the Champs Elyſées, in front of the palace of the Tuilleries. This bridge, which is level at top, conſiſts of five equal arches of 120 feet French (128 feet Engliſh) in ſpan, and 30 feet French (32 feet Engliſh) riſe. The arches are oval, compoſed of eleven arcs of circles of different diameters; thus the upper portion of the arch was formed with a circle of 160 feet radius, which, by its ſettlement during the building, and after the ſtriking of the centres, was flattened, till it became an arc of a circle of 259 feet radius, differing ſo little from a platband, that, as Perronet obſerves, the riſe of the curve, in a length of 33 feet, amounted only to 6 inches 9 lines. The piers are 14 feet wide, and the breadth of the bridge 48 feet. It was begun in the year 1768, and terminated in 1780.

The bridge on the Seine, at Mantes, conſiſts of three arches, that in the centre having an opening of 120 feet French (128 Engliſh), and the two others 108 feet French (116 Engliſh); the piers being 25 feet 6 inches wide, and the abutments 29 feet. This ſtructure was begun by M. Hupeau in 1757, and completed by Perronet.

The bridge of Pont-Sainte-Maixence, on the river Oiſe, on the great road from Paris into Flanders, is alſo a work of Perronet's. This bridge, which is 41 feet wide, has three arches of 77 feet opening each, being a ſegment of a circle deſcribed with a radius of 118 feet. Each pier is ſingularly compoſed of four cylindrical pillars 9 feet diameter, leaving, therefore, three ſpaces or intercolumniations between them, which are arched over, the two external ones cloſed with a thin walling, and the middle one left open.

The bridge over the Loire, at Orleans, is compoſed of nine arches, which ſpring at 12 inches above low water; the middle arch is 106 feet in ſpan, with a riſe of 30 feet; the two arches at the extremities being 98 feet wide and 26 feet high, and the others in proportion; the four middle piers 19 feet, the four others 18 feet, and the abutments 23 feet 6 inches thick, making the whole length 1100 feet; the arches are oval, deſcribed from three centres. This bridge was built by M. Hupeau, begun in 1750, and finiſhed in 1760.

We have many bridges of conſiderable note in our own country. The triangular bridge at Croyland in Lincolnſhire, which was erected about the year 860, is ſaid to be the moſt ancient Gothic ſtructure remaining entire in the kingdom. There are two circumſtances in the conſtruction of this bridge, which render it an object of great curioſity. Firſt, it is formed by three ſemi-arches, whoſe baſes ſtand in the circumference of a circle, at equal diſtances from each other. Theſe unite at the top; and the triune nature of the ſtructure has led ſome to imagine that it was intended as an emblem of the Trinity. Secondly, the aſcent on each of the ſemi-arches is by ſteps paved with ſmall ſtones ſet edge-ways, and is ſo ſteep, that none but foot-paſſengers can go over the bridge: horſemen and carriages frequently paſs under it, as the river in that place is but ſhallow. For what purpoſe this bridge was really deſigned, it is difficult, if not impoſſible, to determine. Utility, it is obvious, was one of the leaſt motives to its erection. To boldneſs of deſign and ſingularity of conſtruction it has more powerful claims; and theſe qualities it muſt be allowed to poſſeſs in as great a degree as any bridge in Europe. Although this bridge has been erected ſo many centuries, it exhibits no marks of decay: twelve months ago there were no fiſſures to be perceived in either of the arches, and all that was miſſed were a mound and ſceptre which have been torn from the hands of a ſtatue of king Ethelbert by the ruthleſs hand of time.

London bridge is in the old Gothic ſtyle, and had twenty ſmall locks or arches; but there are now only 19 open, two having lately been thrown into one in the centre. It is 940 feet long, 44 high, and 47 clear width between the parapets. The piers are from 15 to 35 feet thick, with ſterlings projecting at each ſide and end, ſo that the greateſt water-way, when the tide is above the ſterlings, is 545 feet, ſcarcely half the breadth of the river; and below the ſterlings the water-way is reduced to 204 feet, cauſing a dangerous fall at low water. London bridge was firſt built with timber in the reign of Ethelred, between the years 993 and 1016; it was repaired, or rather rebuilt of timber in 1163, and the preſent ſtone bridge was begun under king Henry II. in 1176, and finiſhed under king John in the year 1209. It is probable there were no houſes on the bridge for upwards of 200 years, ſince we read of a tilt and tournament held on it in 1395. Houſes were erected upon it afterwards, but being found a great inconvenience and nuiſance, they were removed in 1758, and the avenues to the bridge enlarged, and the whole made more commodious: the two middle arches were then thrown into one, by removing the pier from between them. The expence of the repairs amounted to above 80,000l.

There were other bridges in England built in the manner of London bridge; as the bridge at Rocheſter, which is 550 feet long, and has 11 arches; alſo the late bridge at Newcaſtle upon Tyne, which was broken down by a great flood in the year 1771, for want of a ſufficient ſpace for water-way through the arches. The longeſt bridge in England is that over the Trent at Burton, built by Bernard abbot of Burton, in the 12th century. It is all of ſquared free-ſtone, and is ſtrong and lofty, 1545 feet in length, and conſiſting of 34 arches.

The bridge at Blenheim conſiſts of three arches, the chief of which ſpans 101 feet 6 inches.

Near Old Aberdeen there is a bridge over the river Don, very much celebrated. It is in the Gothic taſte. There is alſo a remarkable bridge called Sarah or Iſland bridge, built over the Liffey above Dublin, in the year 1792, by Mr. Alexander Stevens, a maſon from Edinburgh: it conſiſts of a ſingle elliptical arch 106 feet ſpan, and only riſing 22 feet; it is therefore ſix feet wider than the Rialto at Venice, and one foot leſs in height.

But the moſt extraordinary bridge in Great Britain is, doubtleſs, that over the river Taff, near Llantriſſent, in Glamorganſhire, called in Welſh *Pont y ty Prydd.* This is the work of William Edwards, an uneducated maſon of the country, who was only indebted for his ſkill to his own induſtry and the power of his genius. He had engaged, in 1746, to build a new bridge at this place, which he executed in a ſtyle ſuperior to any thing of the kind in this or any part of Wales, for neatneſs of workmanſhip, and elegance of deſign. "It conſiſted of three arches, elegantly light in their conſtruction. The hewn ſtones were excellently well dreſſed and cloſely jointed. It was admired by all who ſaw it. But this river runs through a very deep vale that is more than uſually woody, and crouded about with mountains. It is alſo to be conſidered, that many other rivers of no mean capacity, as the Crue, the Bargoed Taff, and the Cunno, beſides almoſt numberleſs brooks that run through long, deep, and well-wooded vales or glens, fall into the Taff in its progreſs. The deſcents into theſe vales from the mountains being in general very ſteep, the water in long and heavy rains collects into theſe rivers with great rapidity and force, raiſing floods, that in their deſcriptions would appear abſolutely incredible to the inhabitants of open and flat countries, where the rivers are neither ſo precipitate in their courſes, nor have ſuch hills on each ſide to ſwell them with their torrents. Such a flood unfortunately occurred after the completion of this undertaking, which tore up the largeſt trees by the roots, and carried them down the river to the bridge, where the arches were not ſufficiently wide to admit of their paſſage. Here, therefore, they were detained. Bruſh-wood, weeds, hay, ſtraw, and whatever lay in the way of the flood, came down, and collected about the branches of the trees, that ſtuck faſt in the arches and choaked the free current of the water. In conſequence of this obſtruction to the flood, a thick and ſtrong dam, as it were, was thus formed. The aggregate of ſo many collected ſtreams being unable to get any further, roſe here to a prodigious height, and, with the force of its preſſure, carried the bridge entirely away before it. William Edwards had given ſecurity for the ſtability of the bridge during the ſpace of ſeven years; of courſe he was obliged to erect another, and he proceeded on his duty with all poſſible ſpeed. The bridge had only ſtood about two years and a half. The ſecond bridge was of one arch, for the purpoſe of admitting freely under it whatever incumbrances the floods might bring down. The ſpan or chord of this arch was 140 feet, its altitude 35 feet, the ſegment of a circle whoſe diameter was 170 feet. The arch was finiſhed, but the parapets not yet erected, when ſuch was the preſſure of the unavoidably ponderous work over the haunches that it ſprung in the middle, and the keyſtones were forced out. This was a ſevere blow to a man who had hitherto met with nothing but misfortune in an enterpriſe which was to eſtabliſh or ruin him in his profeſſion. William Edwards, however, poſſeſſed a courage which did not eaſily forſake him; he engaged in it a third time, and by means of cylindrical holes through the haunches, ſo reduced their weight, that there was no longer any danger from it. The ſecond bridge fell in 1751; the third, which has ſtood ever ſince, was completed in 1755." (Mr. Malkin's Tour in South Wales.) The preſent arch is 140 feet in ſpan, and 35 feet high, being a ſegment of a circle of 175 diameter. In each haunch there are three cylindrical openings running through from ſide to ſide; the diameter of the loweſt is nine feet, of the next ſix feet, and of the uppermoſt three feet. The width of the bridge is about eleven feet. To ſtrengthen it horizontally, it is made wideſt at the abutments, from which it contracts towards the centre by ſeven off-ſets, ſo that the road-way is one foot nine inches wider at the extremities than at the middle.

The bridges of Weſtminſter and Blackfriars, over the river Thames at London, are among the fineſt ſtructures of the kind in Europe. The former is 1220 feet long, and 44 feet wide, having a commodious broad footpath on each ſide for paſſengers. It conſiſts of thirteen large, and two ſmall arches, fourteen intermediate piers and two abutments. The length of each abutment is 76 feet; the opening of each of the ſmaller arches is 25 feet; the ſpan of the firſt of the large arches at each end is 52 feet, of the next 56 feet, and ſo on increaſing by four feet at a time to the centre arch, the ſpan of which is 76 feet. The two piers of the middle arch are 17 feet wide, and the others decreaſe equally on each ſide, by one foot at a time, every pier terminating with a ſalient right angle againſt either ſtream. The arches are ſemi-circular, and ſpring from about the height of two feet above low water. The breadth of the river in this place is about 1220 feet, and the water-way through the bridge amounts to 870 feet. The bridge was begun in 1738, and opened for paſſengers in 1750, at a neat expence of 218,800l. It is conſtructed of the beſt materials, and in a neat and elegant taſte; but the arches are too ſmall in proportion to the quantity of maſonry.

Blackfriars bridge, nearly oppoſite to the centre of the city of London, was begun in 1760, and completed in ten years and three quarters, at a neat expence of 152,840l. It is an exceedingly light and elegant ſtructure; but, unfortunately, the materials do not ſeem to be of the beſt kind, as many of the ſtones in the piers are decayed. The bridge conſiſts of nine large, handſome, and nearly elliptical arches; the central arch is 100 feet wide, and the four arches on each ſide, reckoning towards the ſhores, decreaſe gradually, being 98, 93, 83, and 70 feet reſpectively, leaving a water-way of 788 feet. The whole length from wharf to wharf is 995 feet, the breadth of the carriage-way 28 feet, and that of the raiſed foot way on each ſide ſeven feet. The upper ſurface of the bridge is a portion of a very large circle, which forms an elegant figure, and admits of convenient paſſage over it. On each pier there is a receſs or balcony, with two Ionic columns and pilaſters, which ſtand on a circular projection of the pier above high water mark. The bridge is rounded off at each extremity to the right and left, in the form of a quadrant of a circle, rendering the acceſs commodious and agreeable. This edifice muſt be regarded as a fine ſpecimen of Mr. Mylne's ingenuity and judgment, though the method of conſtruction has never been made public.

Beſides the bridges already mentioned, there are many other neat and elegant ſtructures in different parts of Great Britain and Ireland. The bridge over the Tees at Winſton in Yorkſhire, was deſigned by ſir Thomas Robinſon, and built by John Johnſon, a common maſon at Walſingham, in the year 1762. It conſiſts of a ſingle arch 108 feet 9 inches ſpan; is built of rubble-ſtone; and coſt only 500l. An elegant ſtone bridge has lately been built over the Tweed at Kelſo, upon the plans and under the direction of Mr. John Rennie. This has five elliptical arches of 72 feet ſpan each; is quite level at top. It has two Doric pilaſters, which ſtand on a circular projection of the pier, with a ſimple block cornice. The coſt of this bridge was about 13,000l. excluſive of the roads at each end, which coſt about 3000l. more, in all 16,000l.

The bridge over the Peaſe, or rather Peaths, on the road from Dunbar to Berwick upon Tweed, is rather an uncommon ſtructure. This bridge croſſes a deep ravine called the Peaths. It conſiſts of four ſemi-circular arches. That at the eaſt ſide of the ravine is 54 feet ſpan; the ſecond 55 feet; the third 52 feet, and the further or weſtern arch 48 feet. The height of the bridge, from the bottom of the ravine to the ſurface of the road, is 124 feet. The ſituation is beautiful, and has a moſt romantic appearance. It was deſigned and built by the late Mr. David Henderſon, architect in Edinburgh, and does him conſiderable credit.

The aqueduct bridge, conſtructed by Mr. Rennie on the river Lune at Lancaſter, is one of the moſt magnificent works of the kind which has been erected for the purpoſes of navigation. At the place where it is built, the water is deep and the bottom bad. It conſiſts of 5 arches of 70 feet ſpan each, and about 39 feet above the ſurface of the water. It has a handſome cornice, and every part of it is finiſhed in the beſt manner. The foundations are laid at the depth of 20 feet under the ſurface of the water, and ſtand on a flooring of timber, ſupported by piles. The foundation alone coſt 15,000l. The ſuperſtructure coſt above twice that ſum, although the ſtone was found within about a mile and a half of the place where the aqueduct was built. Barges of 60 tons burthen navigate the canal. The total height from the ſurface of the river to the ſurface of the canal is 51 feet.

It may be obſerved in this place, that the Romans always, without any exception that we are acquainted with, made their arches either of a ſemi-circle, or of a leſſer ſegment of a circle. The vouſſoirs were generally included between two concentric curves, on which account theſe are called extradoſſed arches. The earlier Italian architects followed the example of the Romans in the forms of their arches, which are either ſemicircular, or of a ſmaller ſegment, called by them *arco intiero*, and *arco ſcemo*, from which term our workmen have taken that of *ſkeme arch*. Elliptical arches are very much uſed by the engineers of France, moſt of the bridges in that country being in this manner. The French diſtinguiſh their arches into three kinds, *l'arc plein-ceintre*, *l'arc ſurhauſſé*, and *l'arc ſurbaiſſé*; the firſt is a ſemi-circle, the ſecond higher, and the third lower than a ſemi-circle, being formed by the greater or ſmaller axis of an ellipſis; in practice, however, theſe are generally compoſed of ſeveral arcs of circles of different diameter, as in this caſe the joints are more eaſily traced. The arcs ſurbaiſſés are alſo called *anſe de panier*. The *arc bombé* is an arc ſurbaiſſé, formed by a ſegment of a circle.

The ancients always laid their wrought ſtones without mortar between the joints, frequently uſing iron cramps to connect them more firmly together. Their large arches, and thoſe which had to bear very great weights, were compoſed of ſeveral ranks of vouſſoirs extradoſſed, and breaking joint, as is ſeen in the great cloaca of Rome, and in ſeveral bridges and aqueducts. Modern architects, however, generally uſe only one rank of vouſſoirs, each of which is terminated at top by a horizontal joint, and laterally by a perpendicular joint, for the purpoſe of ranging better with the courſes of the haunches and ſpandrels.

The decoration of bridges ought to be ſimple and large, their beauty conſiſting chiefly in the proportion of the voids and ſolids, the contour of the arches, and apparent ſtrength and ſolidity, together with boldneſs of conſtruction. However, many modern architects have carried ſimplicity to exceſs, particularly in Paris, where the arches of all the bridges are plain, and without any member of architecture. A happy introduction of ruſtic work of various forms and ſizes breaks the monotony of the large maſſes, and enriches the edifice. This method was often employed by the ancients, and we never find that they neglected to ornament the arches of their bridges with archivolts more or leſs rich.

Palladio, in all his deſigns of bridges, has never omitted this ſimpleſt and beſt decoration of arches. Cornices and baluſtrades alſo are both uſeful and ornamental in theſe ſtructures.

Generally ſpeaking, large arches are more expenſive than ſmaller. In a bridge lately deſigned over a river, wherein the foundations were very difficult to conſtruct, one deſign with three arches of 116 feet each, was eſtimated at 13,174l. and another of five arches of the ſame kind was eſtimated at 12,041l., which was contracted for and built for the above ſum.

Wooden bridges now demand our attention. The ſimpleſt caſe of theſe edifices is that in which the road-way is laid over beams placed horizontally, and ſupported at each end by piers or poſts. This method, however, is deficient in ſtrength and width of opening: it is therefore neceſſary, in all works of any magnitude, to apply the principles of truſſing, as uſed in roofs and of arches. Wooden bridges of this kind are ſtiff frames of carpentry, in which, by a proper diſpoſition, beams are put, ſo as to ſtand in place of ſolid bodies, as large as the ſpaces which the beams encloſe; and thus, two or three or more of theſe are ſet in abutment with each other, like mighty arch-ſtones.

Palladio has given ſeveral very elegant deſigns of wooden bridges, which he thus deſcribes. The bridge of the Ciſmone. The Ciſmone is a river, which, falling from the mountains that divide Italy from Germany, runs into the Brenta a little above Baſſano. And, becauſe it is very rapid, and great quantities of timber are ſent down it by the mountaineers, it was reſolved to make a bridge there, without fixing any poſts in the water, which were liable to be carried away by the violence of the current, and the ſhock of the ſtones and trees that continually came down. The invention of this bridge, (ſays Palladio,) is, in my opinion, very worthy of attention, as it may ſerve on all occaſions where theſe difficulties may occur, and becauſe that bridges thus made are ſtrong, beautiful and commodious; ſtrong, becauſe all their parts mutually ſupport each other; beautiful, becauſe the texture of the timbers is very agreeable; and commodious, being even, and in the ſame line with the remaining part of the ſtreet. The river where this bridge was erected is 100 feet wide; this width is divided into ſix equal parts; and at the end of each part, excepting at the banks, which are ſtrengthened with pilaſters of ſtone, the beams are placed, that form the breadth of the bridge, upon which, a little ſpace being left at their ends, were placed other beams lengthways, which form the ſides. Over theſe, directly upon the firſt, the *colonelli* (king-poſts) were diſpoſed on each ſide; theſe king-poſts are connected to the beams which form the breadth of the bridge by means of irons paſſing through the projecting ends of the beams. and bolted and pinned through both. See *fig.* 1. *Plate* XXXII. of *Architecture.*

Palladio proceeds to deſcribe three other methods of conſtructing wooden bridges without poſts in the water, like the bridge over the Ciſmone. The bridges after the firſt method are to be made in this manner: the banks being ſtrengthened by pilaſters as neceſſity ſhall require, one of the beams forming the breadth of the bridge, is to be placed at ſome diſtance from it, then the firſt ſtrut is to be placed with one end upon the pier, and the other end abutting againſt the firſt queen-poſt, which is to be connected with the beams by irons. Then the ſecond beam for the breadth is to be placed at a diſtance equal to the ſpace between the firſt beam and the pier, which is to be ſupported in like manner with a ſtrut and queen-poſt, and thus proceeding as far as is required, obſerving to have a king-poſt in the middle of the length in which the ſtruts meet both ways, and with collar beams between all the poſts which ſtiffen and ſupport the whole conſtruction. Bridges after this manner are to be wider at the extremities, and contract towards the middle. See *fig.* 2. *Plate* XXXII. of *Architecture.*

The invention of the following bridge has the upper part which ſupports the weight in the form of a polygon, inſcribed in a flat ſegment of a circle; the beams forming the breadth of the roadway are upheld by king-poſts and irons, and the whole ſtiffened and ſupported by braces croſſing one another between the king-poſts. Struts at each end, reaching from the piers to the firſt beams, are alſo added to ſhorten the bearing, and increaſe the ſtrength of the fabric. See *fig.* 1. *Plate* XXXIII. of *Architecture.*

The third deſign may be made with a greater or ſmaller arch than is here repreſented. The height of the bridge in which are placed the braces between the king-poſts, or rather radii, is to be an eleventh part of the ſpan. See *fig.* 2. *Plate* XXXIII. of *Architecture.*

Mr. Coxe, in the firſt volume of his Travels, has ſlightly deſcribed a very ſingular bridge at Wittingen, in Swiſſerland, the conſtruction of which is quite ſimple. The ſpan is 230 feet, and it riſes only 5. The ſketch (*fig.* 3. *Pl.* XXXIII.) will make it ſufficiently intelligible. ABC is one of two great arches approaching to a Catenarian ſhape, built up of 7 courſes of ſolid logs of oak, in lengths of 12 or 14 feet, and 16 inches or more in thickneſs. Theſe are all picked of a natural ſhape, ſuited to the intended curve; ſo that the wood is no where cut acroſs the grain to trim it into ſhape. Theſe logs are laid above each other, ſo that their abutting joints are alternate, like thoſe of a brick wall; or, in the language of the workmen, they *break joint.* It is indeed a wooden wall, ſimply built up by laying the pieces upon each other, taking care to make the abutting joints as cloſe as poſſible. They are not faſtened together by pins or bolts, but held together by iron ſtraps, which ſurround them at the diſtance of five feet from each other, where they are faſtened by bolts and keys. Theſe two arches being erected and well butted againſt the rock on each ſide, were freed from their ſupports and allowed to ſettle. They are ſo placed that the intended road *a b c* interſects them about the middle of their height. The roadway is ſupported by croſs joiſts which reſt on a long horizontal ſummer-beam; and this is connected with the arches on each ſide by uprights bolted into them. The whole is covered with a roof, which projects over the arches on each ſide, to defend them from the weather. Three of the ſpaces between theſe uprights have ſtruts, or braces, which give the upper work a ſort of truſſing in that part. This bridge is of a ſtrength much more than adequate to ſupport any load that can be laid upon it; though it is manifeſt, by the attempt to truſs the ends, that it was the contrivance of a perſon ignorant of principle. It was the work of one Ulrich Grubenhamm, of Tuffen, in the canton of Appenzel, a carpenter without education, but celebrated for ſeveral works of the ſame kind.

At Schaffhauſen, in Swiſſerland, where the Rhine flows with great rapidity, ſeveral ſtone bridges had been deſtroyed, when, in 1754, Grubenhamm offered to throw a wooden bridge of a ſingle arch acroſs the river, which is nearly 390 feet wide. The magiſtrates, however, required that it ſhould conſiſt of two arches, and that he ſhould, for that purpoſe, employ the middle pier of the laſt ſtone bridge, which would divide the new one into two unequal arches of 172 and 193 feet ſpan. The carpenter did ſo; but contrived to leave it a matter of doubt, whether the bridge is at all ſupported by the middle pier. It was erected on a plan nearly ſimilar to the Wittengen bridge, at the expence of about 8000l. ſterling.

ling. Travellers inform us, that it ſhook if a man paſſed over it; yet waggons heavily laden alſo went over it without danger. We are ſorry to add, that this curious bridge was burnt by the French when they evacuated Schaffhauſen, in April 1799.

Beſides the wooden bridges already deſcribed, there are ſeveral elegant and well conſtructed edifices in Great Britain; the moſt eminent of which was that at Walton-upon-Thames. This bridge conſiſted of three wooden arches, and five brick arches at each end; the middle arch was 130 feet in ſpan, with a riſe of 28 feet, conſtructed of three principal ribs, framed in the manner repreſented in *Plate* XXXIV. of *Architecture.* It was the deſign of the ingenious carpenter, Mr. Etheridge.

Iron bridges. Iron being the moſt abundant, cheap, and generally uſeful of all metals, has of late been employed in many works where great ſtrength was required in proportion to the weight of the material: hence cylinders, beams, and pumps for ſteam engines, boats, and barges for canals and navigable rivers, beams and pillars for warehouſes, and other large buildings, and at length bridges have been conſtructed of iron.

Iron bridges are the excluſive invention of Britiſh artiſts. The firſt that has been erected on a large ſcale is that over the river Severn, at Coalbrook Dale, in Shropſhire. This bridge is compoſed of five ribs, and each rib of three concentric arcs connected together by radiating pieces. The interior arc forms a complete ſemicircle, but the others extend only to the cills under the roadway. Theſe arcs paſs through an upright frame of iron at each end, which ſerves as a guide; and the ſmall ſpace in the haunches between the frames and the outer arc is filled in with a ring of about ſeven feet diameter. Upon the top of the ribs are laid caſt iron plates, which ſuſtain the roadway. The arch of this bridge is 100 feet 6 inches in ſpan; the interior ring is caſt in two pieces, each piece being about 70 feet in length. It was conſtructed in the year 1779, by Mr. Abraham Darby, iron maſter at Coalbrook Dale, and muſt be conſidered as a very bold effort in the firſt inſtance of adopting a new material. The total weight of the metal is 378½ tons.

The ſecond iron bridge, of which the particulars have come to our knowledge, was that deſigned by Mr. Thomas Payne, author of many political works. It was conſtructed by Meſſrs. Walkers at Rotherham, and was brought to London, and ſet up in a bowling-green at Padington, where it was exhibited for ſome time. After which it was intended to have been ſent to America; but Mr. Payne not being able to defray the expence, the manufacturers took it back, and the malleable iron was afterwards worked up in the conſtruction of the bridge at Wearmouth.

The third iron bridge of importance erected in Great Britain, was that over the river Wear, at Biſhop Wearmouth, near Sunderland, the chief projector of which was Rowland Burdon, eſq. M. P. As this is the moſt conſiderable ſtructure of the kind, it may be proper to give a brief ſketch of its hiſtory. In conſequence of the increaſing trade and population of Sunderland and the two Wearmouths, the ancient ferry, which was almoſt in the middle of the harbour had become very inſufficient and unſafe, ſo that, beſides frequent delays and diſappointments, ſeveral inſtances had occurred of the loſs of lives. About the year 1790, in which Mr. Burdon was returned to parliament by the county of Durham, ſome gentlemen intereſted in the welfare of the town and neighbourhood of Sunderland, united for the purpoſe of removing the evils ariſing from the ferry, and Mr. Burdon was appointed one of the committee. Conceiving at firſt that a ſtone bridge would be proper, they began to adopt meaſures for its erection. An architect was choſen to carry on the neceſſary works, who in due time produced plans, eſtimates, and a model of the intended edifice. But as the work was of conſiderable magnitude and importance, it was thought expedient to refer the deſign to the opinion of ſome gentlemen of celebrity for ſcientific and practical knowledge in and near the metropolis; their report being unfavourable, the ſcheme of erecting a ſtone bridge was abandoned. The committee, however, being now warmly engaged in the buſineſs, continued to proſecute their inquiries; and Mr. Burdon in particular being frequently called by his parliamentary duty to London, was very diligent in his endeavours to obtain information and hints from various quarters, as to the peculiar advantages and diſadvantages of different materials, as well as of various modes of conſtruction. Mr. Burdon had the good fortune to be aſſiſted in the maturing of his plans by Mr. Thomas Wilſon, a truly ingenious man, and at the ſame time to learn much of the conſtruction of iron bridges from Meſſrs. Walkers, of Rotherham, ſo that at length he became perſuaded that iron would be the moſt proper material of which to form the propoſed bridge. He thought it beſt, however, to adhere to the ancient conſtruction, by dividing the arch into portions in the manner of arch ſtones, and taking advantage of the ductility and tenacity of iron to produce an arch of that metal at leaſt fifteen times lighter than a correſponding arch of ſtone, and capable of being put together upon an ordinary ſcaffolding, inſtead of an accurate centre, in a much ſhorter ſpace of time.

Mr. Wilſon, in conjunction with Meſſrs. Walkers, conſtructed and ſet up an experimental rib at Rotherham, which being found to anſwer expectation, the ſucceſs of the experiment was communicated by Mr. Burdon to the town of Sunderland and the county; and his propoſition for the erection of an iron bridge was acceded to. The firſt ſtone was laid in September, 1793; and Mr. Wilſon was appointed to the ſuperintendance of the work. The iron-work was caſt by Meſſrs. Walkers, of Rotherham, and the arch was turned upon a very light but firm ſcaffolding, ſo judiciouſly conſtructed that not any interruption was given to the paſſage of the numerous veſſels which navigate the buſy river of Sunderland. The mode of bracing the ribs was ſo ſimple and expeditious, that the whole was put together and thrown over the river in ten days; the ſcaffolding was immediately removed, and the bridge opened for general uſe on the 9th of Auguſt, 1796.

During the period occupied in erecting the bridge, Mr. Burdon took out a patent to ſecure the invention of "a certain mode or manner of making, uniting, and applying caſt iron blocks to be ſubſtituted in lieu of key-ſtones, in the conſtruction of arches." He thus proceeds to deſcribe his invention, which "conſiſts in applying iron or other metallic compoſitions to the purpoſe of conſtructing arches upon the ſame principle as ſtone is now employed, by a ſubdiviſion into blocks eaſily portable, anſwering to the key-ſtones of a common arch, which being brought to bear on each other gives them all the firmneſs of the ſolid ſtone arch, whilſt, by the great vacuities in the blocks, and their reſpective diſtances in their lateral poſition, the arch becomes much lighter than that of ſtone, and by the tenacity of the metal the parts are ſo intimately connected that the accurate calculation of the extrados and intrados, ſo neceſſary in ſtone arches of magnitude, is rendered of much leſs conſequence. *Fig.* 4. *Plate* XXXIII. of *Architecture* repreſents a block of caſt iron, five feet in depth from A to A, and four inches in thickneſs, having three arms B, B, B, and making a part of a circle or ellipſis; the middle arm is two feet in length from B to C, and the other two are in proportion. On each ſide of the arms are grooves (three quarters of an inch deep, and three inches broad) for the purpoſe of receiving malleable or bar-iron, and in each arm are two bolt holes, D. *Fig.* 2. repreſents two of theſe blocks placed together, and the joints confined to their reſpective poſitions by the bar-iron on each ſide of the arms, as at E, E, E, which, with other ſimilar blocks ſo united and bearing upon each other, become a rib. *Fig.* 3. and F, F, *fig.* 2. are hollow tubes ſix feet long, and four inches in diameter, having ſhoulders at each end, with holes anſwering to thoſe of the blocks; G is a block of another rib connected with the former by the tubes F, F, placed horizontally. Through the holes in the ſhoulders and arms of the block and bar-iron are bolts, faſtened with cotterels or forelocks, as at H, H, H, H. The blocks being united with each other in ribs, and the ribs connected and ſupported laterally by the tubes as above deſcribed, the whole becomes one maſs, having the property of key ſtones cramped together." This extract ſerves to explain the more minute parts of the conſtruction: a few words more will deſcribe the ſtructure itſelf.

The bridge conſiſts of a ſingle arch; whoſe ſpan is 236 feet; and as the ſpringing ſtones at each ſide project two feet, the whole opening is 240 feet. The arch is a ſegment of a circle of about 444 feet diameter, its verſed ſine is 34 feet, and the whole height from low water about 100 feet, admitting veſſels of from two to three hundred tons burthen to paſs under, without ſtriking their maſts. A ſeries of one hundred and five blocks form a rib, and ſix of theſe ribs compoſe the breadth of the bridge. The ſpandrels, or the ſpaces between the arch and the roadway, are filled up by caſt-iron circles, which touch the outer circumference of the arch, and at the ſame time ſupport the roadway, thus gradually diminiſhing from the abutments towards the centre of the bridge. There are alſo diagonal iron bars, which are laid on the tops of the ribs, and extended to the abutments to keep the ribs from twiſting. The ſuperſtructure is a ſtrong frame of timber planked over to ſupport the carriage-road, which is compoſed of marl, lime-ſtone, and gravel, with a cement of tar and chalk immediately upon the planks, to preſerve them. The whole width of the bridge is 32 feet. The abutments are maſſes of almoſt ſolid maſonry, twenty-four feet in thickneſs, forty-two in breadth at bottom, and thirty-ſeven at top. The ſouth pier is founded on the ſolid rock, and riſes from about twenty-two feet above the bed of the river. On the north ſide the ground was not ſo favourable, ſo that it was neceſſary to carry the foundation ten feet below the bed. The weight of the iron in this extraordinary fabric amounts to 260 tons; 46 of theſe are malleable, and 214 caſt. The entire expence was 27,000l.

From this account of the bridge acroſs the Wear, the attentive reader will ſee much to admire in its conſtruction: it is not, however, totally free from defects. We conceive that the ſpandrels are very improperly filled up. It is true, that it is done in ſuch a manner as is exceedingly light and pleaſing to the eye; but the iron hoops may, we think, be eaſily compreſſed at the points of contact, and changing their ſhape will oppoſe very little reſiſtance. As the arch forms ſo ſmall a portion of a circle (about $64\frac{1}{3}$ degrees), the weight at the ſpring of the arch need not, according to the theory of equilibration, be double to that at the crown, to ſupport, without danger of riſing, any preſſure ariſing from the maſs of the ſtructure itſelf: but in ſo flat and light an arch, an overload on any part muſt have a great tendency to bend it, and conſequently tend conſiderably to break it, at a diſtant part, with all the energy of a long lever: we think, therefore, that a better form might have been adopted than what has been put in practice at Wearmouth bridge.

The third iron bridge is that over the Severn at Buildwas, about two miles above Coalbrook Dale. An old ſtone bridge of three narrow arches having been carried away by a high flood in 1795, the preſent iron bridge was planned and built by the Coalbrook Dale Company, under the ſuperintendance of Mr. Thomas Telford, the county ſurveyor, in 1796. It conſiſts of a ſingle arch, 130 feet in ſpan, the riſe from the ſpringing to the ſoffite being 27 feet; and as it was thought neceſſary to keep the roadway as low as poſſible, the outſide ribs are made to go up as high as the railing; they are connected with the ribs that bear the covering plates, by means of pieces of iron dovetailed in the form of king-poſts. The plates which compoſe the covering over the lower ribs are caſt with deep flaunches; they are laid cloſe to each other, and form an arch of themſelves. Theſe ſide ribs, or arches, would have added much more to the ſtrength of the bridge than they now do, had the materials been of a ſubſtance that would not expand or contract; but that not being the caſe, they, in warm weather, when they expand, rather tend to derange the other parts of the bridge than ſtrengthen it; and the appearance of the whole is by no means pleaſing.

About the ſame time that the bridge at Buildwas was erected, an iron bridge was thrown over the river Teme in Herefordſhire. Its parts were ſo ſlender and ill-diſpoſed, that no ſooner was the wooden centre taken away than the whole tumbled into the river.

The ſplendid example of the bridge at Wearmouth gave an impulſe to public taſte, and cauſed an emulation among artiſts, which has produced many examples and more projects of iron bridges. The Coalbrook Dale Company have conſtructed ſeveral, among which is a very neat one over the river Parrot at Bridgewater. Mr. Wilſon, the engineer, employed by Mr. Burdon, has alſo built ſeveral, and has lately finiſhed a very elegant one over the river Thames, at Staines, which is by far the moſt complete in deſign, as well as the beſt executed, of any that has hitherto been erected. This bridge conſiſts of a ſingle arch, 181 feet in ſpan, and 16 feet 6 inches in riſe, being a ſegment of a circle of 480 feet. The blocks, of which the ribs are compoſed, are ſimilar to thoſe in the Wearmouth bridge, except that theſe have only two concentric arcs inſtead of three, as at the latter. The arcs are caſt hollow, and the blocks connected by means of dowels and keys; thus obviating the great defect obſerved at Wearmouth, of having ſo much hammered iron expoſed to the action of the air. Four ribs form the width of the arch, which are connected together by croſs-frames. The ſpandrels are filled in with circles, which ſupport a covering of iron plates an inch thick: on this is laid the roadway 27 feet wide. Two hundred and ſeventy tons are the weight of the iron employed in the bridge, and three hundred and thirty of the roadway.

For further practical details on the conſtruction of bridges, the reader is referred to the articles FOUNDATIONS *in Water*, CAISSON, COFFERDAM, &c.

BRIDGES, *Theory of.* In conſidering the theory of bridges, the firſt objects of inquiry are, the nature of an arch, and the principles on which depend its ſtability and permanence. It will be ſeen, by referring to the article ARCH in this dictionary, that we have adopted the opinion of thoſe mathematicians who conceive that an arch is kept in equilibrium, or from falling, by the weight or vertical preſſure of the ſuperincumbent wall or maſs. The principles on which they proceed, have now obtained the name of *the theory of Equilibration.*

It will be readily admitted, by thoſe who attend to theſe ſubjects, that whatever properties may be ſhewn to relate to a geometrical or lineal arch, conſidered without thickneſs, and of its ſuperincumbent plane, may be eaſily and ſafely transferred to a real arch of ſolid materials, and the heavy matter ſuſtained by it; for it is manifeſt that a ſolid arch may be conceived either to be generated by the motion of a linear arch, and its plane in a direction perpendicular to that plane, or to be made up of an indefinite number of ſuch equal linear arches and correſponding planes: and in either caſe, what is ſhewn to obtain with reſpect to the former, may without heſitation be applied to the latter. This the reader will keep in mind.

The firſt hint of a principle which we recollect, is contained in Dr. Hooke's aſſertion, that the figure into which a chain or rope, perfectly flexible, will arrange itſelf when ſuſpended from two hooks, is, when inverted, the proper form for an arch compoſed of ſtones of uniform weight. The reaſon aſſigned for this principle is, that when the flexible feſtoon of heavy bodies becomes inverted, ſtill touching one another in the ſame points, the force with which they preſs on each other in this laſt caſe, is equal and oppoſite to the forces with which they draw each other in the caſe of ſuſpenſion. The curve formed by a rope, or flexible chain, of extremely ſmall links, when thus ſuſpended, is well known to our geometricians by the name of the *catenarian* curve; by the French it is called *la chainette*. If a curve of this kind be diſpoſed in ſuch a manner that its vertex ſhall be uppermoſt; and if a multitude of globes be ſo arranged that their centres ſhall be in the circumference of this curve, they will all remain motionleſs and in equilibrium: much more will this equilibrium ſubſiſt, if, inſtead of globes, we ſubſtitute thin vouſſoirs, having flat ſides, which touch each other in directions perpendicular to the curve. In the former caſe, the equilibrium will be deſtroyed very eaſily, juſt as a globe reſting on a plane ſurface is eaſily put into motion; in the latter, the equilibrium cannot be deſtroyed without conſiderable force, juſt as when a heavy body is placed upright on a broad flat baſe, it will not only ſtand, but will require conſiderable force to puſh it over.

Since the catenarian curve is readily deſcribed mechanically, it is no wonder that this principle of Dr. Hooke's ſhould be very generally received; but many of thoſe who adopted it, forgot that it could not be extenſively applied, without certain modifications: theſe modifications, it will be ſeen farther on, cauſe this principle to coincide exactly with the true theory of equilibration. As to the contrary, it is manifeſt, from what we have already ſaid, that it is only the form of a very ſlender arch rib of uniform thickneſs, and unfit for the purpoſe of a bridge; which requires a conſiderable maſs of maſonry to lie upon the arch and fill up the ſpace to the roadway, thus completely deſtroying the equilibrium at firſt eſtabliſhed in the arch itſelf. It would be poſſible, indeed, to conſtruct a catenarian curve of equilibration, having a horizontal line for the extrados, but then the thickneſs of the maſs above the crown of the arch muſt be enormous; thus, for a catenarian of 100 feet in ſpan, and 40 feet high, the diſtance from the top of the arch to the horizontal extrados muſt have been nearly 37 feet to enſure an equilibrium. For theſe reaſons the catenarian curve has been very ſeldom uſed in the erection of bridges.

Another principle, which was firſt aſſumed about the end of the 17th century, is, that every perpendicular column of maſonry above the arch is merely kept from ſliding down the arch by the next adjoining column. It is very obvious, at firſt ſight, that this principle is not conſiſtent with nature; it has therefore found but few advocates. When analytical expreſſions are deduced for the curvature of arches conſtructed on this principle, it is worth obſerving, that they coincide exactly with thoſe which would flow from the ſuppoſition that the arch was in equilibrio, in conſequence of having a fluid, with a horizontal ſurface, preſſing upon every part of it.

A third principle is drawn from the conſideration of the arch ſtones being fruſtums, or parts of wedges. This principle, we believe, originated in France, and has been preſented in various forms by De la Hire, Belidor, Varignon, Parent, and other French philoſophers, and lately by our ingenious countryman Mr. Atwood.

In the method now alluded to, it is conſidered what weight, in or upon a wedge, is balanced by forces acting againſt the ſides; or what force ſuch a wedge exerts both horizontally and perpendicularly to its ſides; and thence it is computed what muſt be the poſition and ſhape of the contiguous wedges of given weights; or what muſt be their weights to a given ſhape and poſition, ſo as juſt to exert the adequate degree of reſiſtance required by the firſt wedge; and ſo on, from wedge to wedge, till the whole is balanced. A mere arch conſtructed in this way, would remain in equilibrio as long as the conſtituent vouſſoirs had liberty to ſlide, without friction, down the reſpective inclined planes on which they lay. This method is, indeed, liable to many objections. Firſt, this theory requires, that either the denſity or the magnitude of the reſpective vouſſoirs, from the crown to the foot of the arch, ſhould keep conſtantly increaſing in proportion to the differences of the tangents of the ſeveral angles, which the joints of the vouſſoirs make with the vertical axe of the curve. Now, if the architect ſhould wiſh to change the denſity of his materials in the required proportion, we know not what materials he could uſe; for the denſity muſt always be very great towards the ſpring of the arch; and, in many caſes, it muſt be infinitely great. If, on the other hand, the magnitudes of the vouſſoirs were gradually increaſed, it would be neceſſary that thoſe at the ſpring, and conſequently the abutments, ſhould be immenſely great, and often infinite; beſides, that the wedges muſt be cut to different oblique angles, very difficult in execution, and totally unſafe when erected, as the acute angles would be in conſtant danger of fluſhing off. Here, too, in real practice, there would be a total want of balance, on account of the maſs of maſonry and rubble work, which fills the ſpace between the arch and the road-way. But even this is not all; the arch ſtones cannot be made, nor indeed ought they, to act as the true mathematical wedge, the properties of which were employed in attempting to eſtabliſh the equilibrium. The wedge of theſe theoriſts is ſuppoſed to have its butting ſides perfectly poliſhed, and to have its weight or other force on its back balanced by proper equivalent forces acting perpendicularly againſt thoſe ſides. Now this is ſo far from being the caſe in the practice of bridge-building, that architects contrive to have the butting ſides of their wedges ſo rough as to occaſion a great deal of friction between them; and to increaſe the adheſion of theſe ſides the more, they introduce between them the beſt and ſtrongeſt cement they can procure. By theſe means, ſo far from the arch ſtones being kept in their places only by forces perpendicular to their butting ſides; and having liberty to ſlide along thoſe ſides, as in the wedge theory, they are abſolutely prevented from the poſſibility of ſo ſliding, and in a great meaſure kept in their places in the arch, by forces that act even perpendicular to thoſe which the wedge theory requires. On theſe accounts, then, we conceive that, however ſpecious and plauſible this theory may appear on paper, it ought not to be admitted, ſince it is manifeſtly inapplicable to any caſe which can ever occur in real practice.

On the contrary, the theory which we have adopted, or that givenby Emerſon in his Fluxions, publiſhed in the year 1742, and which has been ſo ably and judiciouſly handled by Dr. Hutton in particular, is conſiſtent with nature and with truth. This theory eſtabliſhes an equilibrium among all the vertical preſſures of the whole fabric contained between the ſoffit, or under-ſide of the arch, and the road-way over all. It is now very generally adopted by the moſt ſkilful engineers and architects, as the only true one; becauſe it ſecures a balance in the whole of the ponderating matter, by making an equality at every point of the curve, between all the adjacent preſſures when reduced to the tangential directions, or perpendicular to the joints, which are ſuppoſed to be at right angles to the curve of the arch in every part, as ſuch ſtructures naturally require them to be: for, if the joints be perpendicular to the curve, there will ariſe a lateral preſſure, whoſe direction is not along the tangent; which, wanting a force to ſuſtain it, will deſtroy the equilibrium, and ſome of the ſtones will endeavour to fly out.

When ſpeaking of the principle advanced by Dr. Hooke, we obſerved that by means of peculiar modifications, it was capable of univerſal application to caſes occurring in practice, and was at the ſame time conſiſtent with the theory we have aſſumed. This we ſhall now proceed to ſhew. In *Pl.* XXXVIII. *Architecture, fig.* 1. is *fig.* 2. *Pl.* VI. (referred to in the article Arch) completely inverted. Let this repreſent a flexible chord or chain, void of gravity, hanging from the points A and G, which are fixed; at the points B, C, D, E, F, ſuppoſe weights to be ſuſpended (acting in the directions B H, C I, D K, &c.) proportional to the ſeveral lines B *i*, C *m*, D *n*, E *s*, and F *y*. Then the caſe now before us will be the complete inverſion of that which is firſt ſtated in *Prob.* 1. article Arch, the drawing forces in this inſtance being reſpectively equal and oppoſite to the ſeveral preſſing forces in that: therefore, every thing proved there by means of the compoſition and reſolution of forces, will be found to obtain here, only in a contrary direction. Conſequently, if the number of weights hanging from the chord ADG be indefinitely increaſed, it will aſſume a curvilinear ſhape, ſimilar in its nature to the arch of equilibration, only in an inverted poſition; and the various theorems which relate to the weights and preſſures of the ſtanding arch, apply with equal facility and accuracy to the weights hanging from the ſuſpended arch. Whether, therefore, we conſider the ſtanding or the hanging arch, it is equally true, that in the caſe of juſt equilibration, the column either preſſing or drawing at any point of the arch is reciprocally as the radius of curvature and the cube of the ſine of the angle, in which the vertical line cuts the curve in that point (Cor. 2. pr. i. Arch); or, ſince the coſecant varies as the ſine inverſely, the column abovementioned is reciprocally as the radius of curvature, and directly as the cube of the ſecant of the curve's inclination to the horizon, in the given point.

But the analogy between the ſtanding and the hanging arch has been traced out, not ſo much for the purpoſe of corroborating the true theory of equilibration, as for the ſake of deducing from it a very popular and general mode of conſtruction; ſtrictly accurate in its principle, and yet ſo ſimple in its application, that the moſt illiterate artiſt may ſafely practiſe it. Suppoſe it were required to aſcertain the form of an arch which ſhall have the ſpan A G (*fig.* 2. *Pl.* XXXVIII. *Architecture*) and the height D S, and which ſhall have a road-way of the form BEC above it. Let the outline figure ABECG be inverted, ſo as to form a figure A*bec*G. Suſpend a fine chain of uniform thickneſs from the points A and G, and of ſuch a length, that its lower point will hang a little below *d*, correſponding to D. Divide A G into a number of equal parts (the more the better) in the points 1, 2, 3, &c. and draw vertical lines, cutting the chain in the correſponding points 1, 2, 3, &c. Now take pieces of another chain, whoſe links are eaſily ſeparated, and hang them on at all the points 1, 2, 3, &c. of the chain A *d* G: trim theſe pieces of chain, by taking off links at ſome places, and hanging on at others, till their lower ends all coincide with the inverted road-way *b e c*. The greater lengths hung on in the vicinity of A and G, will pull down thoſe points of the chain, and cauſe the middle point *d*, which is leſs loaded, to riſe a little, and bring it near to its proper height. It is obvious this is an arch of equilibration for a bridge ſo loaded, that the weight of the arch-ſtones is to that of the ſuperincumbent matter between the arch and road-way, as the weight of the chain A *d* G, is to the ſum of the weights of all the little bits of chain, very nearly. But this proportion is not known before-hand; we muſt, therefore, proceed thus: adapt to the curve produced in this way ſuch a thickneſs of the arch-ſtones as may be thought ſufficient to enſure ſtability; then compute the weight of the arch-ſtones, and the weight of the rubbles, or other materials with which the haunches are to be filled up to the road-way. If the proportion of theſe two weights be nearly the ſame with the proportion of the weights of the chain, we may reſt ſatisfied with the curve now found: but if it be much different, we may ſoon find how much ſhould be added to, or taken from, the appended bits of chain, in order to make the two proportions equal. We ſhall then have a curve infinitely near to the inverſion of the curve wanted. This method we can ſafely recommend, as we know it to have been frequently uſed with facility and ſucceſs.

It would draw us far beyond the limits we are obliged to aſſign ourſelves, were we to give a complete view of the theory in all its branches; thoſe who are deſirous of obtaining a more intimate acquaintance with the ſubject are, therefore, referred to Dr. Hutton's ingenious treatiſe on bridges; for our own parts, we muſt content ourſelves with juſt touching upon a few of the moſt important particulars. Under the article Arch, and the correſponding plate, we have given figures of the extrados, of a circular and elliptical arch of equilibration; from which it may be ſeen how far the extrados extends from the vertex of the curve, before it becomes unfit for a road-way by reaſon of its bending upwards: in this reſpect, it appears, that the flat ellipſis has the advantage of the circular arch; but the cycloidal arch of equilibration, though ſimilar to theſe, has the advantage of both, becauſe the extrados runs farther on, nearly parallel to the arch before it comes to the point of inflection. We ſhould obſerve, however, that in many caſes, even of circular or elliptical arches, the evil ariſing from the inflection of the extrados may be thrown off to a greater diſtance, by a very ſimple expedient; for, in an arch of equilibration, as NBH, *fig.* 3. *Pl.* XXXVIII. of *Architecture*, whoſe extrados is EIKS F, ſince the points at *m*, *n*, *o*, &c. are kept in equilibrio by the heights of the wall I *m*, K *n*, L *o*, &c. if the lines I *m*, K *n*, L *o*, &c. be divided in a given ratio, in *i*, *k*, *l*, &c. the ſmaller maſs, under the new extrados *e*, *i*, *k*, *ſ*, *f*, will ſtill ſecure the equilibrium. Now it is obvious, that the lower extrados runs much farther from the crown than the upper one, before it has a point of inflection: and hence appears one great advantage ariſing from the uſe of iron in bridges inſtead of ſtone. Suppoſe, for inſtance, that an arch was to be conſtructed, having the ſpan A D, and height C B, and that the neceſſary thickneſs of a ſtone arch at the crown was B S; here it is plain, that if the road-way were made, having a practicable ſlope as S K *a*, it would fall far below the required extrados at K I E, and conſequently, the arch, for want of a ſufficient weight over the portion A *m n*, and an equal portion on the other ſide of the vertex, would be in conſtant danger of riſing in the haunches. But a bridge formed of hollow iron vouſſoirs would be abundantly ſtrong, with far leſs thickneſs over the crown, as B *s*; and then the true extrados *e i k ſ f* would, in every part, have a proper ſlope for a road-way; while, at the ſame time, the ſtructure is in no danger of being deſtroyed for the want of an equilibrium in all its parts.

We have mentioned under the article Arch, what kind of arches ought to be preferred in the erection of bridges; and have ſhewn which are ſtrongeſt: we may here obſerve, that if there be two arches of the ſame kind, with an equilibrated load over each of them, the ſtrength of the one will be to the ſtrength of the other reciprocally as the radii of curvature at the vertices of the two arches: hence an elliptical arch, ſtanding on its ſhorter axis, will be ſtronger than a ſemicircular arch of the ſame ſpan; and the ſemicircular arch of equilibration will be ſtronger than a flat elliptical arch of the ſame ſpan. As to the effect of an additional weight over any part of an arch, it will vary in proportion of the horizontal diſtances from the extremities of the arch. Hence the greateſt danger ariſing from an additional weight, is when it lies over the crown of the arch; for then the product of the horizontal diſtances from the abutments is equal to the ſquare of the ſemi-ſpan, and is the greateſt that can be.

Since in any arch of equilibration, the preſſure ariſing from the incumbent weight at any point is reduced to the direction of the tangent at that point, we have in any ſuch arch V B, *fig.* 4. *Pl.* XXXVIII. of *Architecture*, the weight of the part V B E A, the preſſure along the tangent F B, and the horizontal preſſure in direction D B, reſpectively as the lines F D, B F, and B D, or as the correſponding lines in a triangle, whoſe ſides are ſeverally perpendicular to thoſe in B D F. Hence, it is eaſy to find the area of the portion A E V B, thus: make *c v* parallel and equal to C V, the radius of curvature at the vertex; and draw *c b* perpendicular to the tangenf B F, meeting *v b* the perpendicular to *c v* in *b*; then in the triangle *c v b*, *c v* correſponds to D B, and *v b* to D F; and the area of the parallelogram *a v*, having *v e* = V E, is equal to the area of A B V E: in like manner, by drawing *c g* perpendicular to G I, the tangent at G, we ſhould have the parellelogram *h b* equal to the portion H B over the part G B of the arch. The area of the ſpace H E V G, between the arch and the road-way, being thus aſcertained, its weight of courſe becomes known, and, conſequently, its horizontal preſſure againſt the abutment, as at G: for it will be, as the line *v g* : *v c* :: the weight over the ſemi-arch : the horizontal thruſt againſt the abutment, or a pier, at G.

But in eſtimating the thruſt againſt the piers, &c. it is moſt common to aſcertain the poſition of the centre of gravity of the load above the arch. Now, in caſes of equilibration, this may ſometimes be effected without much difficulty: for it is well known, that if a heavy body be ſuſtained by two forces, their directions muſt meet, either at the centre of gravity of that body, or in a vertical line which paſſes through it: therefore, ſince the whole incumbent weight over a properly balanced arch, is ſuſtained in equilibrio by two forces, acting in the direction of the tangents to the extreme points of the curve, the centre of gravity of the materials upon the arch will be in the vertical line which paſſes through the interſection of theſe tangents: and in moſt caſes occurring in practice, the centre of gravity will be nearly equi-diſtant from the extrados and intrados of the equilibrated arch. Thus, in the curve A V B, loaded to the equilibrium, *fig.* 5. *Pl.* XXXVIII. of *Architecture*, the centre of gravity of the ſuperincumbent maſs is in the vertical line D *d*, paſſing through the interſection of the tangents A D, and B D. And the centre of gravity of the materials A V H K, between the crown and the abutment, is about the middle of the vertical line E *e*, paſſing through the interſection of the tangents A D and V *i*. If the arch be part of a circle, *i* V is the tangent of half the arch A V, which, ſubtracted from half the ſpan, leaves A G = ſine of A V − tangent of half A V: and ſince G*e* = verſed ſine of arc A V − verſed ſine of arc *e* V, we ſhall, by adding $\frac{1}{2}$E*e* to G*e*, have the altitude of the centre of gravity, from A C the horizontal line. If A V be a parabola, A G = $\frac{1}{2}$ A C; but if it be an equilibrated curve, with a horizontal extrados, then $AG = \sqrt{\frac{VH \times CV \times R}{2VH + CV}}$, where R is the radius of curvature of the arch at the crown. When the arch is not juſtly equilibrated, other methods of finding the centre of gravity of the maſs ſupported muſt be had recourſe to. See Hutton on Bridges, p. 49—56. It may be worth while, however, to deſcribe here an eaſy practical method, accurate enough, for moſt purpoſes: namely, to draw, on a piece of card paper, a plan of the arch, and its load; then to cut out half of it as D A B C, *fig.* 6. *Pl.* XXXVIII. of *Architecture*, and to determine experimentally the point K in the piece cut out, on which, when ſupported, the whole will reſt; for this point will manifeſtly correſpond with the centre of gravity.

The place of the centre of gravity being determined, we may now ſhew how to aſcertain the thickneſs of a pier, neceſſary to ſupport a given arch. Let A B C D, *fig.* 6. *Pl.* XXXVIII. repreſent the maſs over half the arch; D E F G the pier. From the centre of gravity K of the maſs, draw K L, perpendicular to the horizon: then the weight of the arch in the direction K L, will be to the horizontal puſh, or lateral preſſure at A, in the direction L A, as K L to L A. For the weight of the arch in the direction K L, the horizontal puſh in the direction L A, and the oblique puſh in the direction K A, will be as the three ſides K L, L A, K A. So that if A denote the weight or area of the arch, then $\frac{LA}{KL} . A$, will be its force at A in the direction L A; and $\frac{LA}{KL} \times GA \times A$, its effect on the lever G A, to overſet the pier, or to turn it about the point F. Again, the weight of the pier will be as its area $EF \times FG$, and, ſuppoſing the load over the arch and the pier to be of ſimilar materials, $EF \times GF \times \frac{1}{2}FG$ or $\frac{1}{2}EF \times FG^2$, is the effect on the lever $\frac{1}{2}$FG to prevent the pier from being overſet. Here it is ſuppoſed, that the length of the pier, from point to point, is the ſame as the thickneſs of the arch, and that the centre of gravity of the pier falls in the vertical plane biſecting F G. Now, that the pier and the arch may be in equilibrio, the two effects juſt ſtated muſt be equal: therefore, we have $\frac{1}{2}EF . FG^2 = \frac{LA}{KL} \times GA \times A$, from which it follows, that the thickneſs of the pier is $FG = \sqrt{\frac{2GA \cdot AL}{EF \cdot KL}} \times A$.

In the above inveſtigation, in is ſuppoſed, that the whole of the pier is out of water: but if any part of it be immerſed in water, that part will loſe ſo much of its weight as is equal to its bulk of water, if the water can get below the pier or into the joints. This, however, may eaſily be brought into the calculation. By applying the above theorem to the ſeveral caſes which may ariſe, the thickneſs of the pier may be found, ſo that it ſhall *juſt* balance the ſpread or ſhoot of the arch, independent of any arch on the other ſide of the pier. But the weight of the pier ought a little to preponderate, or exceed in effect, the ſhoot of the arch; and, therefore, the thickneſs ought to be taken a little more than what the theorem will give: indeed, in moſt caſes occurring in practice, the thickneſs muſt be between the *fifth* and the *ſeventh* part of the ſpan of the arch.

The only remaining conſideration in the theory, relates to the form of the ends of a pier, ſo as to afford the leaſt reſiſtance to the force of the ſtream of water. Now it may be found by a fluxional proceſs, that if the water ſtrike every part of the pier with equal velocity, the end of the pier ſhould be a right lined triangle, when the force of the water upon it is the leaſt poſſible: when the variably increaſed velocity, as in the caſe of a flood, is uſed, the form of the ends comes out a little curved. One-third of the abſolute force is taken off, by making the ends of the pier ſemicircular; $\frac{11}{20}$ would be taken off, if the ends were parabolic; but when the ends are right-angled triangles, with the right angles pointed into the ſtream, the abſolute force of the water upon the pier is reduced to one half; and an acute angle pointed to the ſtream will reduce its force ſtill more. But in rivers, on which heavy craft navigate, and paſs the arch, it is generally better to make the ends nearly ſemicircular: for, although it does not divide the water ſo well as the triangle, yet it will bear the ſhock of the veſſels better, and, at the ſame time, be more likely to turn them off towards the middle of the arch.

Bridge, in *Gunnery*, the two pieces of timber which go between the two tranſums of a gun-carriage, on which the bed reſts.

Bridge, in the *Military Art. Flying bridge, pont volant,* or *pons ductarius*, ſignifies a bridge conſtructed of pontoons, leather boats, beams, hollow caſks, ſheaves of ruſhes, blown bladders, called *aſcogephyri*, or the like, laid upon a river, or marſhy and boggy ground, and covered over with planks, for the paſſage of a body of troops.

Flying bridge, pont volant, taken in a more particular ſignification, denotes a bridge compoſed of ſeveral boats, connected by a flooring of planks, and ſurrounded by a balluſtrade or railing. It is furniſhed with one or more maſts, to which is faſtened a ſtrong cable, ſupported at proper diſtances by boats, and extending to an anchor to which the other end is made faſt, in the middle of the water. By this contrivance, the bridge becomes moveable, like a pendulum, from one ſide of the river to the other, without other help than a rudder. Such bridges were formerly ſometimes conſtructed of two ſtories, for the quicker paſſage of a great number of men, or that both infantry and cavalry might paſs at the ſame time. The uſe of this kind of flying bridge is, however, attended with great difficulty and danger, and ſubject to the moſt fatal accidents. An unfortunate inſtance of this occurred at the evacuation of Nimeguen in the campaign of 1794, where, while the Dutch garriſon were occupied in croſſing the river, an unlucky ſhot from the French batteries carried away the top of the maſt, and the bridge ſwinging round to the enemy's ſide of the Waal, above 400 of the garriſon were immediately made priſoners. Thoſe who remained in the tower, to a much greater number, bereft of the means of eſcape, ſurrendered to the beſiegers.

Another kind of *flying*, or *floating bridge*, is formed of two ſmall bridges laid over one another in ſuch a manner, as that the uppermoſt ſtretches and runs out by the aſſiſtance of cords drawn through ſmall pullies, placed along the ſides of the undermoſt bridge, which is thus puſhed forward, till the farther extremity of it reſts againſt the place it is intended to be fixed upon.

When theſe two bridges are extended to their utmoſt length, ſo that the two middle ends meet, they ſhould not be above four or five fathoms long; for if longer, they will break. Their chief uſe is for ſurpriſing out-works, or fortified poſts that have but narrow moats. In the memoirs of the Royal Academy of Sciences, we find a new contrivance of a floating bridge, which lays itſelf on the other ſide of the river. Vide Hiſt. Acad. R. Scienc. an. 1713. p. 104.

Draw-bridge, or *pons ſubductarius*, is a bridge faſtened at one end with hinges, ſo that the other end may be lifted up or let down by ſome eaſy contrivance. The moſt common method is by a kind of balance called *plyers* (which ſee); in which caſe the bridge ſtands upright, to hinder the paſſage of a moat, or the like; the breadth of this bridge is uſually about nine or ten feet, and its length about fifteen feet. There are others ſo conſtructed as to be drawn back, for hindering a paſſage, and to be thruſt over again for affording a paſſage. Others open in the middle, half turning to one ſide, and the other half to the other, being joined again at pleaſure; but theſe are ſubject to an obvious inconvenience, as one half of them remains on the enemy's ſide. The marquis de L'Hopital has given the conſtruction of a curve, in which a weight will always be a counterbalance to a draw-bridge; which the younger Bernouilli has ſhewn to be no other than the cycloid. Act. Erud. Lipſ. an. 1695.

Draw-bridges are likewiſe frequently uſed on canals, navigable rivers, and wet-docks; for ſmall canals they conſiſt of one leaf or frame only, moveable on hinges; but for large canals, ſuch as the Forth and Clyde canal, in Scotland, and for wet-docks, &c. they are made in two pieces which meet in the middle, forming an arch, and are raiſed or lowered by means of balance frames, moveable on the tops of uprights, ſuited in height to the magnitude of the bridge. Such bridges, however, have been found inconvenient in uſe, owing to the obſtruction they give to the yards and rigging of ſhips in paſſing through them. This gave riſe to the invention of a different ſort of bridge, which, for ſmall canals, conſiſts of one frame or leaf only, turning on a centre or ſeries of balls or rollers; and for large canals, or navigable rivers, they are formed of two parts, which meet in the middle. The firſt that have come to our knowledge are thoſe at Cherbourg and Toulon. Neither of them, however, are ſo complete as thoſe that have lately been conſtructed at the Weſt India and London docks; the latter ſpans 40 feet, and 15 feet wide in the roadway, and is made of thin ribs of caſt iron, about an inch and a half thick, turning on a number of concentric rollers, moving between two circular rings of caſt iron, which are very nicely turned, and there is a flap for each leaf, which lets down by a ſcrew, and abuts againſt the ſtone work on each ſide, forming the whole, when ſhut, into an arch, capable of carrying any weight which can ever paſs over it.

The whole, though weighing 85 tons, moves with great eaſe, and can be opened and ſhut in leſs than three minutes, thereby occaſioning very little obſtruction to travellers, while veſſels paſs through the locks.

Bridge of communication, is a bridge made over a river, to preſerve a free intercourſe between two armies, or fortified places, ſeparated by the ſtream.

The bridge now moſt generally employed, and which, by reaſon of its ſuperior efficacy, has gradually almoſt ſuperſeded the uſe of all thoſe above-mentioned, is that conſtructed of copper or wooden boats, faſtened with ſtakes or anchors to the bed of the river, and covered over with planks. Modern armies generally carry with them a number of theſe copper boats, or pontoons, that they may always be in readineſs for throwing over bridges. Several of theſe being joined ſide by ſide, till they reach acroſs the river, and planks laid over them, make all plain for the troops to march upon.

The moſt remote ages of antiquity furniſh us with many remarkable inſtances of bridges of this kind. One of the earlieſt upon record, is that laid by Darius Hyſtaſpes over the Iſter, or Danube, in his Scythian expedition, about the year before Chriſt 508. Herodotus, l. iv. c. 98. Darius alſo croſſed the Thracian Boſphorus with 700,000 men by means of a bridge of boats, the ſtrait being five ſtadia, or 1008 yards in breadth. That of Xerxes, in the year 480 before Chriſt, ſeven Greek ſtadia, or, as ſome eſtimate them, nearly a mile in length, acroſs the Helleſpont, is ſtill more remarkable. The boat-bridges of Xerxes began at Abydos, and terminated a little below Seſtus. This paſſage, which is the narroweſt part of the ſtrait, is only about 375½ toiſes, or 800 yards wide. But, as the length of the bridges is ſaid to have been ſeven ſtadia, M. D'Anville (M. de l'Acad. des Bell. Lettr. t. 28. p. 334.) has from thence inferred, that theſe ſtadia were only 51 toiſes, or 108 yards, each. The firſt bridge of Xerxes having been carried away by the force of a tempeſt, he ſubſtituted two others, that towards the Pontus Euxinus, conſiſting of 360 veſſels of the largeſt dimenſions uſed in the ancient navies; the other of 340. Theſe were ſteadily moored by means of large anchors. Six immenſe cables, faſtened to large piles driven into the oppoſite ſhores, extended the whole length of the bridges. Acroſs theſe were laid trunks of trees, and upon them a flooring, which was covered with earth for the paſſage of the army. The whole was ſecured by a railing on each ſide. This contrivance is the model of moſt of the bridges of boats which have ſince been conſtructed, with this difference, that the veſſels of Xerxes were arranged ſtem and ſtern upon the water, a plan exactly contrary to the preſent method. That the Perſians were in the habit of conſtructing bridges of this kind, appears from theſe examples, and from another recorded by Xenophon, who mentions that of Sitace over the Tigris, compoſed of 27 boats. The Greeks and Romans were very expert in this part of the military ſcience. Several bridges of boats are mentioned by Appian, in his account of the ſocial war. That of Cæſar over the Rhine is familiar to the readers of ancient hiſtory; and in all his campaigns, we obſerve particular attention on the part of that celebrated commander with regard to the paſſage of rivers, or preſerving communications by means of bridges. In the conteſt between the armies of Otho and Vitellius about Cremona, a bridge of this kind is noticed by Tacitus. That of Trajan over the Danube has been already mentioned. Where boats were wanting, the ingenuity and cruelty of the ancients found other expedients for overcoming the obſtacles preſented by the rivers to their progreſs. Hamilcar Barcas, in his war againſt the mercenaries, croſſed the Macar by means of the following ſtratagem. He obſerved that when the weſt-north-weſt wind prevailed, the ſand it agitated almoſt choaked up the mouth of the river, and formed a kind of natural bridge for the paſſage of his troops. He availed himſelf of this diſcovery to paſs the Macar in the night, and obtain by ſurpriſe an eaſy victory. Sapor the Perſian, by a refinement in cruelty, made uſe of the bodies of his priſoners to facilitate the paſſage of his army. (Vid. Herod. lib. iv. cap. 97, 101.—Ibid. lib. vii. cap. 33—36.—Xenophon Anab. lib. ii.—Appian, de Bel. Civ.—Cæſar de Bel. Gall. lib. iv.—Tacitus, hiſt. lib. ii.—Dion Caſſius, hiſt.—Polybius, lib. i.—Trebell. Poll. in Valerian.)

Of late years the laying of bridges acroſs rivers has been greatly improved and facilitated. In the campaigns of 1799 and 1800 in particular, this branch of the military ſcience attained that pinnacle of excellence which it will be difficult to ſurpaſs. Few objects preſent more varied details than the croſſing a river by open force, and in preſence of an enemy. In operations of this kind, localities and other phyſical circumſtances differ ſo infinitely, and give riſe to ſuch numerous combinations of advantages or diſadvantages, that it is impoſſible to lay down any given precepts which may be very applicable in all caſes. What may be very proper and feaſible upon one river, or at a certain ſeaſon of the year, may be impracticable elſewhere, or in any other period. Sometimes the neceſſaries for the expedition muſt be tranſported by water; at others, by land. Rivers which have marſhy banks, a ſmooth bed, an even current, and a muddy bottom, require totally different precautions from thoſe with a rapid and formidable current, which are overhung with thick woods, or have a rocky bottom. The beſt commentary upon theſe ſeveral caſes, will be a detailed account of the operations adopted in them.

The paſſages of the Rhine by the French troops at Urdingen, Neuwied, Kehl, and Dierſheim; at Reichlingen, Atzmoor, and Luciſtieg in Swiſſerland; thoſe of the Limmat, the Danube, the Lech, the Inn, and finally of the Mincio, will evince the progreſs lately made in the conſtruction of bridges of pontoons. Two of theſe have been treated with great preciſion by an engineer in the French ſervice, whoſe work well deſerves the attention of military men in general. (Dedon, relation des paſſages, de la Limmat et du Rhin. Par. 1801, 8vo.)

Under this article of *bridges* we may alſo mention *portable bridges*, eaſily taken aſunder, and put together again. M. Couplet mentions one of this kind, 200 feet long, and which 40 men may carry. See Du Hamel. Hiſt. Roy. Acad. Scienc. l. iii. § 5. c. 4.

Pendant, or *hanging bridges*, called alſo *philoſophical bridges*, are thoſe which are not ſupported by poſts or pillars, but hang at large in the air, being ſuſtained only at the two ends or butments. Of ſuch bridges, conſiſting of a ſingle large arch, inſtances have been already mentioned. Bridges of this kind are uſed by the Spaniards for paſſing the torrents in Peru, over which it would be difficult to throw more ſolid ſtructures either of ſtone or timber. Some of theſe hanging bridges are formed ſo ſtrong and broad, that loaded mules paſs along them. Ulloa, tom. i. 358. Dr. Wallis gives the deſign of a timber bridge, 70 feet long, without any pillars, which may be uſeful in places where pillars cannot be conveniently erected. Phil. Tranſ. N° 163, p. 714. Dr. Plott informs us, that there was formerly a large bridge over the caſtle-ditch at Tutbury in Staffordſhire, made of pieces of timber, none much above a yard long, and yet not ſupported underneath, either with pillars or arch-work, or any other ſort of prop whatever.

It has been already mentioned, that the ancient Romans paid particular attention to the conſtruction and reparation of bridges; and that in the middle ages the building of bridges was reckoned among the acts of religion. By our ancient laws, *pontium reparatio*, or the reparation of bridges, was part of the *trinoda neceſſitas*, to which every man's eſtate was ſubject. However, by the great charter, 9 Hen. III. c. 15. no town, nor freeman ſhall be diſtrained to make bridges nor banks, but ſuch as of old time, and of right, have been accuſtomed. And none can be compelled to make new bridges, where none were ever before, otherwiſe than by act of parliament. 2 Inſt. 701. By the common law, ſome perſons are bound to repair bridges by reaſon of the tenure of their lands or tenements; and ſome by reaſon of preſcription only. 2 Inſt. 700. But if a man make a bridge for the common good of all the ſubjects, he is not bound to repair it; and if none are obliged by tenure or preſcription at common law, then the whole county or franchiſe ſhall repair it. 2 Inſt. 701. By 22 H. VIII. c. 5. it is enacted, that, as in many places it cannot be known and proved, what hundred, town, pariſh, perſon, or body politic, ought to repair bridges broken in the highways, in every ſuch caſe, the ſaid bridges, if they be without a city or town corporate, ſhall be made by the inhabitants of the county; if within a city or town corporate, then by the inhabitants of ſuch city or town corporate; if part be in one ſhire, city, or town corporate, and part in another, or part within the limits of a city or town corporate, and part without, the inhabitants of the ſhire, cities, or towns corporate, ſhall repair ſuch part as lies within their limits. The decays of bridges are preſentable in the leet, or torn. 2 Inſt. 701. By the above act, the juſtices, or four of them at the leaſt, ſhall have power to inquire, hear, and determine in the general ſeſſions, of all manner of annoyances of bridges broken in the highways, to the damage of the king's liege people, and to make ſuch proceſs and pains upon every preſentment againſt ſuch as ought to be charged to make or amend them, as the king's bench uſually doth, or as it ſhall ſeem by their diſcretions to be neceſſary and convenient for the ſpeedy amendment of ſuch bridges. Such part of the highways as lies next adjoining to any ends of any bridges within the ſpace of 300 feet, ſhall be made and repaired as often as neceſſary; and the juſtices ſhall inquire into, and determine annoyances in ſuch highways. By 12 Geo. II. c. 29. no money ſhall be applied to the repair of bridges, until preſentment be made by the grand jury at the aſſizes or ſeſſions, of their inſufficiency, inconveniency, or want of reparation. Again, by 1 Ann. ſt. 1. c. 18. no fine, iſſue, penalty, or forfeiture, upon any preſentment or indictment for not repairing bridges, or the highways at the ends of them, ſhall be returned into the exchequer, but ſhall be paid to the treaſurer, to be applied towards the ſaid repairs, and not otherwiſe: and no preſentment or indictment for not repairing bridges, or highways at the ends of bridges, ſhall be removed by "certiorari" out of the county into another court. The charges of repairing and amending bridges, and highways at the ends of them, ſhall be paid out of the general county rate. 12 Geo. II. c. 29. The four juſtices in ſeſſion may appoint two ſurveyors, with ſalaries, to ſee the bridges amended. 22 H. VIII. c. 5. This buſineſs of ſurveying bridges is uſually annexed by the juſtices to the office of the high conſtables, with the allowance of ſalaries. The ſtat. 14 Geo. II. c. 33. gives juſtices the power of changing the ſituation of bridges, as it enables them to purchaſe lands adjoining any county bridge, for the more commodious enlarging, and convenient rebuilding the ſame. By 12 Geo. II. c. 29. juſtices, at their general or quarter ſeſſions, after preſentment made by the grand jury of bridges wanting reparation, may contract for rebuilding and repairing the ſame, for any term not exceeding ſeven years, at a certain annual ſum. They ſhall give public notice of their intention to contract, make contracts at the moſt reaſonable prices, and take ſecurity of the contractors for due performance.

If a man has toll for men or cattle paſſing over a bridge, he is to repair it. And toll may be paid in theſe caſes by preſcription or ſtatute.

By many ſpecial ſtatutes, enacted upon the occaſion, it is made felony to deſtroy bridges, &c. erected by virtue of theſe acts of parliament.

Bridge-*maſters*, are officers of the city of London, choſen by the citizens, who have certain fees and profits belonging to their office, and the care of London bridge, &c.

Bridge, in *Muſic*, a ſmall wooden machine for ſtrings to reſt on, in tuning violins, tenors, baſes, guitars, monochords, &c. In this laſt the bridges are moveable.

BRIDGEND, in *Geography*, a town of Glamorganſhire, in South Wales, ſituated on the banks of the river Ogmore, over which is a ſtone bridge, dividing the town into two parts. One of theſe is called Bridgend, and the other Newcaſtle. The latter, being ſeated on high ground, commands ſome very fine and extenſive proſpects. There is another part of the town called Oldcaſtle, by way of diſtinction from the former, each of which was formerly protected by a caſtle, and ſome remains of both are ſtill ſtanding. At Oldcaſtle is a chapel of eaſe under Coity, that being the mother-church; and at Newcaſtle is a large well-built pariſh church. The river Ogmore abounds with ſalmon, trout, ſewin, and various other fiſh, with which the markets are generally well ſupplied. The ſoil round Bridgend is fertile and well cultivated; and the town is alſo in a ſtate of conſiderable improvement. The agricultural ſociety of the county has eſtabliſhed a woollen manufactory in this town, and ſupplied it with different machines. About two miles eaſt is the village of Coity, where are the remains of a very large and venerable caſtle, which, next to Caerphilly, was the largeſt in South Wales. Bridgend has a good weekly market on Saturdays. and two fairs annually. It is 20 miles from Cardiff, 181 W. from London; contains 1688 houſes, and 7140 inhabitants. Malkin's Tour in South Wales, 4to. 1804.

BRIDGENORTH, a large ancient borough town of Shropſhire, England, is built on the top and declivities of a hill, which riſes ſteeply from the river Severn. It covers a conſiderable extent of ground; many of the ſtreets are narrow, and ſome alleys which lead from thoſe to the river, conſiſt of long flights of ſteps. Bridgenorth appears to have obtained ſome conſequence as early as the time of Ethelfleda, wife of king Ethelred; and was fortified and furniſhed with a caſtle by Robert de Belleſme, or Beliaſme, ſon of Roger de Montgomere, in the time of Henry I. Collecting a few aſſociates, he here made a ſtand againſt the forces of that monarch, but, being vanquiſhed, was obliged to fly into Normandy; where, according to Speed, he continued to "blow thoſe embers that others had kindled." The caſtle at this place appears to have been of great extent and importance, and was moſtly occupied by the Normans during their wars againſt the Welſh. In the reign of Richard II. it was committed to the cuſtody of Hugh de Burnell, a favourite of that monarch, whoſe remains were interred at Hales Owen church in this county. In the civil wars, this caſtle was the ſcene of a violent ſtruggle between the forces of the king and thoſe of the parliament. It was then much battered; and one of the towers, which now leans about ten degrees out of the perpendicular, was then partly undermined. The ſingular poſition of this building very much reſembles one at Piſa in Italy, and is often contemplated with wonder by the paſſing traveller. Part of the ſite of the caſtle is occupied by a large handſome new church, and at the other end of the town is an ancient church, which ſuffered much in its ornaments, painted glaſs, &c. in the above wars.

Bridgenorth is ſeparated into two parts, divided by the Severn, and reſpectively called, from their relative ſituations, upper and lower town. The hill on which the former ſtands riſes almoſt perpendicularly from the river, and conſiſts moſtly of ſolid rock, in which many cellars are excavated.

This borough had ſeveral privileges granted it by charters from Henry II. and king John; and returned members to parliament *ab origine*. It is governed by two burgeſſes, annually elected out of twenty-four aldermen; and the right of election is veſted in the burgeſſes and freemen within and without the borough, amounting to about 700. There are a large well ſupplied weekly market on Saturdays, and three annual fairs. The town contains 945 houſes, and 4408 inhabitants, 3806 of whom are employed in the manufactures and trade of the place.

David Caldwell died at Bridgenorth in November 1796, at the advanced age of 107 years. He was born in the army in the ſhire of Ayr, Scotland, and ſerved as a drummer in king William's army, and many years a ſoldier under queen Anne. He perfectly retained his faculties to the laſt. Camden's Britannia. Magna Britannia. Hiſtory of the Boroughs of Great Britain.

BRIDGES, James, in *Biography*, publiſhed, in 1751, a well-known work on the ſubject of farriery, in which he appears to have been well verſed, with the following quaint title: "No Foot, no Horſe; or, an Eſſay on the Anatomy of the Foot of a Horſe. With particular Directions for the Cure of the chief internal Diſeaſes the Horſe is ſubject to." With plates, 8vo London. Haller. Bib. Anat.

BRIDGET, St. in *Heraldry*, an order of knighthood inſtituted in Sweden in 1366. They were to oppoſe hereſy, ſecure the confines of the kingdom, bury the dead, ſuccour widows and fatherleſs children, and to keep up hoſpitality. Their enſign was a croſs of eight points, four of which were moline, the other flower de lis, azure, and under a tongue of five proper. This badge or enſign was embroidered on a ſhort white robe.

BRIDGE-TOWN, in *Geography*, the capital of the iſland of Barbadoes, ſituate in the ſouth-weſtern part of the iſland, in the pariſh of St. Michael, and in the innermoſt part of Carliſle bay. This bay is large enough to contain 500 ſhips, being one league and a half long, and one broad; but the bottom of it is foul, and apt to cut the cables. The town lies at the entrance of St. George's valley, which runs ſeveral miles into the country. It has a free-ſchool, an hoſpital, and a college, founded and liberally endowed by colonel Codrington; but its ſucceſs is ſaid not to have anſwered the deſigns of its founder. It has alſo commodious wharfs for loading and unloading goods, and is well defended by a number of forts; ſuch as James fort on the weſt, Willughby's fort on a tongue of land running into the ſea, Needham's fort, and St. Anne's fort, which lies more within the land. But thus ſecured from foreign enemies, it is very ſubject to hurricanes, and it has often ſuffered by fires. It was burnt down in 1688; and in 1756, 1766, and 1767, the greateſt part of the town was deſtroyed. Before the devaſtation occaſioned by the two laſt of theſe fires, it contained 1500 houſes, moſtly conſtructed of brick, very elegant, and ſaid to be the fineſt and largeſt in all the Caribbee iſlands; the town has been ſince rebuilt; but it had ſcarcely riſen from its ruins, before it was made a ſcene of deſolation by a violent ſtorm in 1780. See Barbadoes. It is again recovering its former ſplendour. The ſtreets are paved, and the houſes lofty, and well built. The church of St. Michael is as large and beautiful as many cathedrals, and is furniſhed with an excellent organ and ring of bells, and a curious clock. Upon the whole, the town is deſtitute of few elegancies or accommodations for entertainment and amuſement which are to be found in the cities of Europe. This is the ſeat of the governor, council, aſſembly, and court of chancery, &c. Within a mile of the town to the north-eaſt, the governor has a handſome country villa, built by the aſſembly, called "Pilgrims." The number of militia for Bridge-town and the precinct of St. Michael is 1200 men, who are called the royal regiment of foot-guards. Packet boats have been lately eſtabliſhed to carry letters to and from Great Britain monthly. The adjacent grounds are low and flat, and were often overflowed by the ſpring tides, which rendered the ſituation of the town inſalubrious; but moſt of them have been drained, and it is now reckoned as healthy as any place in the iſland. N. lat. 13° 9′ 30″. W. long. 60° 2′ 30″.

Bridge-town, a poſt-town of America in Cumberland county, and diſtrict of Maine, having Hebron on the N.W. and Bakers-town (on the weſt ſide of Androſcoggin river) on the S.E.; which three ſettlements lie on the northern ſide of little Androſcoggin river. It contains 646 inhabitants; and lies 40 miles N.W. from Portland, and 156 N.E. from Boſton. Bridge-town conſiſts of large hills and vallies; the highland affords red oak of large ſize, and the vallies are covered with rock maple, baſs, aſh, birch, pine, and hemlock. In this diſtrict is a pond, on the eaſt ſide of which is a cove, extending about 100 rods farther to the eaſt than the general courſe of the ſhore, and ſo ſhallow, that a man may wade 50 rods into the pond. On the bottom of this cove are ſtones of various ſizes, which appear to have an annual motion towards the ſhore, though ſome of them are two or three tons in weight. The ſhore of the cove is lined with theſe ſtones, which ſeem to have moved out of the water.

Bridge-town, the chief town of Cumberland county in New Jerſey, near its centre; 50 miles S.S.E. of Philadelphia, 80 S. by E. of Trenton, and 145 S.W. of New York.—Alſo, a poſt-town of Cumberland county, on Cohanzié creek, 35 miles S. from Philadelphia.—Alſo, a poſt-town in Queen's county, Maryland, lying on the weſtern ſide of Tuckahoe creek, 8 miles E. from Centreville, as far S.E. from Church-hill, and 65 S.W. from Philadelphia.—Alſo, a town of Kent county in the ſame ſtate, ſeated on the north bank of Cheſter river, 7 miles S.E. from Croſs Roads, and 4 ſoutherly from Newmarket.

Bridge-town, in the iſland of Antigua. See Willoughby *Bay*.

BRIDGEWATER is a large, populous borough, and market town of Somerſetſhire, England, ſeated on the river Parret, which winds in a bold ſtream hence towards the eſtuary of the Briſtol channel. The town is ſituated in a flat and rather woody country, having rich moors to the north and eaſt. It was formerly of much greater importance than at preſent, as it has ſuffered material injury by means of conflagrations, and various viciſſitudes of warfare; particularly in 1645, when the town was beſieged by the parliament's army under the command of ſir Thomas Fairfax, who committed great devaſtations. The markets are on Thurſdays and Saturdays; and for the accommodation of thoſe who frequent them, a ſpacious and convenient market-houſe has been lately erected. There are alſo four annual fairs. Bridgewater is a very ancient corporation, governed by a mayor, recorder, two aldermen, and twenty-four common-councilmen. The town was formerly protected by a caſtle, the greater part of which was demoliſhed during the civil wars. It was in the caſtle yard, or caſtle fields at Bridgewater, that the duke of Monmouth encamped his raw and undiſciplined troops, previouſly to his battle on Sedgemoor, where he was defeated. The caſtle and manor were formerly held by the queens of England. The corporation have alſo their peculiar manor within the town. The church dedicated to St. Mary is a large handſome ſtructure, with a tower and ſpire at the weſt end. A very fine altar piece was given by the Hon. Anne Powlett. Here was formerly an ancient hoſpital founded by William Briwere in the time of Henry III., but not a veſtige of it remains. Bridgewater ſends two members to parliament; and the right of voting is veſted in the inhabitant houſeholders paying ſcot and lot. The revenues of the corporation, conſiſting of the manor of the borough, the great and ſmall tythes, with ſome manors in Dorſetſhire, are valued at 5000l. per annum. The authority of the magiſtrates extends throughout the pariſh, and the corporation are conſervators of the river Parret. The burgeſſes are free in all parts of the united kingdom, except London and Dublin; and the ſheriff of Somerſetſhire cannot ſend any proceſs into the borough, it having been made a county within itſelf by Henry VIII. It was made a free borough by king John, a mayor town by Henry IV. and ſent to parliament 23d Edward I. This borough was formerly under the patronage of the celebrated Bubb Doddington, and has been the object of ſtrong conteſt in different elections. The Midſummer county ſeſſions are conſtantly held here; and the aſſizes every other year. At the port the manufactures of Mancheſter, Liverpool, and Birmingham, &c. are landed for the uſe of the weſtern counties. The duties paid for imports are very conſiderable. Coals are alſo brought from the Welch coaſt to ſupply the town and neighbourhood: the duty on which for ſeven years was eſtimated at between 16 and 17,000l. Thirty-two veſſels belong to the port from 20 to 120 tons burthen. The town contains 493 houſes, and 3634 inhabitants, 986 of whom are engaged in trade and manufactures. The houſes are built in an irregular manner; but the principal ſtreet is wide, and well paved. The quay is alſo large and commodious. There are ſeveral meeting-houſes for preſbyterians, anabaptiſts, and quakers; and it is a ſingular circumſtance, that in one of theſe there is a pew appropriated for the mayor and aldermen, ſhould they be of that perſuaſion. Bridgewater is 147 miles W. from London, and 12 S. from the Briſtol channel. A ſuburb called Eaſtover, is joined to the town by a ſtrong ſtone bridge. See SEDGEMOOR. Collinſon's Hiſtory of Somerſetſhire, vol. iii. 4to. 1791.

BRIDGEWATER, a townſhip of America, in Grafton county, New Hampſhire, incorporated in 1769, and containing 664 inhabitants.—Alſo, a townſhip of Somerſet county, in New Jerſey, containing 2578 inhabitants, including 357 ſlaves.—Alſo, a conſiderable townſhip in Plymouth county, Maſſachuſets, containing 5200 inhabitants, of whom many are manufacturers of hardware, nails, &c.; about 30 miles E. of S. from Boſton.—Alſo, a townſhip of Windſor county, Vermont, about 55 miles N.E. of Bennington, incorporated in 1785, and containing 780 inhabitants.

BRIDLE, from *la bride*, Fr. in the *Manege*, is an inſtrument for the guidance and management of the horſe by the hand, and is compoſed of the *bitts* and *reins*, which ſee.

"It is probable, that ſome time muſt have elapſed before the inſtrument called a *bitt* was uſed for the government of horſes, by putting it into their mouths. By looking back into antiquity for the practices of paſt times, and the origin of many cuſtoms deſcended to us, we every where find the greateſt plainneſs and ſimplicity in their firſt ſtate; and the more ancient, the ruder and ſimpler they were. The ſtyle of architecture, the faſhion of the habits and dreſſes of early times, the method of preparing food, and many articles beſides, are convincing proofs of this aſſertion. By degrees light broke in, and men advanced progreſſively from one improvement to another. It is curious to obſerve, that in ancient Greece many of the terms appropriated to navigation were alſo uſed in horſemanſhip. The word κέλης, or keles, which ſignifies a *runner*, ſerved likewiſe, as Suidas ſays, to denote light ſailing veſſels, and ſwift horſes. Homer calls ſhips horſes of the ſea; and the pilot, the coachman or driver of the veſſel. Pindar calls a bridle an anchor; and in this ſenſe Neptune may properly be called the inventor of the horſe, which implied no more than a ſhip. Theſe little obſervations are only offered to the reader as an argument that bitts and bridles were uſed in the moſt diſtant ages; but at what exact period to fix their origin, is a taſk by no means eaſy to perform. It is probable to ſuppoſe, that the people of the firſt ages of the world, prompted by their neceſſities, and acting from them alone, made no other uſe of the horſe at firſt than what might be for domeſtic purpoſes, teaching him to ſubmit to carry men and burdens; and having reconciled and made him patient, they taught him, by degrees, to diſtinguiſh and obey the different ſounds of the voice, as well as to be directed by the guidance of a ſwitch or wand which the rider carried in his hand.

"It is, however, apparent, that they made uſe of cords or thongs to ſtop and confine the horſe in any place where they choſe he ſhould ſtay. Theſe cords they faſtened round the horſe's neck, as may be ſeen in the figures, though of a much later date, carved upon Trajan's pillar at Rome. Theſe ropes hanging down from the necks of horſes, are imagined to have ſuggeſted the firſt hint of traces for drawing machines. Strabo ſays that the Moors, or Africans, uſed cords for bridles. It is probable to think, that after a time they might diſcover, that if a cord was put into the mouth, or at leaſt over the noſe, like our halters, which may be uſed both ways at the ſame time, it would be a more effectual method of guiding and controlling the horſe; and hence is derived the ſuppoſed origin of bridles, which, in after ages, have been multiplied in ſuch numbers, and under ſuch a variety of ſhapes, increaſing and improving as men grew more ſkilful in riding, and applied it to ſundry purpoſes." Berenger, Hiſt. and Art of Horſemanſhip, vol. i. p. 40.

When bridles came into faſhion, the moſt remarkable were thoſe called "lupata," having bits of iron reſembling wolves' teeth, to which Horace refers, l. i. od. 8.

> "Cur neque militaris
> Inter æquales equitat, Gallica nec lupatis,
> Temperat ora frænis?"

Virgil (Georg. ii. l. 115.) ſeems to aſcribe the firſt invention of them to the Lapithæ, or Centaurs, who inhabited a town in Theſſaly, called "Pelethronium," when he ſays,

> "Fræna Pelethronii lapithæ, gyroſque dedere
> Impoſiti dorſo.————"

But ſome are of opinion, that he ſpeaks of bridles, as invented not by the Lapithæ, but by a perſon of that nation, whoſe name was Pelethronius, to whom Pliny (H. N. l. vii. c. 56.) attributes the invention of them.

BRIDLE, in *Anatomy*. See FRÆNUM.

BRIDLE, among *Surgeons*, is a kind of BANDAGE contrived for retaining the lower jaw in its place.

BRIDLE, *ſcolding*, or BRANK, an inſtrument formerly uſed in ſome parts of Scotland, and in Staffordſhire, for correcting ſcolding women. It conſiſts of a kind of head-piece, which opens and incloſes the head, whilſt an iron appendage is put into the mouth, and takes particular hold of the tongue, which it effectually keeps from ſtirring: thus harneſſed, the offender is led in triumph through the ſtreets. A figure and deſcription of the Staffordſhire bridle is given by Dr. Plott, who prefers it to the ducking-ſtool, which not only endangers the health of the party, but alſo gives the tongue liberty betwixt ſucceſſive dips; to neither of which inconveniences this inſtrument is liable.

BRIDLE-*chain*, in *Huſbandry*, a name given by our farmers to a part of the ſtructure of their PLOUGH. This is an iron chain of ſeveral links, faſtened at one end to the beam of the plough, near that part where the collar receives the tow-chain; and faſtened at its other end to the ſtake of the plough, or to that upright piece which runs parallel to the left crowſtaff, and at its bottom pins in the tow-chain; this ſtake is faſtened to the crowſtaff, ſometimes by the end of this *bridle-chain*, and ſometims by a wythe or cord.

Bridle-*hand*, in the *Manege*, ſignifies the horſeman's left-hand, in reſpect of which the right-hand is called the ſpear or ſword-hand.

Bridles, in *Sea language*, denote the upper part of the moorings in the king's harbours, to ride ſhips of war.

Bridles *of the bow-line.* See Bow-*line*.

BRIDLINGTON, or Burlington as ſometimes written, in *Geography*, is a ſea port town of the eaſt riding of Yorkſhire in England. It is built on the ſhore of a bay, to which it gives name, which is found to be a ſafe harbour for veſſels, when the wind is ſtrong from the N.N.W. and N.E., being ſecured by two projecting piers of conſiderable extent, running out obliquely into the ſea, and rendering the entrance very narrow. The principal trading veſſels are colliers, and moſt of the inhabitants are connected with theſe. Here was formerly a priory of black canons, founded early in the reign of Henry I. The church has been large, but its choir, tranſepts, and ſteeple, have been entirely deſtroyed, leaving only the nave for parochial ſervice. A Mr. William Huſtler was a conſiderable benefactor to the town, and in the 16th Charles II. Richard Boyle baron Clifford was created earl of Burlington, (from this town). In the 8th William III., and 1ſt of George I. acts of parliament were obtained to repair the piers, &c. of the harbour. Bridlington is now frequented as a bathing place; it lies at about 10 miles S.W. of Flamborough-head, 40 eaſt of York, and 206 north from London. The houſes amount to 707, and inhabitants to 3130. Gough's edition of Camden's Britannia.

BRIDON, or Bridoon, in the *Manege*, is derived from the French *Bridon*, a diminutive of *la bride*. By la bride, the French denote the reins going to the curb; and by bridon, the reins going to the ſnaffle or leſſer bit, which is held in reſerve in caſe of any accident with the former. In the Engliſh language, it is called a bridoon, and a very different uſe is made of it. The reins of the bridoon paſs parallel to the line of the horſe's head, through a loop hanging from the head ſtall, and from thence to the hook of the ſaddle, for they are only uſed in harneſſed horſes at preſent, eſpecially of the richer orders of ſociety, and where elegance of appearance is conſidered.

The rein ſo diſpoſed draws againſt the corners of the mouth, and not upon the bars, as the ſnaffle does, and tends more forcibly to elevate the head, as the curb does to depreſs it; though they are often uſed at one and the ſame time, the ſnaffle having an intermediate effect.

Bridles of late have been conſtructed with a property, ſomewhat ſimilar to the bridoon, to be uſed with the hand, the rein paſſing from the head ſtall, through a tube or pipe placed in the ſituation of the croſs piece of the ſnaffle, to the hand; ſo that when drawn tight againſt the mouth, it preſſes the cheeks upwards, and ſhortens the head ſtall, which has not a good appearance. A ring is alſo fixed to this hollow croſs piece for the reins, as in the ordinary ſnaffle, ſo that the rider has it in his option to uſe either.

BRIDPORT, in *Geography*, an ancient borough, market and manufacturing town of Dorſetſhire, England, is ſituated in a vale at the diſtance of about one mile north of Bridport bay. It is nearly ſurrounded by eminences, ſome of which aſſume a conical ſhape; and on its weſtern and eaſtern ſides, run two ſmall rivulets, which are highly uſeful to the manufacturers. Seated on the great weſtern road, at the diſtance of 135 miles S.W. from London, it derives many advantages from travellers, and further advantages from its contiguity to the Engliſh channel.

It ſeems to have been a very conſiderable town before the conqueſt, as it is thus noticed in the Domeſday Book: "In Edward the Confeſſor's time here were 120 houſes, ſubject to every ſervice to the king, and paying geld for 5 hides, viz. to the uſe of the king's domeſtics, (Huſcarles) ½ a mark of ſilver, except the cuſtoms pertaining to the farm of one night for one night's lodging. Here was one mint-maſter, who paid to the king one mark of ſilver, and 20 ſhillings on the charge of coinage. Now there are but 100 houſes, and the remaining 20 are ruined, that the inhabitants are unable to pay the tax." The manor anciently belonged to, and was held of the crown, in fee-farm by the burgeſſes, to whom it now belongs. The town received its charter of incorporation from Henry the III., who granted "to the men of Bridport that the village ſhould be a free borough; and that they and their heirs ſhould hold it, with all liberties, &c. paying yearly to the exchequer at Michaelmas, the farm which they uſually paid, and 40s. for the increaſe of the village." The charter now in force was granted by Charles II. The earlieſt return to parliament was made in the twenty-third of Edward I. The right of election is veſted in the inhabitant houſeholders, paying ſcot and lot, and the number of voters is about 160. This town does not ſeem memorable for any hiſtorical tranſaction, though it appears to have been alternately the quarters of the royal and parliament's troops during the civil wars; and in the duke of Monmouth's rebellion, ſeveral exceſſes were committed here by his forces. In 1685, the town exhibited a ſolemn ſcene, when twelve of its inhabitants were executed for being actively concerned in that rebellion. The town is large, and has a very reſpectable appearance; many of the houſes being new brick buildings, and its principal ſtreets are broad and ſpacious. The number of houſes is 288; of inhabitants 3117, who are principally ſupported by the manufacture of ſeins, and nets of all ſorts, lines, twines, and ſmall cordage, as well as ſail-cloths. Large quantities of theſe articles are exported to America and the Weſt India iſlands; but the greater part is conſumed in the Newfoundland and Britiſh fiſheries; it being computed that upwards of 1500 tons of hemp and flax are worked up annually. This manufacture was ſo flouriſhing in the reign of Henry VIII., that cordage for the whole Engliſh navy was ordered to be made excluſively here, or within five miles of the place. A handſome market-houſe and town-hall has been erected in the centre of the town, on the ruins of an old chapel dedicated to St. Andrew. Here were formerly ſeveral religious foundations, no relics of which now appear. Here are alſo a charity-ſchool, three alms-houſes, and a gaol. The church is a large ancient pile of building, in the form of a croſs; the tower in the centre of the ſtructure is adorned with pinnacles and battlements. The diſſenters in this town have meeting-houſes, and are both numerous and reſpectable. The haven is ſituated at the mouth of the river Brit, a mile ſouth of the town. It does not appear that Bridport was of any conſequence in maritime affairs; and although ſeveral attempts have been made to make it a port, they have all proved ineffectual. The cliffs here are compoſed of ſand, though the ſurrounding country is covered with lime-ſtone full of ſhells. The height of the cliffs is in ſome places nearly 200 feet; and they contain belemnitæ and other foſſils; beſides pyrites, gypſum, hepatic ore, &c. Giles de Bridport, conſecrated biſhop of Saliſbury March 11, 1256, was, according to Leland, "caullid Britport, becauſe he was borne," in this town. The markets are Wedneſday and Saturday: and there are three fairs annually. Hutchins's Hiſtory of Dorſetſhire, vol. i.

Bridport, a townſhip in America, in Addiſon county, Vermont, on the eaſt ſhore of lake Champlain, oppoſite Crown point, and W. of Middlebury.

BRIDY, or Bredy, a town of Aſiatic Turkey, in the Arabian Irak; 140 miles N.W. of Baſſora.

BRIE, the name, before the revolution, of a diſtrict of France, ſituated partly in Champagne, and partly in the Iſle of France, and called from its particular ſituation "Brie Champenoiſe," and "Brie Françoiſe," or "Brie Parſienne." The principal towns are Meaux, Provins, and Chateau Thierry.

Brie *ſur Hieres*, or Brie *Comte Robert*, ſo called from Robert of France, count Dreux, a former poſſeſſor, a town of France, in the department of the Seine and Marne, and chief place of a canton, in the diſtrict of Melun, ſeated on the Yerre, and 3½ poſts S.E. of Paris. The place contains 2571, and the canton 8089 inhabitants; the territory comprehends 170 kiliometres, and 15 communes.

BRIEC, a town of France, in the department of Finiſterre, and chief place of a canton, in the diſtrict of Quimper; 2½ leagues N.N.E. of Quimper. The town contains 3000, and the canton 4735 inhabitants; the territory includes 222½ kiliometres, and 2 communes.

BRIEF, formed from the French *bref*, of the Latin *brevis*, which ſignifies the ſame, denotes a thing of ſhort extent or duration. It is more particularly uſed for a ſummary, or ſhort ſtate of a thing; and alſo for an act or writing drawn up by a notary.

Brief *atteſted*, *Breve teſtatum*, a public inſtrument clothed with the proper formalities.

Brief *of deviſing*, *Brevis diviſionalis*, denotes a laſt will or teſtament, or DEVISE.

Brief *of an oath*, *Breve ſacramenti*, an inſtrument made on oath, and authenticated by the ſubſcription of witneſſes.

Brief is alſo uſed for a judicial epiſtle, directed by a lord or other ſuperior to his ſubjects or dependents, enjoining ſomething to be done or forborn. In which ſenſe, we ſay, the lord's, king's, biſhop's, or pope's brief.

Brief alſo denotes the territory or diſtrict within which the lord's brief had courſe. In which ſenſe, we meet with the biſhop's brief, *breve epiſcopi*, the count's brief, *breve comitis*, &c.

Brief, alſo denotes the yearly revenue ariſing out of the lands uſually deſcribed in briefs.

Brief, *Breve*, in *Common Law*, is ſo called *quia breviter intentionem proferentis exponit*, becauſe couched in a few plain words without preamble, &c. See BREVE.

Brief alſo ſignifies an abridgment of the client's caſe, made out for the inſtruction of counſel, on a trial at law; in which the caſe of the party is to be briefly but fully ſtated, the proofs muſt be placed in due order, and proper anſwers made to whatever may be objected againſt the cauſe of the client by the oppoſite ſide, and in preparing this, great care is requiſite, that nothing be omitted to endanger the cauſe. An attachment has been granted againſt a party and his attorney, for ſurreptitiouſly getting poſſeſſion of the brief of a counſel on the other ſide, and applying the ſame to an improper purpoſe in his defence. 1 Bro. P. C. 519. Although a brief is not of itſelf evidence aganſt the party for whom it is prepared, yet as a diſcovery of the ſecrets and merits of his caſe may be productive of perjury or ſubornation of perjury, and thereby obſtruct the juſtice of the court in which the ſuit is depending; the obtaining of it in a ſurreptitious manner is an offence highly deſerving cenſure and puniſhment.

Brief, in *Scots Law*, a writ iſſued from the chancery, directed to any judge-ordinary, commanding and authoriſing that judge to call a jury to inquire into the caſe mentioned in the brief, and upon their verdict to pronounce ſentence.

Brief *a l' Eveſque*, denotes a writ to the biſhop, which, in "quare impedit," ſhall go to remove an incumbent, unleſs he recover, or be preſented "pendente lite." 1 Keb. 386.

Brief is alſo uſed for a letter patent, granting a licence for collecting money to rebuild churches, reſtore loſs by fire, &c.

Churchwardens are, by ſtat. 4 Ann. c. 14, to collect money upon theſe briefs, which are to be read in churches, &c. and the ſums collected to be indorſed on the brief in words at length, and ſigned by the miniſter and churchwardens; after which they ſhall be delivered, with the money collected, to the perſons undertaking them, in a certain time, under the penalty of 20l. A regiſter is to be kept of all money collected, &c.: and the undertakers, in two months after the receipt of the money, and notice to ſufferers, are to account before a maſter in chancery, appointed by the lord chancellor.

Briefs, *apoſtolical*, denote letters which the pope diſpatches to princes and other magiſtrates, touching any public affair. They are thus called, as being very conciſe, and written on paper, without preface or preamble; by which they are diſtinguiſhed from *bulls*, which are more ample, and always written on parchment, and ſealed with lead or green wax; whereas briefs are ſealed with red wax, and with the ſeal of the fiſherman, or St. Peter in a boat; a ſeal is never applied, but in the pope's preſence. The brief is headed with the name of the pope, apart; and commences with *Dilecto filio ſalutem, et apoſtolicam benedictionem, &c.* after which it proceeds directly to the matter in hand, without further preamble. Briefs are not ſubſcribed by the pope, nor with his name but with that of his ſecretary. Pope Alexander VI. inſtituted a college of ſecretaries for briefs; ſince which time they have been made much longer, and more ample than before. See ABBREVIATOR. Formerly briefs were only diſpatched about affairs of juſtice; but now they are likewiſe uſed in matters of benefices, expective graces, and diſpenſations.

Briefs *of the dead*, *Brevia mortuorum*, were letters ſent by the monks of one monaſtery to thoſe of another, with whom they were in fraternity, to inform them of the deaths or obits of their monks, for whom they were to ſay the ſtated and cuſtomary prayers and maſſes.

Theſe were alſo called *literæ currentes*, a formula of which we have in the book of the uſages of the Ciſtercian order.

Brief *of remembrance*, *Breve recordationis*, or *rememoratorium*, or *memorabile*, denotes a character, otherwiſe called NOTITIA.

BRIEG, in *Geography*, one of the largeſt and moſt fertile principalities of Sileſia, ſurrounded by thoſe of Oels, Breſlau, Schweidnitz, Munſterberg, Neyſze, Oppeln, and in a detached part of it bordering on Poland. Its form is irregular; its extent being about 36 miles in length, and from 8 to 21 in breadth. It produces corn, madder and tobacco. The firſt duke of Brieg was Boleſlaus III. who obtained it in 1314; from him it deſcended to Frederick II. who embraced Lutheraniſm in 1523, and in 1537 concluded a compact of fraternity and ſucceſſion with Joachim II. elector of Brandenburg; and on this were founded the claims of Frederick II. king of Pruſſia. The chief towns of this principality are Brieg, Ohlau, Strehlen, Nimptſch, Creutzburg, and Pitſchen; and its chief rivers are the Ohlau and Oder.

Brieg, in Latin *Brega*, a city of Sileſia, a circle-town, and the capital of the above province; ſeated on the river

Oder, and formerly one of the largeſt and moſt conſiderable cities of Sileſia; the caſtle, college, and arſenal being great ornaments to it, and moſt of the houſes well built. It has alſo a manufacture of good cloth. But in 1618 it ſuffered much from a fire, and ſtill more from the ſiege of the Pruſſians in 1741, to whom it was ceded by the peace, and who increaſed the fortifications, and built a new ſuburb. North of Brieg, at a ſmall diſtance, is a large foreſt of oak, beech, and pines, partly belonging to the city; and between them is a ſpacious meadow, interſected by a broad dike paved with ſtones, where is held on St. James's day a yearly fair for cattle and horſes. N. lat. 50° 40′. E. long. 17° 35′.

BRIEG, or BRIG, a town of Swiſſerland, and capital of one of the ſeven independent dixains or commonwealths of the Valais, bearing the ſame name; ſeated near the conflux of the river Saltina with the Rhone. The ſurrounding country abounds with paſture; and in the vicinity of the town are warm baths; 28 miles E. of Sion. N. lat. 46° 18′. E. long. 7° 49′.

BRIEL, or BRILL, a maritime town of Holland, ſituated on the north ſide of the iſland of Voorn, near the mouth of the Meuſe, with which it communicates by means of a ſpacious and convenient harbour. In 1572 the confederates of the United Provinces laid in this place the foundation of their republic; for being expelled the Low Countries by the duke of Alva, they retired to England, and having equipped a ſmall fleet of 40 ſail under the command of count Lumay, they ſailed towards this coaſt, being called in deriſion "gueux," or beggars of the ſea, and geeſe of the ſea. Upon the duke's complaining to queen Elizabeth that they were pirates, ſhe obliged them to leave England: and accordingly they ſet ſail for Enckhuyſen; but the wind being unfavourable, they accidentally ſteered towards the iſle of Voorn, and, attacking the town of Briel, which was incapable of effectual reſiſtance, they took poſſeſſion of it, fortified it, and made it the firſt aſylum of their liberty. In 1585, a treaty was concluded between the States of Holland and queen Elizabeth; and Briel was one of the cautionary towns delivered into her hands for ſecuring the fulfilment of their engagements. Accordingly it was garriſoned by the Engliſh during her reign, and part of the next; but reſtored to the States in 1616. N. lat. 51° 51′. E. long. 4° 5′.

BRIENNE-LE-CHATEAU, a town of France, in the department of the Aube, and chief place of a canton, in the diſtrict of Bar-ſur-Aube, 4 leagues N. W. of Bar-ſur-Aube. The place contains 3193, and the canton 14,692 inhabitants; the territory comprehends 277½ kiliometres, and 28 communes.

BRIENNOIS, a name given before the revolution to a ſmall diſtrict of France, in Burgundy, near the Loire, of which Semur en Briennois was the capital.

BRIENON, or BRIESNON, a town of France, in the department of the Yonne, and diſtrict of Auxerre; 2 leagues W. of St. Florentin.

BRIENTZ, a lake of Swiſſerland, in the canton of Bern, about 8 miles long and 2 wide; ſituated nearly at right angles with the lake of Thun.—Alſo, a town of Swiſſerland in the ſame canton, adjacent to the lake, and N. E. of it; famous for the cheeſe made in its vicinity; 22 miles S. E. of Bern. The river Aar runs through the centre of this lake. N. lat. 46° 41′. E. long. 7° 52′.

BRIENZA, a town of Naples, in the Principato Citra; 20 miles N. of Policaſtro.

BRIES, BRIZNA, BREZNO, or BANYA, a royal free town of Hungary, ſeated on the river Gran, which by ſucceſſive fires has been much reduced; whoſe inhabitants are chiefly employed in the breeding of ſheep.

BRIETZEN, or WRIETZEN, a town of Germany, in the circle of Upper Saxony, and Middle Mark of Brandenburg, near the Oder; 32 miles E. from Berlin. It has frequently ſuffered much from fire.

BRIEUC, ST., a city of France, capital of the department of the North Coaſts, and the ſee of a biſhop; ſurrounded by mountains, which intercept the view of the ſea, though at the diſtance only of about a mile, on which it has a ſmall harbour. The churches, of which St. Michael is the largeſt, ſtreets, and ſquares are tolerably handſome; but the town has neither walls nor ditches. The convent of the Cordeliers is well built, and has a ſpacious garden; near it is the college maintained by the town for the inſtruction of youth. Brieuc conſiſts of two parts; the firſt contains 4000, and the ſecond 4090 inhabitants; the canton of the former contains 14,737, and that of the latter 15,108 inhabitants; and the territory of both comprehends 265 kiliometres, and that of the firſt includes 5, and that of the ſecond 8 communes. N. lat. 48° 33′. W. long. 2° 58′.

BRIEUL-SUR-BAR, a town of France, in the department of the Ardennes, and diſtrict of Vouziers; 3 leagues N. of Grandpré.

BRIEY, a town of France, and principal place of a diſtrict, in the department of the Moſelle, 4 leagues N.W. of Mentz. The place contains 1433, and the canton 9626 inhabitants; the territory includes 225 kiliometres, and 32 communes.

BRIG, in *Sea Language*. See BRIGANTINE.

BRIGA, in *Geography*, a town of France, in the department of the Maritime Alps, and chief place of a canton, in the diſtrict of Monaco; 22 miles N.E. of Nice. The town contains 2895, and the canton 4386 inhabitants; the territory comprehends 365 kiliometres, and two communes.

BRIGADE, in the *Military Art*, a party or diviſion of a body of ſoldiers, whether horſe, foot, or artillery, under the command of a brigadier.

The word is French; ſome derive it from the Latin *briga*, *a brigue*, or *ſecret intrigue*. Du-Cange derives it from *brigand*, an ill-diſciplined ſoldier, who ſcours the country, and plunders it of every thing, without waiting for the enemy; as the armies of Arabs, Tartars, &c. The origin of brigand is again deduced from *brigandine*, a ſort of armour uſed in the army raiſed by the Pariſians, during the captivity of their king John in England, notorious for their robberies.

There are, ſtrictly ſpeaking, three ſorts of brigades; viz. the brigade of an army, the brigade of a troop of horſe, and the brigade of artillery. A brigade of the army conſiſts of either foot or dragoons, the exact number of which is not fixed, but generally including three regiments, or ſix battalions; a brigade of horſe may conſiſt of eight, ten, or twelve ſquadrons; and that of artillery of eight or ten pieces of cannon with all their appurtenances. The eldeſt brigade takes the right of the firſt line, the ſecond of the ſecond line, and the reſt in order; the youngeſt always occupying the centre: the cavalry and artillery obſerve the ſame order. The troops of horſe-guards in England are divided into ſeveral brigades, according to their ſtrength.

BRIGADE-*Major*, in the *Military Art*, an officer choſen from among the moſt ingenious and expert captains. Brigade-majors are to wait, at proper times, to receive the word and orders, which they carry firſt to their brigadier, and afterwards to the adjutants of regiments at the head of the brigade,

gade, where they regulate together the guards, parties, detachments, and convoys, and appoint them the hour and place of rendezvous at the head of the brigade, where the brigade-major takes and marches them to the place of general rendezvous. A major of brigade ought to keep a roll of the colonels, lieutenant-colonels, majors, and adjutants, belonging to the brigade. When a detachment is to be made, the major-general of the day regulates with the brigade-majors, how many men and officers each brigade ſhall furniſh; and they again, with the adjutants of the regiments, how many each battalion is to ſend, which the adjutants divide among the companies. The complements each regiment is to furniſh, are taken by the adjutant at the head of each regiment, at the hour appointed, who delivers them to the brigade-major at the head of the brigade, who again delivers them to the major-general of the day, and he remits them to the officer who is to command the detachment.

BRIGADIER-General, an officer whoſe rank is the next above that of a colonel, appointed to command a corps conſiſting of ſeveral battalions or regiments, called a brigade. Every brigadier marches at the head of his brigade upon duty. The brigadier of foot commands him of horſe in garriſon; and the brigadier of horſe, him of foot in the field. Brigadiers of the horſe-guards command youngeſt captains of horſe, who have generally ſome higher rank in the army.

Sub-Brigadier of a troop of horſe-guards, an aſſiſtant of the brigadier.

BRIGANDINE, in *Heraldry*, a jacket or coat of mail, conſiſting of a number of ſmall plates of iron, ſewed upon quilted linen or leather, covered with the ſame, and worn by troops called brigands.

BRIGANDINI, Brigantini, Brigandinarii, or Brigancii, in *Middle Age Writers*, military thieves, or highwaymen, who infeſted France and the Netherlands. See Brabanciones.

BRIGANTES, in *Ancient Geography* and *Hiſtory*, a people of very ancient origin, who occupied ſeveral parts of Rhœtia, the iſlands of Britain, Spain, &c. According to Stephanus Byzantinus, they were the ſame with the Bregi or Briges; and the Briges were, according to Strabo (Geog. l. xii. p. 550.) the ſame with the Phryges or Phrygians. From a paſſage in Herodotus (l. vii.) it appears, that they retained the name of Briges whilſt they remained in Europe with the Macedonians; but that when they migrated into Aſia, they were diſtinguiſhed by the appellation of Phryges. Some have ſuggeſted, that the name of Brigantes was formed from Gomri or Gombri, the deſcendants of Gomer, one of the moſt ancient progenitors of the people of Europe; by ſubjoining the Celtic *cant*, denoting a hundred, whence is derived *Gombricant*, and expreſſing the termination *bricant*, by the Latin *Brigantes*. Whatever be the etymology of the name, the Briges or Brigantes are placed by Steph. Byz. in the mountains of Thrace and Macedonia; and ſome of them, as Herodotus informs us, paſſed into Phrygia, whilſt others proceeded as far as Rhœtia towards the weſt, where Strabo recognizes them. Here we find the lake "Brigantius," and a town of the Brigantes. From hence they advanced towards the north, following the courſe of the river Rhine, which ſignifies, in Celtic, the conductor, as far as the ocean, and croſſed it to the Britiſh iſlands. It is not improbable, that others of the Brigantes migrated into Gaul, and there founded the city of the Brigantes, now called Briançon, and that other colonies of the ſame nation paſſed into Spain, where we diſcover a reference to their name in ſeveral places. Thoſe Brigantes who traverſed the ocean into the iſle of Albion became the moſt numerous and powerful people of the ancient Britons. Their territories reached from ſea to ſea, quite acroſs the iſland, and comprehended that large tract of country, which is now divided into Yorkſhire and the county of Durham on the eaſt coaſt, and Lancaſhire, Weſtmoreland, and Cumberland on the weſt. Theſe Brigantes are ſuppoſed to have been deſcended, as we have already intimated, from the ancient Phrygians, who were the firſt inhabitants of Europe, and to have come over into this iſland from the coaſt of Gaul, before the Belgæ arrived in that country. They were ſettled, without doubt, in this iſland in times of very remote antiquity, and eſteemed themſelves the Aborigines, or firſt inhabitants of it. The Brigantes were not in the leaſt affected by the incurſions of the Romans under Julius Cæſar; but Seneca (in Ludo) inſinuates, more probably, with poetical compliment than truth, that they were ſubdued by the emperor Claudius:

" ——— Ille Britannos
Ultro noti littora ponti, et cœruleos
Scuta Brigantes, dare Romulæis colla catenis
Juſſit."

It appears, however, that they ſoon contracted ſome alliance with, or made ſome kind of ſubmiſſion to, the Romans. For, when Oſtorius, the Roman governor, had defeated the Iceni, and was marching his army into the weſt againſt the Cangi, he was called away by the news of an inſurrection among the Brigantes, which he ſoon quieted. Tacitus Annal. l. xii. c. 32. But it alſo appears (Id. l. xii. c. 36.) that theſe people were, ſome time after this, governed by their own princes, particularly by the famous Cartiſmandua, who was a faithful and uſeful ally to the Romans. They afterwards commenced hoſtilities againſt the Romans in the beginning of Veſpaſian's reign, A. D. 70, and were partly ſubdued by Petilius Cerialis, then governor of Britain, and ſoon after totally reduced by the renowned Agricola. Tac. Vit. Agr. c. 17. 20. The country of the Brigantes compoſed almoſt the whole of the fourth Roman province in Britain, called "Maxima Cæſarienſis," and was governed by the conſular preſident of that province. During the times of the Romans, this was a frontier province, and was therefore much frequented, and carefully guarded by that people. The towns of the Brigantes were Epiacum, Vinnovium, Caturractonium, Calatum, Iſurium, Rigodunum, Olicana, Eboracum, and Camunlodunum; which ſee reſpectively. Henry's Hiſt. Book i. c. 3 § 1.

The Brigantes of Ireland are ſuppoſed to have lived in that part which is now the county of Waterford, adjoining the river Brigus. It is natural to conclude that theſe were either a colony of the Brigantes of Britain, or ſprung from the ſame race. Even general Vallancy ſeems to admit this; and he has quoted a paſſage from a work of Monſ. Brigante, ſhewing the Brigantes to be Celts of the poſterity of Japhet, and to have received their name from their attention to navigation. That they proceeded immediately from Germany and Rhœtia is rendered probable by Ptolemy's having placed near them the Canuci and Menapii, people found in Germany on the coaſts of the ocean. The Engliſh words, *brig* and *brigantine*, are ſuppoſed to be derived from the ſame ſource.

BRIGANTI, Annibal, in *Biography*, a celebrated Neapolitan phyſician, who flouriſhed the latter part of the 16th century, publiſhed, in 1577, at Naples, two ſmall works in Italian, 4to. the one containing "Regulations proper to be obſerved for preventing the propagation, and diffuſion of the plague;" the other, "On the prevention and cure of the meaſles:" alſo, "Epiſtolæ medicinales," 8vo. 1582; much commended by Toppius. The author treats largely in them of the cure of lues venerea. Haller Bib. Med. Eloy Dict. Hiſt.

BRIGANTINE, a ſmall, light, flat, open veſſel, which goes both with ſails and oars, and is either for fighting or giving chace.

It has uſually twelve or fifteen benches on a ſide for the rowers, a man and an oar to each bench. Brigantines are principally uſed by the Corſairs, all the hands aboard being ſoldiers, and each having his muſquet ready under his oar.

But the term is generally uſed for a merchant-ſhip with two maſts, though mariners of different nations apply it to a peculiar ſort of veſſel of their own marine. Among Engliſh ſeamen the rigging of a brigantine or brig is little different from the fore and main maſts of a ſhip, the braces of the ſails on the main-maſt leading forward. The after-main-ſhroud muſt be ſerved from the maſt-head to the dead-eye, to prevent its being chafed by the main boom and gaff. The after-back-ſtay is fitted with a tackle, that it may be ſlackened when the main-ſail jibes, or is bowſed forward by the boom-pendent and tackle. Brigs carry no main-yard, but a croſs-jack-yard.

BRIGANTINUS Lacus, in *Ancient Geography*, a lake of Rhœtia, now the lake of Conſtance, which ſee.

BRIGANTIUM, or Brigantia, a town of Rhœtia, ſeated on the preceding lake, now Bregentz; which ſee.—Alſo, a town of Gallia Narbonnenſis, E.N.E. of Salinæ, in the country of the Caturiges, near the paſs into Italy acroſs the Alps, reckoned in the times of the Romans among the cities of the ſecond order, and exhibiting in the inſcriptions, and medals of gold, ſilver, and copper, which have been found in its vicinity, traces of its ancient importance, now Briançon; which ſee.—Alſo, a town of Hiſpania Citerior, ſeated at the bottom of a ſmall gulf, north of Magnus Portus, and near it, now Betancos; which ſee.

BRIGE-Bote, Brigg *bote*, or Brigh *bote*, in *Ancient Law Writers*, ſignifies a being freed from contributing to the reparation of bridges. See Pontage. The word is formed of the Saxon *brig*, *a bridge*, and *bote*, *compenſation*. It is ſometimes alſo written *brugh bote*, or *bruch-bote*.

BRIGEUM, in *Ancient Geography*, a town of Spain, towards the S. W. of Aſturica.

BRIGES. See Brigantes.

BRIGEUIL, in *Geography*, a town of France, in the department of the Vienne, 8 miles E. of Montmorillon.

BRIGGS, Henry, in *Biography*, a celebrated mathematician, was born at Warley Wood, near Halifax, in Yorkſhire, about the year 1556; and admitted a ſcholar of St. John's college, in the univerſity of Cambridge, in 1579; where he took the degree of Bachelor of Arts in 1581, that of Maſter, in 1585, and was choſen fellow of his college in 1588. His favourite ſtudy was the mathematics, in which he excelled, ſo that in 1592 he was appointed examiner and lecturer in that faculty, and ſoon after reader of the phyſic-lectures, founded by Dr. Linacre. Upon the ſettlement of Greſham college, in London, he was choſen the firſt profeſſor of geometry, in 1596; and at this time he conſtructed a table for determining the height of the pole from the magnetical declination; which table was publiſhed in Dr. Gilbert's book, "De Magnete," and by M. Blondeville, in his "Theoriques of the ſeven Planets;" London, 1602, 4to. In 1609 he commenced an acquaintance with Mr. James Uſher, afterwards primate of Ireland, which was maintained by a correſpondence for ſeveral years. In one of his letters, dated March 1615, he informs him, that he was wholly employed about the noble invention of logarithms, lately diſcovered; which he explained in his lectures, propoſing an alteration in the ſcale of baron Napier, from the hyperbolic form to that in which 1 ſhould be the logarithm of the ratio of 10 to 1. This alteration was propoſed to the baron in a letter; and, in 1616, Briggs made a journey to Scotland for the purpoſe of converſing with him on the ſubject; and he repeated his viſit in the following year. The reſult of their conferences, which were conducted with ſingular mutual reſpect, was the adoption of his plan; ſo that upon his return from the ſecond viſit, Briggs publiſhed the "Chilias prima," or firſt thouſand, of his logarithms, in 8vo. In 1619, he was appointed the firſt profeſſor of geometry, at Oxford, in the inſtitution founded by ſir Henry Savile; and reſigning his profeſſorſhip at Greſham college, in 1620, he removed to Oxford, and ſettled at Merton college, where he was ſoon after incorporated maſter of arts in that univerſity, and where he continued till his death. Although his time was much occupied in the duties of his office, and in the proſecution of his labours on logarithms, as well as other important ſubjects, he publiſhed, in 1622, a ſmall tract on the "North-weſt Paſſage to the South Sea," through the continent of Virginia and by Hudſon's bay, occaſioned by his being a member of the company trading to Virginia, and reprinted in vol. iii. of Purchas's Pilgrims. His next performance was the extenſive and elaborate work, entitled "Arithmetica logarithmica," printed at London, in 1624, folio; containing 30 chiliads of logarithms from 1 to 20,000, and from 90,000 to 100,000, calculated to 14 places of figures; beſides the index. To this work he prefixed a large diſſertation on the nature, conſtruction, and uſe of logarithms, and on the method of ſupplying the intermediate numbers from 20,000 to 90,000. He alſo completed a table of the logarithmic ſines and tangents for the whole quadrant, for every hundredth part of a degree, to 14 places of figures, excluſively of the index, with a correſponding table of natural ſines, to 15 places; and of tangents and ſecants for the ſame, to ten places. Theſe tables, in which the intermediate logarithms of the numbers from 20,000 to 90,000 were ſupplied by Mr. Adrian Vlacq, of Targou, in Holland, were publiſhed at Gouda, under his care, in 1628; and a tranſlation of this edition was publiſhed at London, under the title of "Logarithmicall Arithmetike, &c." in 1631, folio. Mr. Briggs had conceived the deſign of illuſtrating at large the uſe of logarithms in the doctrine of ſpherical triangles, and propoſed to complete it in two books: but he lived to write only the firſt; leaving the ſecond to the care of his old friend Mr. Henry Gellibrand, who finiſhed the work, and it was publiſhed at Gouda, in 1633, folio, under the title of "Trigonometria Britannica," ſive, "De Doctrina Triangulorum, libri duo, &c." An Engliſh tranſlation of it was publiſhed in a folio treatiſe by Mr. John Newton, in 1658, under the ſame title. In the execution of both theſe works, Mr. Briggs manifeſted a very ſurpriſing combination of aſſiduous application and inventive genius; and furniſhed ſeveral important diſcoveries in the mathematics, which have been uſually referred to a later period; ſuch as the binomial theorem (which ſee); the differential method and conſtruction of tables by differences; the interpolation by differences; angular ſections, &c.

This eminent mathematician died January the 26th 1630, in Merton college, and was buried in the choir of the chapel, under the honorary monument of ſir Henry Savile, having over his grave only a plain ſtone, with his name inſcribed on it. Dr. Smith, in his "Comment. de Vit. et Stud. H. Briggii," London, 1707, 4to. gives him the character of a man of great probity, eaſy and acceſſible to all, free from arrogance, moroſeneſs, envy, ambition, and avarice, and preferring a ſtudious retirement to all the ſplendid circumſtances of life. The learned Mr. T. Gataker, who attended his lectures at Cambridge, repreſents him as highly eſteemed by all perſons ſkilled in the mathematics, both at home and abroad. Mr. Oughtred calls him "The mirror of the age for excellent ſkill in geometry." Dr. Barrow, his ſucceſſor at Greſham college, in his inaugural oration, celebrates his great abilities, ſkill, and induſtry, in perfecting Napier's remarkable invention of logarithms; which, without his care and pains, might have remained an imperfect and uſeleſs deſign. Beſides the works already enumerated, he wrote many others, the chief of which are the following: 1. "Tables for the Improvement of Navigation," publiſhed in the 2d edition of Wright's "Errors in Navigation detected and corrected," London, 1610, 4to. 2. "Euclidis Elementorum, vi. Libri priores, &c." London, 1620, folio. 3. "Mathematica ab Antiquis minus cognita," communicated by the author to Dr. George Hakewill, and publiſhed in his "Apologie," London, fol.; and alſo in the "Appendix to Ward's Lives, N° 9." 4. "Commentaries on the Geometry of Peter Ramus," re-publiſhed. 5. "Duæ Epiſtolæ ad celeberrimum Virum, Chriſtianum Longomontanum," re-publiſhed, and containing remarks on a treatiſe of Longomontanus about ſquaring the circle, and the other being a defence of arithmetical geometry. 6. "Animadverſiones Geometricæ," 4to. 7. "De eodem Argumento," 4to. Theſe two laſt treatiſes contain a great variety of geometrical propoſitions concerning the properties of many figures, with ſeveral arithmetical computations relating to the circle, angular ſections, &c. 8. "An Engliſh Treatiſe of common Arithmetic," fol. 9. "A Letter to Mr. Clark of Graveſend," dated 1606, and containing a deſcription of Bedwell's ruler, and directions for uſing it. The four laſt were in the poſſeſſion of Mr. W. Jones, father of the late ſir William Jones. Ward's Lives of the Profeſſors of Greſham College, p. 120, &c. Biog. Brit. See Logarithms.

Briggs, William, was born at Norwich, which city his father repreſented in parliament, about the year 1652. At the age of 13 he was ſent to Bennet college, in Cambridge, and placed under the care of Dr., afterwards archbiſhop Tenniſon. Having taken his degrees of bachelor, and maſter of arts, in 1682, he was choſen fellow of the college, he now quitted the univerſity, and went to Montpellier where he applied diligently to the ſtudy of medicine, particularly attending the lectures and demonſtrations of Vienſſens, in anatomy. On his return from the continent he publiſhed, at Cambridge, "Ophthalmographia, ſive Oculi, ejuſque Partium Deſcriptio Anatomica, cui acceſſit nova Viſionis Theoria," 12mo. 1576. The year following he took his degree of doctor in medicine; and fixing in London, he was made fellow of the College of Phyſicians, and of the Royal Society. In 1682, his "Theory of Viſion," was publiſhed in a ſeparate volume by Hooke. The year following he ſent to the Royal Society, a continuation of his Theory of Viſion, with anſwers to ſome objections that had been made to it. This was printed in N° 147 of the Philoſophical Tranſactions. The fame acquired by theſe works brought him into conſiderable practice, and he was ſoon after made phyſician to St. Thomas's hoſpital. On the revolution he was appointed phyſician to king William, and continued in great favour and reputation to the time of his death, which happened at Town Malling, in Kent, September 4th, 1704. Dr. Briggs alſo ſent to the Royal Society, "Exemplum Cæcitatis nocturnæ et Viſus duplicis," which is printed in N° 159 of their Tranſactions. In 1685, he publiſhed a Latin verſion of his Theory of Viſion, with a recommendatory epiſtle from ſir Iſaac Newton, affixed to it: In the preface he promiſes two other works on the ſubject, *viz.* "De Uſu Partium Oculi et de Affectibus ejuſdem." Theſe, however, were never printed. Haller Bib. Anat. Gen. Biog.

BRIGHT, Timothy, a phyſician of eminence of the 16th century, united, as it was not unuſual at that time, the clerical with the medical character. He took his degree of doctor in medicine at Cambridge, and, as we learn from Wood, he was made rector of Methley, in Yorkſhire, in 1591. He appears by his writings to have had a good ſhare of practice, and to have been well verſed in the doctrines of the early Greek writers. The work by which he is principally known is his "Treatiſe of Melancholy," containing the cauſes thereof, and reaſons of the ſtrange effects it worketh in our minds, with the phyſical cure, and ſpiritual conſolation for ſuch as have thereto adjoined an afflicted conſcience," 12mo. 1586, London. He excuſes his writing this treatiſe, contrary to his uſual cuſtom, in the Engliſh language, from its being a practical work, and to be read by perſons out of the pale of phyſic. It was alſo done, he obſerves, by the Greek and Roman writers. He entertained, however, very lofty ideas of the dignity of the medical character. "No one," he ſays, "ſhould touch ſo holy a thing that hath not paſſed the whole diſcipline of liberal ſciences, and waſhed himſelf pure and clean in the waters of wiſdome and underſtanding." The cure of melancholy is to be attempted by bleeding, by purges, and vomits. The reaſons for uſing theſe remedies are aſſigned. He had before, viz. in 1583, publiſhed "De Dyſcraſia Corporis Humani," 8vo. London. He was alſo author of "Hygieine, ſeu de Sanitate tuenda, Medicinæ Pars prima," 8vo. 1588. "Therapeutica, hoc eſt de Sanitate reſtituenda, Medicinæ pars altera," 8vo. 1589. They were reprinted in 1598, in 16to. Haller Bib. Med.

BRIGHTHELMSTON, or popularly Brighton, in *Geography*, is a celebrated bathing place, market, and ſea-port town, on the Suſſex coaſt, England. Its name is ſaid to be derived from Brighthelm, a Saxon biſhop who lived here, or in the vicinity. The town ſtands moſtly on an eminence, which ſlopes gently to the ſouth-eaſt, where is that beautiful verdant walk called the Steyn, which is the general promenade of the bathing viſitors. To the north and north-eaſt, the town is ſheltered by a range of hills, called the South-Downs, which, by breaking the current of cold wind from thoſe points, render the atmoſphere of the town generally mild and temperate. This, combining with a pleaſant beach, and the frequent reſidence of the Prince of Wales, have given much celebrity to Brighton, and occaſioned a conſiderable reſort of company during the ſummer months. This town is mentioned in the Domeſday book, by the name of Briſtlemeſtune; and Mr. Lee, in his Hiſtory of Lewes, &c. infers that it was a place of ſome note in the time of Anglo-Roman dynaſty, from the quantity of Roman coins, &c. that have been found in its vicinity. The landed property of Brighton is divided into three manors, and was at the conqueſt poſſeſſed by William de Warren. About this period a claſs of Flemings ſettled here, and appear to have applied themſelves wholly to fiſhing. The town continued merely a ſmall fiſhing place till a very recent period. It was provided with a market, by charter obtained through the influence of John de Warren, earl of Surrey, in 1313; and in 1773, an act of parliament was obtained for a daily market. The ſituation of the town on the coaſt of the iſland, oppoſite France, has ſubjected it to repeated attacks and much diſtreſs in the time of war with that nation. At the commencement of the wanton and impolitic war proclaimed by Henry VIII. A. D. 1513, againſt Lewis XII. of France, we find that Brighton was plundered by the enemy, who alſo wreaked their vengeance by burning many of its houſes. In conſequence of this event, and the continued terror which prevailed during warfare, the inhabitants reſolved to erect fortifications, as ſome ſecurity againſt future attacks. A block-houſe for ammunition, &c. walls, gates, and other means of ſecurity were therefore provided for the town in 1558, and in 1613. It does not appear that Brighton ſuffered any thing material from foreign foes after the latter period; but the boiſterous ocean now commenced hoſtilities, and, previous to the year 1665, deſtroyed twenty-two copyhold tenements under the cliffs, beſides a good deal of attached land. In the memorable ſtorms of 1703 and 1705, one hundred and thirteen tenements, with the block-houſe, walls, gates, &c. were undermined by the encroaching waves, which have ſince made great depredations on this ſhore. In 1651, Charles II. ſecretly embarked here for the continent, and thus eſcaped the vigilant purſuit of his cruel enemies.

In conſequence of the repeated damages done by the ſea, the inhabitants of Brighton ſubſcribed a large ſum of money, and collected much more by brief, &c. in order to raiſe ſome artificial barrier; and early in the laſt century the cliffs were ſecured by wooden fences, called groins, projecting towards the ſea. This town may attribute its popularity to Dr. Richard Ruſſel, who, having ſettled here, wrote a treatiſe on the importance of ſea-bathing, and ſucceſsfully recommended the practice in ſcrophulous, and glandular complaints. He cauſed a valuable mineral ſpring at Wick, about one mile from the town, to be incloſed in a baſon. A building was afterwards erected over it. The name of Ruſſel muſt be held in grateful remembrance by the inhabitants of all watering places, if they reflect that he was the reſtorer, and great promoter of that highly important reſtorative of health—ſea-bathing. To commemorate his name, the late Rev. Dr. Manningham wrote the following lines,

> "Clara per omne Ævum Ruſſelli fama manebit
> Dum retinet vires unda marina ſuas."
> Admiring ages Ruſſel's name ſhall know
> Till ocean's healing waters ceaſe to flow.

The ſucceſſor of Dr. Ruſſel, (Dr. Rhellan) alſo contributed to bring Brighton into repute, by publiſhing the natural hiſtory of the town in 1760.

Brighton is the ſtation for packets between this part of England and Dieppe, &c. Here are ſeveral charities, and endowed ſchools; alſo a convenient, but ſmall play-houſe, erected in the year 1789. The church, an ancient ſtructure, ſtands on a hill, a little north of the town, and contains ſome curious, and intereſting monuments, and inſcriptions.

In the eaſt ſtreet of Brighton, which forms the weſtern boundary of the Steyn, ſtands the Marine Pavilion, a reſidence of his royal highneſs the prince of Wales. It was finiſhed in the year 1787, and from its eaſtern front commands a fine view of the ſea, &c. Adjoining to this is an excellent family manſion belonging to the duke of Marlborough; many other elegant houſes, handſome rows, ſquares, and ſtreets, now combine to give Brighton a reſpectable appearance, and render it attractive, and comfortable for its inhabitants and occaſional viſitors. It is 54 miles ſouth from London, 8 from Lewes, and contained in 1801, 1427 houſes, and 7339 inhabitants. Ancient and Modern Hiſtory of Lewes and Brighthelmſton, by W. Lee, 8vo. 1795.

BRIGIOSUM, in *Ancient Geography*, Brion, a place of Gaul, ſituate, according to the Theodoſian table, between Avedonacum and Raurana, in the route which leads from Mediolanum to Limonum in Aquitania Secunda.

BRIGITTINS, or Bridgetins, more properly Birgittins, a religious order denominated from their foundreſs, St. Bridget, or Birgit, a Swediſh lady, in the fourteenth century, whom ſome repreſent as a queen; but Fabricius, on better grounds, as a princeſs, the daughter of king Bigerus, legiſlator of Upland: ſhe is famous for her revelations. The Brigittins are ſometimes alſo called the "Order of our Saviour;" it being pretended that Chriſt himſelf dictated the rules and conſtitutions obſerved by them to St. Bridget. In the main, the rule is that of St. Auguſtin; only with certain additions ſuppoſed to have been revealed by Chriſt; whence they alſo denominate it the "Rule of our Saviour." The firſt monaſtery of the Brigittin order was erected by the foundreſs, about the year 1344, in the dioceſe of Lincopen; on the model of which all the reſt were formed. The Brigittins profeſs great mortification, poverty, and ſelf-denial, as well as devotion; and they are not to poſſeſs any thing they can call their own, not ſo much as a halfpenny, nor even to touch money on any account. This order ſpread much through Sweden, Germany, the Netherlands, &c. In England we read but of one monaſtery of Brigittins, and this built by Henry V. in 1413, oppoſite to Richmond, now called Sion-houſe; the ancient inhabitants of which, ſince the diſſolution, are ſettled at Liſbon. The revenues were reckoned at 1945l. per annum.

BRIGNE, in *Ichthyology*, a name given by the French fiſhermen to the *Perca punctata* of Linnæus. Lacepede retains this fiſh in his Natural Hiſtory under the name of *Centropome Loup*.

BRIGNAIS, in *Geography*, a town of France in the department of the Rhone and Loire; 2 leagues S. of Lyons.

BRIGNEUL *l'Aine*, a town of France, in the department of the Charente, and diſtrict of Confolens; 3 leagues S.E. of Confolens.

BRIGNOLA, a town of Italy, in the ſtate of Genoa; 23 miles N.E. of Genoa.

BRIGNOLLES, a town of France, and chief place of a diſtrict, in the department of the Var, ſeated among mountains, in a fertile country, and celebrated for its fruit, and particularly its plums, which take their denomination from it; 6 leagues N. of Toulon. The town contains 5460, and the canton 12,114 inhabitants; the extent of the territory comprehends 160 kiliometres, and 6 communes. N. lat. 43° 24'. E. long. 6° 15'.

BRIGUS, in *Ancient Geography*, a river of Ireland, mentioned by Ptolemy, ſuppoſed to be the main channel of the rivers Suire, Nore, and Barrow, which unite below the towns of Roſs and Waterford. Collect. de Rebus Hibern.

Brigus, *Cape* and *Bay*, lie in the bay of Capetown, on the eaſt coaſt of Newfoundland. The cape is high and rugged, and the bay narrow and deep.

BRIHUEGA, in *Geography*, a town of Spain, in New Caſtile, ſeated on the river Tajuna, the principal commerce of which conſiſts in wool. This town was taken poſſeſſion of in 1710, by general Stanhope, with the Engliſh army, in behalf of the archduke Charles; was beſieged by the duke of Vendome in favour of Philip, king of Spain, and its garriſon were obliged to ſurrender as priſoners of war. It is diſtant 43 miles E.N.E. from Madrid. N. lat. 41° 9'. W. long. 30° 20'.

BRIL, Matthew, in *Biography*, a painter of landſcape and hiſtory, was born at Antwerp, in 1550, and having acquired the rudiments of his art in that city, went to Rome for further improvement; where he acquired ſuch reputation as to be employed by Gregory XIII. in the Vatican, and penſioned till his death in 1584.

Bril, Paul, brother to the preceding, a painter of landſcapes, was born at Antwerp, in 1554, and educated in the art of painting under Daniel Voltelmans. After his removal to Rome, where he ſaw the works of Titian and

Caracci, he wholly abandoned his Flemiſh ſtiff manner, and acquired a more pleaſing ſtyle, and a charming tone of colour. He ſucceeded his brother Matthew, both in his employment and penſion, but far excelled him in the exerciſe of his art. The figures in his landſcapes were generally painted by Andrew Caracci; and by this circumſtance their value was greatly enhanced. His manner of painting is repreſented as true, ſweet, and tender; the touchings of his trees as firm, but delicate; his ſcenery, ſituations, and diſtances are admirable, being commonly taken from nature; and the maſſes of his light and ſhadow as ſtrong, yet very judicious. In the latter part of life, his landſcapes were always both beautiful and exquiſitely finiſhed. They were frequently painted on copper. The genuine works of Brill, eſpecially thoſe of the large ſize, are rare, and afford very high prices in every part of Europe. Within a few years one of his landſcapes ſold in Holland for 160l. and another at an auction in London for more than 120 guineas: and they were thought to be cheap. He etched ſeveral landſcapes in a maſterly, ſpirited ſtyle. This maſter died in 1626. Pilkington and Strutt.

BRILESUS, in *Ancient Geography*, a mountain of Greece in Attica.

BRILL in *Geography*. See Briel.

BRILLAC, a town of France, in the department of the Charente; 5 miles N. of Confolens.

BRILLIANT, in a general ſenſe, ſomething that has a lucid and bright appearance.

Brilliant, in the *Manege*, is applied to a horſe, that is briſk, high-mettled, and ſtately, with an elevated neck, fine movements, and excellent haunches, upon which he riſes, though ever ſo little put forward.

BRILLIANTE, Ital. *Muſic*, ſpirited, animated, with fire.

BRILLIANTS, a name given to diamonds, of the fineſt water. See Diamond.

BRILON, in *Geography*, a town of Germany, in the circle of the Lower Rhine, and capital of the duchy of Weſtphalia; having calamine in its neighbourhood; 60 miles E.N.E. of Cologn.

BRIM, the utmoſt edge of a thing, as of a glaſs, plate, or the like. The brims of veſſels are made to project a little over, to hinder liquors in pouring out, from running down the ſide of the veſſel. The briming, or brimming of veſſels, was contrived by the ancient potters in imitation of the ſupercilium or drip of the cornices of columns; it is done by turning over ſome of the double matter when the work is on the wheel.

Among floriſts the brim of a flower denotes the outward edge of the petala, or that part thereof which turns.

A ſow is ſaid to brim, or go to brim, when ſhe takes the boar.

The hart goes to rut, the roe to tourn, the boar to brim.

BRIMBATUS, in *Natural Hiſtory*, one of the ſynonyms of *Holothuria pentacta*, which ſee.

BRIMENIUM, in *Ancient Geography*. See Bremenium.

BRIMFIELD, in *Geography*, a townſhip of America, in the county of Hampſhire, and ſtate of the Maſſachuſetts, ſituated E. of Conecticut river, and containing 1384 inhabitants; 34 miles S. E. of Northampton, and 70 W. of Boſton.

BRIMOND, in *Ornithology*, one of the ſynonyms of *Anas hiſtrionica*; or Harlequin Duck. See Duck.

BRIMSTONE, a common appellation of ſulphur.

Brimstone, *flower of*. See Flower.

Brimstone marble, a preparation of brimſtone, in imitation of marble.

Brimstone medals, figures, &c. may be caſt in the following manner: melt half a pound of brimſtone over a gentle fire; with this mix half a pound of fine vermillion, and when you have cleared the top, take it off the fire, ſtir it well together, and it will diſſolve like oil; then caſt it into the mould, which muſt firſt be anointed with oil. When cool, the figure may be taken out; and, in caſe it ſhould change to a yellowiſh colour, you need only wipe it over with *aqua fortis*, and it will look like the fineſt coral.

BRIN BLANC, Buffon, in *Ornithology*, *trochilus ſuperciliosus*, the ſupercilious humming-bird.

Brin Bleu, Buff. is *trochilus cyanurus*, the blue-tailed humming-bird.

BRINDISI, or Brundusium, in *Geography*, a celebrated city of Naples, in the Terra d'Otranto, ſituated at the entrance of the Adriatic. It was anciently large and flouriſhing; and may ſtill be conſidered as a great city, if the extent of its walls be conſidered; but the inhabited houſes do not occupy above half the incloſure. The ſtreets are crooked and rough, the buildings are poor and ruinous, and it has no very remarkable church or edifice. It is, however, an archbiſhop's ſee; but the cathedral, dedicated to St. Theodore, though a work of king Roger, is inferior in point of architecture to many churches founded by that monarch. Of ancient Brunduſium, the remains are merely numerous broken pillars, fragments of coarſe Moſaic, the column of the lighthouſe, a large marble baſon receiving the water from brazen heads of deer, ſome inſcriptions, ruins of aqueducts, coins, and other ſmall articles for furniſhing the cabinet of an antiquary. Its caſtle, built by the emperor Frederic II. to protect the northern branch of the harbour, and repaired by Charles V. is large and ſtately. The port is double, and is the fineſt in the Adriatic. The outer part is formed of two promontories, that ſeparate gradually as they advance into the ſea, leaving a narrow channel at the baſe of the angle. The iſland of St. Andrew, on which Alphonſus I. built a fortreſs, lies between the capes, and ſecures the whole road from the fury of the waves. In this triangular ſpace, large ſhips may ride at anchor. At the bottom of the bay the hills recede in a cemi-circular ſhape, and thus leave room for the inner haven, which encircles the city in the figure of a ſtag's head and horns, and is ſuppoſed to have given riſe to the name of Brunduſium; which, in the old Meſſapian language, ſignified the head of a deer. This interior port is peculiarly beautiful, and admirably adapted to every purpoſe of trade and navigation. It is very deep, extending in length 2½ miles, and in its greateſt breadth 1200 feet, and is ſheltered on every ſide by the hills and town. In ancient times, the communication between the two havens was marked by lights placed upon columns of the Corinthian order; but of theſe only one remains entire upon its pedeſtal. It is of the green and white marble, called "Cipollino;" and its capital is adorned with figures of Syrens and Tritons, intermingled with the Acanthus leaf, and upon it is a circular vaſe, which formerly held the fire. Near it is another pedeſtal of ſimilar dimenſions, with one piece of the ſhaft lying upon it, but the reſt of the column was ſold to the people of Lecce, after the earthquake of 1456, which overturned it, and deſtroyed great part of the city. The interval between theſe pillars correſponded to the entrance of the harbour; which is very favourably ſituated for trade. Here goodneſs of ſoil, depth of water, ſafety of anchorage, and a centrical poſition, are all united; and yet it has neither commerce, huſbandry, nor populouſneſs. From the obſtructions in the channel which communicate with the two havens ariſe the various evils that deſolate this diſaſtrous town. Julius Cæſar began its ruin by his attempt to block up Pompey's fleet, by driving piles into the neck of land between the two ridges of hills, and throwing in earth, trees, and ruins of houſes: however, Pompey ſailed out and eſcaped to Greece. In the 15th century, the prince of Taranto ſunk ſome ſhips in the middle of the harbour, to prevent the royaliſts from entering the port; and theſe occaſioned an accumulation of ſand and ſea-weeds, which choaked up the mouth and rendered it impaſſable. In 1752, the evil was increaſed; and from that period the port became a fœtid, green lake, full of infection and noxious inſects; ſo that no fiſh but eels could live in it, nor any boat ply except canoes made of a ſingle tree. The low grounds at each end were overflowed with marſhes, which produced annually a grievous peſtilence, that deſtroyed or drove away the largeſt portion of the inhabitants. From 18,000 they were reduced in 1766 to 5000 livid wretches, tormented with agues and malignant fevers: and in 1775 above 1500 perſons died during the autumn. Whereas 30 years before the air of Brindiſi was eſteemed ſo wholeſome and balſamic, that the convents of Naples were accuſtomed to ſend their conſumptive friars to this city for the recovery of their health. It was at length determined to make ſome efforts for opening the port afreſh, and plans were drawn up for that purpoſe. By means of machines, and of the labour of galley ſlaves, the channel has been partly cleared, ſo as to have two fathom of water, and to admit large boats and a free paſſage to the ſea; and thus the water of the inner port is ſet in motion, and once more rendered wholeſome. The plan, however, was found, in 1789, to fail of complete ſucceſs, and the canal was again in a great meaſure choaked up, ſo that the peſtilential air prevailed as much as ever. But attempts have been renewed for clearing it again, and opening a paſſage to the waters, and draining the adjacent marſhes; and the inhabitants of Brindiſi had a return of health, and are happy in the proſpect of returning commerce and opulence. In cleaning the channel, the workmen have found ſome medals and ſeals; and they have drawn up many of the piles that were driven in by Cæſar, which are ſmall oaks ſtripped of their bark, and are found as freſh as if they had been felled only a month, though buried above 18 centuries ſeven feet under the ſand.

The ſoil about the town is light and good, and produces excellent cotton, with which the Brindiſians manufacture gloves and ſtockings.

It is not eaſy to aſcertain who founded Brunduſium, and who were its firſt inhabitants. Strabo ſays that it was originally occupied by the Cretans, who landed here from Gnoſſus with Theſeus. Others ſay that it was founded by the Japyges. The Romans took early poſſeſſion of a harbour ſo convenient for their enterprizes againſt the nations dwelling beyond the Adriatic. They ſent a colony hither, A. U. C. 509. Pompey ſought an aſylum in this city, and from hence fled to Greece. Here Octavianus firſt aſſumed the name of Cæſar, and he concluded one of his ſhort-lived treaties of peace with Antony. Brunduſium was celebrated as the birth-place of the tragic poet Pacuvius, and became remarkable for the death of Virgil. The barbarians, who ravaged every corner of Italy, did not ſpare ſo rich a town; and in 836, the Saracens gave a finiſhing blow to its fortunes. The Greek emperors were deſirous of reſtoring it to its ancient ſtrength and ſplendour, if the Normans had allowed them opportunity; but after obſtinate ſtruggles, and varieties of ſucceſs and defeat, they were finally expelled Brindiſi by William I. The cruſades, which drained other kingdoms of their wealth and ſubjects, contributed to enrich and eſtabliſh this city, as it was one of the ports where pilgrims and warriors took ſhipping. It was alſo benefited by the reſidence of the emperor Frederick, whoſe frequent armaments for the holy land required his preſence at this place of rendezvous. At length the loſs of Jeruſalem, the fall of the Grecian empire, and the ruin of the Levant trade, after the Turks had conquered the eaſt, reduced Brindiſi to a ſtate of inactivity and deſolation, from which it has never been able to emerge. N. lat. 40° 52'. E. long, 18° 5'. Swinburne's Travels into the Two Sicilies, vol. ii.

BRINDLEY, James, in *Biography*, a perſon of extraordinary genius for mechanical inventions, and diſtinguiſhed by his ſkill in planning and conducting inland navigation, was born at Tunſted, in the pariſh of Wormhill, and county of Derby, in the year 1716. His parents poſſeſſed a ſmall freehold, the income of which his father diſſipated by field diverſions, and by aſſociating with perſons above his rank; and thus the education of the ſon was wholly neglected. Urged by the neceſſities of his family, he contributed to its ſupport till he was nearly 17 years of age, by that kind of labour which, in country places, is aſſigned to the children of the poor; but at this age he bound himſelf apprentice to a wheelwright, whoſe name was Bennet, near Macclesfield in Cheſhire, and ſoon became expert in his buſineſs, diſcovering at the ſame time a ſingular genius for the extenſion and improvement of the mechanic arts in general. Accordingly, in the early period of his apprenticeſhip, he performed ſeveral parts of the buſineſs without any inſtructions from his maſter, and gave ſo much ſatisfaction to the millers who employed him, that he was always conſulted in preference to his maſter or any other workman; and before the expiration of his ſervitude, when Mr. Bennet, by his age and infirmities, became unable to work, he carried on the buſineſs with reputation, and provided a comfortable ſubſiſtence for the old man and his family. About this time his maſter was employed in conſtructing an engine paper-mill, the firſt of the kind that had been attempted in theſe parts; but as he was likely to fail in the execution of it, Mr. Brindley, without communicating his deſign, ſet out on Saturday evening after the buſineſs of the day was finiſhed, and having inſpected the work, returned home on Monday morning, after a journey of 50 miles, informed his maſter of its defects, and completed the engine to the entire ſatisfaction of the proprietors. Mr. Brindley afterwards engaged in the millwright buſineſs on his own account, and ſoon acquired the reputation of a moſt ingenious mechanic. The fame of his inventions and contrivances was in a little while ſpread far beyond his own neighbourhood; and in 1752, he was employed to erect a curious water-engine at Clifton in Lancaſhire, for the purpoſe of draining coal-mines, which had before been performed at an enormous expence. The water for the uſe of this engine was conveyed from the river Irwell by a ſubterraneous channel, nearly 600 yards long, which paſſed through a rock; and the wheel was fixed 30 feet below the ſurface of the ground. In 1755 he conſtructed a new ſilk mill at Congleton in Cheſhire, according to the plan propoſed by the proprietors, after the execution of it by the original undertaker had failed; and in the completion of it he added many new and uſeful improvements. He introduced one contrivance for winding the ſilk upon the bobbins equally, and not in wreaths; and another for ſtopping, in an inſtant, not only the whole of this extenſive ſyſtem, in all its various movements, but any individual part of it at pleaſure. He likewiſe invented machines for cutting the tooth and pinion wheels of the different engines, in a manner that produced a great ſaving of time, labour, and expence. He alſo introduced into the mills, uſed at the potteries in Staffordſhire for grinding flint-ſtones, ſeveral valuable additions, which greatly facilitated the operation. In 1756, he conſtructed a ſteam-engine at Newcaſtle under-Line, upon a new plan, which evinced his genius for invention and contrivance. The boiler was made with brick and ſtone, inſtead of iron plates, and the water was heated by fire-places, ſo conſtructed as to ſave the conſumption of fuel. He alſo introduced cylinders of wood inſtead of thoſe of iron, and he ſubſtituted wood for iron in the chains which worked at the end of the beam. But in theſe and ſimilar contrivances for the improvement of this uſeful engine, he was obſtructed by intereſted engineers; and his attention was diverted from the proſecution of them by the great national object of "Inland Navigation." In planning and executing canals his mechanical genius found ample ſcope for exerciſe, and formed a ſort of diſtinguiſhing æra in the hiſtory of our country. However, envy and prejudice, and an attachment to eſtabliſhed cuſtoms, raiſed a variety of obſtacles to the accompliſhment of his deſigns and undertakings; and if he had not been liberally and powerfully protected by the duke of Bridgewater, at the commencement of the buſineſs, his triumph over the oppoſition with which he encountered muſt have been in a very conſiderable degree obſtructed and retarded. The noble duke poſſeſſed an eſtate at Worſley, about ſeven miles from Mancheſter, rich in mines of coal, from which he derived little or no advantage, on account of the expence which attended the conveyance of this article by land carriage to a ſuitable market for conſumption. Fully apprized of the utility of a canal from Worſley to Mancheſter, he conſulted Mr. Brindley on the ſubject; who, having ſurveyed the country, declared the ſcheme to be practicable. Accordingly, his grace obtained, in the years 1758 and 1759, an act of parliament for this purpoſe; and Mr. Brindley was employed in the conduct and execution of the undertaking, the firſt of the kind ever attempted in England, with navigable ſubterraneous tunnels and elevated aqueducts. At the commencement of the buſineſs it was determined, that the level of the water ſhould be preſerved without the uſual obſtructions of locks. But in accompliſhing this object, many difficulties occurred; and it was ſoon found that it would be neceſſary to carry the canal over rivers and many deep vallies, and that it would not be eaſy to obtain a ſufficient ſupply of water for completing the navigation. However, Mr. Brindley, patronized by the duke, and furniſhed with ample reſources, perſevered, and at length conquered all the embarraſſments, occcaſioned by the nature of the undertaking, and by the paſſions and prejudices of individuals. Having completed the canal as far as Barton, where the river Irwell is navigable for large veſſels, he propoſed to carry it over that river, by an aqueduct 39 feet above the ſurface of the water. This was conſidered as a chimerical and extravagant project; and an eminent engineer, who was conſulted on the occaſion, ridiculed the attempt. "I have often heard," ſays he, "of caſtles in the air, but never before was ſhewn where any of them were to be erected." The duke of Bridgewater was not diſcouraged; but confiding in the judgment of Mr. Brindley, empowered him to proſecute the work; and in about 10 months the aqueduct was completed. This aſtoniſhing work commenced in September, 1760, and the firſt boat ſailed over it the 17th of July, 1761. The canal was then extended to Mancheſter, where Mr. Brindley's ingenuity in diminiſhing labour by mechanical contrivances was exhibited in a machine for landing coals upon the top of a hill. It is no wonder, that an object, ſo curious in itſelf, and of ſuch national importance, ſhould have attracted general attention. See CANAL.

The duke of Bridgewater, having found by experience the utility of theſe inland navigations, extended his views to Liverpool; and obtained, in 1762, an act of parliament for branching his canal to the tide-way in the Merſey. This part is carried over the river Merſey and Bollan, and over many wide and deep vallies. Over the vallies it is conducted without a ſingle lock; and acroſs the valley at Stretford, through which the Merſey runs, a mound of earth, raiſed for preſerving the water, extends nearly a mile. In the conſtruction of this mound Mr. Brindley diſplayed his mechanical genius, by rendering the canal itſelf ſubſervient to his deſign, and by bringing the ſoil, neceſſary for his purpoſe, along the canal in boats of a peculiar form, which were conducted into caiſſoons or ciſterns; ſo that on opening the bottoms of the boats, the earth was depoſited where it was wanted, and the valley was thus elevated to a proper level for continuing the canal. Acroſs the Bollan the ground was raiſed by temporary locks, formed of the timber uſed in the conſtruction of the caiſſoons juſt mentioned. In the execution of every part of the navigation, Mr. Brindley diſplayed ſingular ſkill and ingenuity; and in order to facilitate his purpoſe, he produced many valuable machines. His economy and forecaſt, in every part of the work, deſerve to be particularly noticed, and they are peculiarly diſcernible in the ſtops, or flood-gates, that are fixed in the canal, where it is above the level of the land. Theſe ſtops are ſo conſtructed that if any of the banks ſhould give way and occaſion a current, the adjoining gates will riſe merely by that motion, and prevent any other part of the water from eſcaping, beſides that which is near the breach between the two gates.

Encouraged by the ſucceſs of the duke of Bridgewater's undertakings, a ſubſcription was entered into by a number of gentlemen and manufacturers in Staffordſhire, for conſtructing a canal through that country, in purſuance of a ſcheme which had been ſuggeſted ſome years before; and Mr. Brindley was engaged to make a ſurvey from the Trent to the Merſey. Upon his report that a canal for connecting theſe rivers was practicable, application was made to parliament, in 1765, for an act to this purpoſe, which was obtained in the ſame year. Accordingly, in 1766, this canal, "The Grand Trunk Navigation," was begun; and it was conducted, with great ſpirit and ſucceſs, under the direction of Mr. Brindley, as long as he lived. For a further account of this canal, ſee CANAL.

The next object which engaged the attention of Mr. Brindley was the conſtruction of a canal from the Grand Trunk, near Haywood in Staffordſhire, to the river Severn near Bewdley, by means of which the port of Briſtol was connected with the ports of Liverpool and Hull. This canal, about 46 miles in length, was completed in 1772. His next undertaking was the ſurvey and execution of a canal from Birmingham, which ſhould unite with the Staffordſhire and Worceſterſhire canal near Wolverhampton. This navigation, which is 26 miles in length, was finiſhed in about three years. Our engineer adviſed the proprietors, in order to avoid the inconvenience of locks, and for the more effectual ſupply of the canal with water, to have a tunnel at Smethwick; but his advice was diſregarded; and the managers have ſince been under a neceſſity of erecting two ſteam-engines. The canal from Droitwich to the river Severn, for the conveyance of ſalt and coals, was executed by Mr. Brindley; and he alſo planned the Coventry navigation, which was for ſome time under his direction; but a diſpute ariſing about the mode of executing it, he reſigned his office. Some ſhort time before his death, he began the Oxfordſhire canal, which, uniting with the Coventry canal, ſerves as a continuation of the Grand Trunk navigation to Oxford, and thence by the Thames to London. The laſt undertaking, in which Mr. Brindley engaged, was the canal from Cheſterfield to the river Trent at Stockwith. He ſurveyed and planned the whole, and executed ſome miles of the navigation, which was finiſhed by his brother-in-law, Mr. Henſhall, in 1777. Such was the eſtabliſhed reputation of Mr. Brindley, that he was conſulted on a variety of occaſions; and, indeed, few works of this kind were undertaken without his advice.

He was employed by the city of London, to ſurvey a courſe for a canal from Sunning, near Reading in Berkſhire, to Monkey iſland, near Richmond; but, on account of the oppoſition of the land-owners, this plan was defeated. He had alſo, for ſome time, the direction of the Calder navigation; but, on account of a difference among the commiſſioners, he declined any further concern in it. In 1766, he laid out a canal from the river Calder, at Cooper's bridge, to Huddersfield in Yorkſhire, which has ſince been executed. In 1768, he reviſed the plan for the inland navigation from Leeds to Liverpool; but, though he was appointed engineer for conducting the works, his other engagements obliged him to decline this employment. In the ſame year, he planned a canal from Stockton, by Darlington, to Winſton, in the biſhopric of Durham. Three plans of the like kind were formed by him in 1769; one from Leeds to Selby; another from the Briſtol channel, near Uphill in Somerſetſhire, to Glaſtonbury, Taunton, Wellington, Tiverton, and Exeter; and a third from Langport, in the county of Somerſet, by way of Ilminſter, Chard, and Axminſter, to the ſouth channel at Axmouth, in the county of Devon. In 1770, he ſurveyed the country, for a canal from Andover, by way of Stockbridge and Rumſey, to Redbridge near Southampton; and, in 1771, from Saliſbury, by Fordingbridge and Ringwood, to Chriſtchurch. In 1772 he performed the ſame office, for a ſimilar navigation from Preſton to Lancaſter, and from thence to Kendal in Weſtmoreland. He alſo planned a canal for joining that of the duke of Bridgewater at Runcorn, near Liverpool, in the execution of which ſcheme he propoſed to have conſtructed an aqueduct over the river Merſey, at a place where the tide flows to the height of 14 feet. He alſo ſurveyed the county of Cheſter, with a view to a canal from the Grand Trunk to the city of Cheſter. He reviſed the plan for joining the Forth and the Clyde, and propoſed ſome conſiderable improvements, which were afterwards adopted by the managers. A canal was alſo laid out by him for uniting that of Cheſterfield, by the way of Derby, with the Grank Trunk at Swarkſtone. He was alſo conſulted in the various plans for the draining of the low lands in different parts of Lincolnſhire, and the iſle of Ely. He gave the corporation of Liverpool a plan for clearing their docks of mud, which has been practiſed with ſucceſs; and he propoſed a method, which has alſo ſucceeded, of building walls againſt the ſea without mortar. The laſt of his inventions was an improved machine for drawing water out of mines, by a loſing and gaining bucket, which he afterwards employed with advantage in raiſing coals.

When difficulties occurred in the execution of any of his works, Mr. Brindley had no recourſe to books, or to the labours of other perſons; but as all his reſources were thoſe of his own inventive mind, he generally retired to bed, and lay there one, two, or three days, till he had deviſed the expedients which he needed for the accompliſhment of his objects. He then got up, and executed his deſign without any drawing or model, which he never uſed, except for the ſatisfaction of his employers. His memory was ſo tenacious, that he could remember and execute all the parts of the moſt complex machine, provided he had time, in his previous ſurvey, to ſettle, in his mind, the ſeveral departments, and their relations to each other. In his calculations of the powers of any machine, he performed the requiſite operation by a mental proceſs, in a manner which none knew but himſelf, and which, perhaps, he was not able to communicate to others; and after certain intervals of conſideration, he noted down the reſult in figures; and then proceeded to operate upon that reſult, until at length the complete ſolution was obtained, which was generally right.

Some have ſaid that Mr. Brindley had been ſo much neglected in early life, as never to have learned to read and write; and it has alſo been affirmed, that his aſpect was that of an idiot, and his language mean, obſcure, and almoſt unintelligible. But neither of theſe facts is well founded. Although he read little, and wrote leſs, he had frequent occaſion for correſpondence with his friends and employers. His countenance was ſenſible and animated; but as he was unoſtentatious in his outward appearance, his dreſs was always plain. His converſation, on occaſions of importance, and among his intimate friends, was inſtructive and intereſting; and enlivened by the ſingular genius, and the benevolent and patriotic ſpirit, for which he was diſtinguiſhed, and which gave energy to his purſuits. His want of literature, indeed, compelled him to cultivate, in an extraordinary degree, the art of memory; and in order to facilitate the revival, in his mind, of thoſe viſible objects and their properties, to which his attention was chiefly directed, he ſecluded himſelf from the external impreſſions of other objects in the ſolitude of his bed. Dr. Wallis, who was eminently diſtinguiſhed by the tenaciouſneſs of his memory, ſo that he could extract the cube root of any number to 100 places of figures in his mind, availed himſelf, for this purpoſe, of a ſimilar ſecluſion. Mr. Brindley's inceſſant attention to important and intereſting objects, precluded him from participating in any of the ordinary amuſements of life, and indeed, prevented his deriving from them any pleaſure. Accordingly, though he was once prevailed upon by his friends in London to ſee a play, he found his ideas ſo much diſturbed, and his mind rendered ſo unfit for buſineſs, as to induce him to declare, that he would not on any account go to another. It is not improbable, however, that by indulging an occaſional relaxation, remitting his application, and varying his purſuits, his life might have been prolonged, and his uſefulneſs extended. Whereas the multiplicity of his engagements, and the conſtant attention which he beſtowed on them, brought on a hectic fever, which continued, with little or no intermiſſion, for ſome years, and at laſt terminated his uſeful and honourable career on the 27th of September, 1772, in the 56th year of his age, at Turnhurſt, in Staffordſhire. He was buried at New Chapel, in the ſame county.

The talents of Mr. Brindley were of a ſingular kind; and under the patronage of his grace the duke of Bridgewater, they had an opportunity of being unfolded and exerciſed to their full extent, in the execution of works new to this country, and which will perpetuate his fame to future generations. The brief recital which has been given of his ſtupendous undertakings, will enable the reader to form ſome judgment of this extraordinary perſon. Such was the enthuſiaſm with which he engaged in all ſchemes of inland navigation, that he ſeemed (if we may credit report) to regard all rivers with contempt, when compared with canals. To this purpoſe, it is ſaid, that in an examination before the houſe of commons, when he was aſked by a member, for what purpoſe he apprehended rivers were created? he replied, after ſome deliberation, "to feed navigable canals." As to his private character, thoſe who knew him well, and had an opportunity of converſing familiarly with him, reſpected him.

him in a high degree, " for the uniform and unſhaken integrity of his conduct; for his ſteady attachment to the intereſt of the community; for the vaſt compaſs of his underſtanding, which ſeemed to have a natural affinity with all grand objects; and likewiſe, for many noble and beneficial deſigns, conſtantly generating in his mind, and which the multiplicity of his engagements, and the ſhortneſs of his life, prevented him from bringing to maturity." Biog. Brit.

BRINDONES, in *Botany*, a name given to the fruit of the mangouſtan of the Celebes Iſlands, the GARCIANA CELEBICA of Linnæus. In the old French Encyclopedie, it is erroneouſly conjectured to be a ſpecies of LIMONIUM.

BRINE. This term is uſed technically for a ſolution in water of common ſalt, or any ſaline liquid in which this ſalt is predominant. Thus the native ſprings of ſalt water are called *brine*-ſprings; the ſea water is termed *brine*, &c.

Leach, or *letch-brine*, is the *mother water* left in the pans during the manufacture of ſalt, after moſt of the pure ſalt has been obtained by boiling down. It conſiſts of muriat of ſoda mixed with the earthy muriats, and other impurities of natural brine.

For every thing relating to the manufacture of ſalt from brine, ſee MURIAT *of Soda*.

BRINE alſo denotes a pickle pregnant with ſalt, wherein things are ſteeped to keep.

BRINE *pans*, the pits wherein the ſalt water is retained, and ſuffered to ſtand, to bear the action of the ſun, whereby it is converted into ſalt. There are divers ſorts of ſalt-pans, as the water-pan, ſecond-pan, ſun-pan; the water being transferred orderly from one to another.

BRINE-*pit*, in *Salt-making*, the ſalt ſpring from whence the water to be boiled into ſalt is taken. There are of theſe ſprings in many places; that at Namptwich, in Cheſhire, is alone ſufficient, according to the account of the people of the place, to yield ſalt for the whole kingdom; but it is under the government of certain lords and regulators, who, that the market may not be overſtocked, will not ſuffer more than a certain quantity of the ſalt to be made yearly. See PIT.

BRINE *ſalt*. See SALT.

BRINE-*ſprings*. See SALT and SPRING.

BRINEK, or BRINETI, in *Aſtronomy*, the bright ſtar in the conſtellation Lyra; more frequently called *Lucida Lyræ*.

BRINGERS-UP, in a *Battalion*, are the whole laſt rank of men in it, or the hindmoſt man in every *file*.

BRINGING-IN *a horſe*, in the *Manege*, is the keeping down his noſe, when he boars, and toſſes it up to the wind. A horſe is *brought-in* by a ſtrong hard branch.

BRING-TO, in *Seamanſhip*, to check, or retard, the velocity, or rate, of ſailing of a ſhip, by arranging the ſails in ſuch a manner, that they ſhall counteract each other, and thereby prevent her either from advancing a-head, or getting ſtern-way. In this ſituation the ſhip is ſaid to *lie-to*, or to *lie-by*. Bringing-to is generally uſed to detain a ſhip in any particular ſtation, in order to wait the approach of ſome other veſſel that may be advancing towards her; in waiting for a boat from the ſhore; or, until there be ſufficient depth of water to admit the veſſel to ſail into a tide-harbour.

BRING *up*, an expreſſion uſed for coming to an anchor.

BRING *by the lee*, is when by bad ſteerage, or otherwiſe, a ſhip's head moves from the wind, which ſhe brings ſucceſſively aſtern, and then ſo far round upon that which was formerly the lee ſide, that the ſails are laid aback.

BRINJAN, in *Geography*, a town of Hindooſtan, in the country of Boglana; 12 miles N.N.W. of Naſſuk.

BRINJAUN, or BRINJAM, a town in the peninſula of India, in the Travancore country, on the coaſt of Malabar; 25 miles W. of Travancore. N. lat. 8° 19′. E. long. 77° 5′.

BRINING *of Grain*, in *Rural Economy*, the practice of immerſing in ſome ſort of liquor or pickle, with the intention of preventing the ſmut, or other diſeaſes. Steeps, or pickles for this uſe, are prepared in various ways, and with very different ſorts of materials; but chiefly by diſſolving ſaline ſubſtances in water, urine, or ſome other fluid, till they are very ſtrongly impregnated with them. The grain, after having remained in theſe ſteeps a ſufficient length of time, as ſix, eight, or ten hours, or more, according to circumſtances, and the light part that ſwims on the ſurface removed, is taken out and dried by proper draining, and the ſifting of a little lime in a fine powdery ſtate over it. The ſowing ſhould be performed as ſoon as poſſible after this has been done, as the grain is liable to be ſoon injured by its being delayed. How far the uſe of ſteeps or brining grain may be advantageous, or whether ſuch practices have any other utility than that of haſtening the vegetation of the ſeed after it is committed to the earth, has not yet been well aſcertained by experiment. See STEEP.

BRINING *of Hay*, the practice of blending ſalt with hay in the operation of ſtacking, in order to preſerve it more effectually, and render it more palatable to animals. It is chiefly had recourſe to when hay has been much injured by rain in making. The practice is ſaid to prevail in America.

BRINKE, in *Geography*, a town of Germany, in the circle of Weſtphalia, and biſhopric of Oſnabruck; 16 miles S.E. of Oſnabruck.

BRINN. See BRUNN.

BRINON *les Allemands*, a town of France, in the department of the Niévre, and chief place of a canton, in the diſtrict of Clamecy; 10 miles S. of Clamecy. The town contains 314, and the canton 9959 inhabitants; the territory includes 142½ kiliometres, and 26 communes.

BRINON *l'Archévêque*, a town of France, in the department of the Yonne, and chief place of a canton, in the diſtrict of the Ioigny; 4 leagues N. of Auxerre. The town contains 2372, and the canton 12,395 inhabitants; the territory comprehends 257½ kiliometres, and 11 communes.

BRINS, a town of Bohemia, in the circle of Boleſlaw; 3 miles S.S.E. of Gabl.

BRIOCA. See BRIUEGA.

BRIOLLAY, a town of France, in the department of the Maine and Loire, and chief place of a canton, in the diſtrict of Sagre. The place contains 849, and the canton 6143 inhabitants; the territory includes 142½ kiliometres, and 8 communes.

BRION, a town of France, in the department of the Two Sevres, and diſtrict of Thouars; 1½ league from Thouars.—Alſo, a town of France, in the department of the Lozére, and diſtrict of Marvejols; 3 leagues W.S.W. of St. Chely.

BRION *iſland*, one of the Magdalen iſlands, in the gulf of St. Lawrence, 5 or 6 leagues W. from the Bird iſlands. N. lat. 47° 50′. W. long. 60° 47′.

BRIONNE, a town of France, in the department of the Eure, and chief place of a canton, in the diſtrict of Bernay, ſeated on the Rille, 3½ leagues N.N.E. of Bernay. N. lat. 49° 51′. E. long. 0° 51′.

BRIONNI, a ſmall iſland in the gulf of Venice, near the coaſt of Iſtria. N. lat. 45° 10′. E. long. 13° 51′.

BRIONY, in *Botany*. See BRYONIA.

BRIORD, in *Geography*, a town of France, in the department of the Ain; 10 miles S. of Belley.

BRIOS-Tombos, a town of France, in the department of the Oiſe; 10 miles N. of Beauvais.

BRIOUDE, a town of France, and principal place of a diſtrict in the department of the Upper Loire, ſeated on the river Allier, over which is a bridge of ſtone, which is regarded as a Roman work. The town contains 5386, and the diſtrict 13,897 inhabitants: the territory comprehends 265 kiliometres, and 19 communes. This is called "Old Brioude," by way of diſtinction from "Brioude Gliſe," which lies alſo near the river Allier, in which is a collegiate church, called St. Julian. N. lat. 45° 14′. E. long. 3° 25′.

BRIOUX, a town of France, in the department of the Two Sevres, and chief place of a canton, in the diſtrict of Melle; 2 leagues S.W. of Melle. The place contains 742, and the canton 9225 inhabitants; the territory includes 315 kiliometres, and 22 communes.

BRIOUZE, a town of France, in the department of the Orne, and chief place of a canton, in the diſtrict of Argentan; 4½ leagues W. of Argentan. The town contains 940, and the canton 9350 inhabitants: the territory includes 162½ kiliometres, and 17 communes.

BRIQUEBEC, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Valognes; 2¼ leagues W. of Valognes, and 3¼ S. of Cherburg. The town contains 4000, and the canton 11,108 inhabitants: the territory comprehends 175 kiliometres, and 11 communes.

BRIQUENAY, a town of France, in the department of the Ardennes, and diſtrict of Vouziers; 4 miles N. of Grandpré.

BRIQUERAS, a town of Piedmont, in the valley of Lucerne; 4 leagues S. of Pignerol. N. lat. 44° 41′. E. long. 7° 24′.

BRISACH, or Breysach, *Old*, a town of Germany, formerly the capital of Briſgaw, ſeated on the Rhine, and partly upon an eminence, which commands the adjacent champaign country. The bridge of boats over the Rhine at this place was demoliſhed ſome years ago, and the paſſage altered to a ferry. It was formerly an imperial city, but mortgaged, in 1331, by the emperor Lewis of Bavaria, to Otto duke of Auſtria, and the mortgage was ratified by Charles V. in 1348. This place had formerly a fortreſs, which was taken by the French in 1688, but reſtored in 1697, and again taken in 1703, but ſurrendered in 1715. The fortifications were razed in 1741, by order of Maria Thereſa, queen of Hungary and Bohemia, and the town became an open place. N. lat. 48° 51′. E. long. 7° 49′. See Brisgaw.

Brisach, *New*, a town of France, in the department of the Upper Rhine, and chief place of a canton, in the diſtrict of Colmar, ſituate about a mile from the weſt ſide of the Rhine, and oppoſite to the old town. It was built by Lewis XIV., and fortified by M. Vauban; it ſtands entirely upon the plain, and its ſtreets are ſo regular that in the great market all the gates of the town are to be ſeen. The town contains 1682, and the canton 7925 inhabitants: the territory comprehends 170 kiliometres, and 16 communes. The road from this place to Baſle, 9 leagues N. diſtant from it, is very pleaſant, and commands a proſpect on the left hand beyond the Rhine into the margraviate of Baden. N. lat. 48° 5′. E. long. 7° 46′.

BRISAGO, a town of the Milaneſe, ſeated on the borders of the Italian bailliages, and near the weſt bank of the Lago Maggiore, or lake of Locarno, and 5 miles S. of Locarno. N. lat. 45° 55′. E long. 8° 33′.

BRISAU, or Brzezowa, a town of Moravia, in the circle of Olmutz, 6 miles S. of Zwitau.

BRISBANE, John, in *Biography*, originally of Kelſo, in Scotland, practiſed medicine ſeveral years, towards the end of the laſt century in London, and publiſhed in 1769, "Anatomy of Painting, or a ſhort and eaſy Introduction to Anatomy, conſiſting of tables of Albinus, with linear figures on a ſmaller ſcale, including Albinus's figures of the Uterus," fol. London.—Alſo, "Select Caſes in the practice of Medicine," 8vo. 1772, London. Among theſe, are interſperſed ſome uſeful practical obſervations. Haller. Bibl.

BRISE′, in *French Armory*, ſignifies broken, and implies an ordinary with part of it broken off. The *Engliſh* blazon it with the word couped.

BRISEIS, in *Entomology*, a ſpecies of Papilio, the wings of which are dentated, brown, and gloſſed with ſhining green: on the anterior wings two ocellated ſpots, and a white band: two black ſpots beneath. Inhabits Germany. Linn. Fabr. &c.—This is *Papilio Jantho* of Pallas.

Briseis, in *Fabulous Hiſtory*, the wife of Mynes king of Lyrneſſa, who was taken captive by Achilles, after he had taken the city and killed her huſband. But when Agamemnon robbed him of this object of his ardent affection, ſhe became the accidental cauſe of innumerable diſorders in the Grecian army. Achilles, enraged, retired to his tent; and till the death of Patroclus refuſed to fight againſt the Trojans.

BRISELLO, in *Geography*. See Bersello.

BRISGAW, a diſtrict of Germany, in the circle of Suabia, ſituated on the eaſt ſide of the Rhine, by which it is ſeparated from France; a portion of it was formerly poſſeſſed by the marquis of Baden, and the principal part belonged to the houſe of Auſtria; but by the 18th article of the treaty of Campo Formio in 1797, confirmed by the 4th article of the treaty of Luneville, in 1801, his majeſty the emperor, king of Hungary and Bohemia, bound himſelf to cede to the duke of Modena, as an indemnification for the territory which that prince and his heirs poſſeſſed in Italy, the Briſgaw; which he is to poſſeſs upon the ſame conditions as thoſe, in virtue of which he poſſeſſed the Modeneſe.

BRISIACUS, *Mons*, in *Ancient Geography*, a town on the right or eaſt ſide of the Rhine, now Old Briſach.

BRISICH, or Breysich, in *Geography*, a town of Germany, in the circle of Weſtphalia, and duchy of Juliers; 16 miles N.N.W. of Coblentz.

BRISIGUELA, a town of Italy, in the province of Romagna, belonging to the ſtate of the church; 6 miles from Fayenza.

BRISITINO, a town of Naples, in the province of Capitanata; 11 miles S.S.W. of Manfredona.

BRISK, a town of Germany, in the circle of Upper Saxony, and Uckermark of Brandenburg; 8 miles S.S.W. of Beeſkow.

BRISKET, in the *Manege*, that part of a horſe extended from the two ſhoulders to the bottom of the cheſt.

BRISKOW, in *Geography*, a town of Germany, in the circle of Upper Saxony, and Middle Mark of Brandenburg; 4 miles S. of Frankfort on the Oder.

BRISSAC, a town of France, in the department of the Maine and Loire, and diſtrict of Angers; 2¾ leagues S.S.E. of Angers.

BRISSEAU, Peter, in *Biography*, after receiving his degree of doctor in medicine, at Montpellier, went to Paris, where he acquired conſiderable reputation by his practice. In 1677, he was admitted of the college of phyſicians to Tournay. He was ſoon after appointed by Lewis XIV. phyſician to the military hoſpitals at Tournay and Mons; and on Tournay's being taken by the allies in 1709, he removed to Doway, where he died September 10th, 1717, aged 86 years. Briſſeau was author of ſeveral works; but what acquired him moſt credit, was his " Nouvelles Obſervations ſur la Cataracte," Tournay, 1706, 12mo. continued in 1708, by " Suite des Obſervations ſur la Cataracte." He was the firſt who demonſtrated, that the cataract is a diſeaſe of the cryſtalline lens. Laſnier, and Quarré, who held the ſame opinion, had not diſſected any eyes, affected with the diſeaſe, or publiſhed any thing upon the ſubject; nevertheleſs, the College of Surgeons at Paris refuſed to give Briſſeau the credit of the diſcovery. " Obſervations faites par M. B." 12mo. 1706. Theſe are all on ſurgical ſubjects. He cured a ſoldier of a wound in the ſkull, through which a portion of brain had eſcaped. Two earlier publications by him were " Diſſertations on Bleeding," and on " Sympathetic Motions." Haller. Bib. Med. et Chirurg.

Brisseau, Michael, ſon of Peter, and born at Tournay, was admitted member of the college of phyſicians there in 1696. He thence removed to Doway, where he was made firſt profeſſor in medicine, and phyſician to the military hoſpital. He wrote ſix chirurgical obſervations, which are printed with Palfins' works in ſurgery and anatomy. Haller. Bib. Anat. Eloy Dict. Hiſt.

BRISSOIDES, in *Natural Hiſtory*. See Echinus.

BRISSON, Barnabas, in *Biography*, an eminent French lawyer and man of letters, was the deſcendant of a reſpectable family at Fontenai le-Compté, in Poitou, and entered at the bar of the parliament at Paris. His reputation was ſuch, that Henry III. advanced him to ſeveral honourable offices, and in 1580, to the poſt of preſident *à mortier;* and conceiving very highly of his talents and learning, employed him in various negotiations, and ſent him as his ambaſſador to England. Upon his return he commiſſioned him to make a collection of all his own ordinances, and thoſe of his predeceſſors, which he completed with great expedition. The principal of his other learned works are: " De Verborum, quæ ad Jus pertinent, Significatione," fol.; " De Formulis et Solemnibus Populi Romani Verbis," fol. Paris, 1583, a work of authority and frequently cited; " De Regio Perſarum Principatu," 1580, frequently printed, and laſt at Straſburg, in 1710, with the notes of Sylburg and Lederlin; " De Jure Connubiorum Liber ſingularis," Paris, 8vo. 1564; " Opera Varia," 4to. 1606. The termination of Briſſon's life was diſaſtrous; for having continued at Paris, during its ſiege by Henry IV. in 1589, he was compelled by the league to aſſume the place of firſt preſident of the parliament, inſtead of Achilles de Harlay, then a priſoner in the Baſtille. In conſequence of his official conduct, the faction of ſixteen brought an accuſation againſt him and ſome others, members of the parliament; and he was hanged in November, 1591. Several perſons were afterwards puniſhed for the concern they had in his death. His public principles are variouſly repreſented; ſome extolling him as a good citizen, others repreſenting him as a man of ambition, who fell a victim to his deſire of riſing to conſequence by means of faction. Nouv. Dict. Hiſt.

Brisson, St., in *Geography*, a town of France, in the department of the Loiret, and diſtrict of Gien; 4 miles S. of Gien.

BRISSOT, Peter, in *Biography*, was born at Fontenai-le-Comté, in the year 1478, and made doctor in medicine at Paris, in 1514. He now went to Liſbon, where he was ſoon diſtinguiſhed for his ſuperior learning, and ability in his profeſſion. As he read the Greek fathers in medicine, in their original language, he was very free in his cenſures on the Arabian writers, who had ſo mutilated, and disfigured the Greek text, as to make it extremely difficult to diſcover the authors' opinions, in their tranſlations. This freedom excited the indignation of the followers of the Arabians, which blazed out with great fury, on Briſſot's publiſhing, in 1525, " De Vena ſecanda tum in pleuritide, tum in aliis viſcerum inflammationibus, libellus apologeticus," Paris, 4to. As he maintained, in this work, that blood might be drawn from the ſide affected in pleuriſy, which was contrary to the then prevailing opinion, he was conſidered as an innovator, and treated as a man holding heretical opinions. The work was reprinted in 1533, with ſome additions by the author, and in 1622, by R. Moreau, with other pieces on the ſame ſubject. Haller. Bib. Med.

Brissot, James-Peter, one of the principal agents in the late French revolution, and head of a party diſtinguiſhed by his name, was the ſon of a " traiteur," or maſter of an eating-houſe, and born in 1754 at Chartres, in the Orleannois. The circumſtances of his father enabled him to give his children a good education; and James Peter was deſtined for the bar. But having ſerved five years as a clerk, with a view to the profeſſion of the law, he abandoned the proſecution of it with diſguſt, and determined to devote himſelf to literature and the ſciences. At this time, he formed an acquaintance with ſome Engliſh travellers, learned their language, and peruſed ſome Engliſh books; and to theſe circumſtances he attributes the character and fortune of his future life. Attached, as he profeſſes himſelf to have been, to the language and cuſtoms of England, he changed the appellation of " de Ouarville," which he derived from that of a village where his father poſſeſſed ſome landed property, deſigned for him, into " de Warville," after the Engliſh orthography; and he is thus denominated in his writings. As he had incurred his father's diſpleaſure by relinquiſhing the profeſſion of the law, his reſources failed him; and he was indebted to the bounty of his friends for thoſe ſupplies, which enabled him to proſecute his ſtudies at Paris, which he continued to do for two years. At the cloſe of this period, he entered into an engagement with the proprietor of a popular paper, entitled " Le Courier de l'Europe," and printed at Boulogne, which was committed to his ſuperintendence. When this paper was diſcontinued by the interference of government, Briſſot returned to Paris; and ſoon after, viz. in 1780 and 1781, he aſſumed, in a more direct and regular manner than he had hitherto done, the profeſſion of an author. Revolting, as he ſays, from the inſtant in which he began to reflect, againſt religious and political tyranny, he determined to devote his whole life to the extirpation, both of the one and the other; but as the former had fallen under the reiterated ſtrokes of Rouſſeau, Voltaire, Diderot, and d'Alembert, he had the vanity to think, that the demolition of the latter was an honour reſerved for himſelf. In this work, he ſeems to have engaged with principles and views, reſembling thoſe of his predeceſſors; and that his intention might not be miſunderſtood, he avows his purpoſe to deſtroy that political idol, which, under the name of " Monarchy," practiſed the moſt violent deſpotiſm; and, in order the more effectually to accompliſh his aim, he began with an attack on certain abuſes in government, which needed reformation, and which, with judgment and moderation, might have been corrected, without deſtroying government itſelf. Accordingly, he began with directing the attention of his countrymen to the ſubject of criminal juriſprudence; and, with this view, he publiſhed, in 1780, his " Theory of criminal Laws," in 2 vols. 8vo. which was ſoon followed by two diſcourſes on collateral ſubjects, which gained the prize in 1782 at the academy of Chalons-ſur-Marne. He alſo began a work, which was afterwards completed in 10 vols. entitled " A philoſophical Library of the criminal Laws;" and he publiſhed a volume " Concerning Truth," and " Thoughts on the Means of attaining Truth in all the

Branches of human Knowledge," which he intended, merely as an introduction to a work on a more enlarged and comprehenſive plan. During the progreſs of theſe political and literary labours, to which, with the confidence of youth, he had annexed ideas of ſingular importance and utility, although his notions were crude, and his knowledge ſuperficial, he proſecuted the ſtudy of ſeveral modern languages, and gained an acquaintance with the rudiments of various ſciences.

Briſſot, at the period of his reſidence at Boulogne, had been introduced to mademoiſelle Dupont, who was employed under mad. de Genlis as reader to the daughter of the duke of Orleans, and whoſe mother kept a lodging houſe in that place: and having married this lady, whom mad. Roland extols as a pattern of every domeſtic virtue, he found it neceſſary to exert his literary talents for gaining a ſubſiſtence. But as France did not afford that unreſtricted liberty, which as an author he wiſhed to indulge, he formed a deſign of printing, in Swiſſerland or Germany, a ſeries of works in a kind of periodical publication, under the title of "An univerſal Correſpondence on Points intereſting to the Welfare of Man and of Society," which he propoſed to ſmuggle into France. With this view, he viſited Geneva and Neûchatel, in order to eſtabliſh correſpondences; and he alſo made a journey to London, which was to be the central point of the eſtabliſhment, and the fixed reſidence of the writers. His intentions, however, were divulged by the treachery of ſome of his confidential aſſociates; and the ſcheme, romantic in itſelf, whatever the judicious and candid may think of its ultimate deſign and tendency, totally failed. During his abode in London, he concerted the plan of a periodical work or journal, on the literature, arts, and politics of England, which, being publiſhed in London, was allowed to be reprinted at Paris, and firſt appeared in 1784. The avowed object of this publication, as he himſelf declares, was "the univerſal emancipation of men." In London, he was arreſted for debt; but being liberated by the generoſity of a friend, he returned to Paris, where he was committed to the baſtille, in July 1784, on the charge of being concerned with the marquis Pelleport in a very obnoxious publication. But by the intereſt of the duke of Orleans, obtained by mad. Genlis at the interceſſion of his wife, he was releaſed, on condition of never reſiding in England, and diſcontinuing his political correſpondence. In 1785, he publiſhed two letters, to the emperor Joſeph II. "Concerning the Right of Emigration, and the Right of the People to revolt," which he applied particularly to the caſe of the Walachians: and, in the following year appeared his "Philoſophical Letters on the Hiſtory of England," in 2 vols. and "A critical Examination of the Travels of the Marquis de Chatelleux in North America." With a view of promoting a cloſe, political, and commercial union between France and the United States, he wrote in 1787, with the aſſiſtance of Claviere, a tract, entiled "De la France et des Etats Unis, &c." "On France and the United States; or on the Importance of the American Revolution, to the Kingdom of France, and the reciprocal Advantages which will accrue from a commercial Intercourſe between the two Nations." Of this work, an Engliſh tranſlation was publiſhed, both in England and America. At this time, he was in the ſervice of the duke of Orleans, as ſecretary to his chancery, with a handſome ſalary, and apartments in the palais royal; and, without doubt, employed in aiding his ſchemes of ambition. In this ſituation, he wrote a pamphlet againſt the adminiſtration of the archbiſhop of Sens, entitled "No Bankruptcy, &c." which occaſioned the iſſuing of a lettre de cachet againſt him. But to avoid its effect, he went to Holland, England, and the Low Countries; and at Mechlin, he edited a newſpaper, called "Le Courier Belgique." For the purpoſe of promoting the views of a ſociety at Paris, denominated "Les Amis des Noirs," and eſtabliſhed for the purpoſe of aboliſhing negro ſlavery, he embarked for America in 1788; and, during his reſidence in that country, he ſought for a convenient ſituation, in which a colony of Frenchmen might be organized into a republic, according to his ideas of political liberty. But his return was haſtened in 1789 by the intelligence he received of the progreſs of the French revolution; after his arrival, he publiſhed his "Travels in America;" (Nouveau Voyage dans les Etats Unis, &c. 3 vols. 8vo. Paris, 1791.) and as he found the attention of the public directed to the approaching aſſembly of the States-General, he wrote his "Plan of Conduct for the Deputies of the People." At this time, he had withdrawn from the partiſans of the duke of Orleans; and he took an active part in the plans that were then projected for the organization of the people, with a view to their union and energy in accompliſhing the revolution. To the lodgings of Briſſot, as a perſon who was held in eſtimation at this period, the keys of the baſtille, when it was taken, were conveyed; he alſo became preſident of the Jacobin club; and he diſtinguiſhed himſelf in various ways as a zealous promoter of thoſe revolutionary principles, which, afterwards, gave occaſion to a great number of atrocious exceſſes. After the king's flight to Varennes, Briſſot openly ſupported the republican cauſe; nor does there ſeem to be ſufficient reaſon for ſuppoſing, that he was ſecretly concerned in the plot for raiſing the duke of Orleans to the throne. But as ſome form of monarchy was ſtill the object of the national wiſh, he was obliged to reſtrain his impetuoſity. The popularity acquired by his writings, and conduct, was ſuch, as to induce the Pariſians to return him as one of their members in the "Legiſlative national aſſembly," which ſucceeded the "Conſtituent aſſembly," in October 1791, of which aſſembly he was appointed ſecretary; and he became afterwards a member of the committee of public inſtruction. Although inferior to many others in talents and knowledge, his activity raiſed him to the rank of head or chief, in the party denominated "Girondiſts" or "La Gironde," the name of the department to which ſeveral of its members belonged, and alſo from his own name "Briſſotins." In his career of ambition, he does not ſeem to have been influenced by pecuniary conſiderations; power, more than wealth, being the object of his aim; for, at this time, he and his family lodged in an apartment up four pair of ſtairs, and ſubſiſted on his ſtipend as deputy, and the inconſiderable gains accruing from a newſpaper. As a determined enemy to monarchy, he was unremitting in his efforts to engage the nation in a war, with the avowed purpoſe of involving the king and his miniſters in difficulties which would terminate in their ruin, and this part of his political conduct muſt ever be lamented and execrated by the friends of freedom, and of mankind. In the impeachment of M. Deleſſart, the miniſter for foreign affairs, Briſſot took a principal lead; and alleged againſt him ſeveral articles of accuſation, in conſequence of which, he was apprehended, tried by the high national court at Orleans, and condemned to die, without being firſt heard in his own defence, ſo that he became the firſt victim to that deſperate faction, which afterwards deluged France with blood. His colleagues were ſo completely terrified by this event, that they requeſted leave to reſign, and the miniſtry was at once completely diſſolved. Their ſucceſſors, appointed by the king, under the direction and influence of Briſſot, were Dumourier, Roland, and Clavière. This appointment was followed by a declaration of war, decreed by the national aſſembly, againſt the king of Hungary and Bohemia; and Briſſot, during the exiſtence of this adminiſtration, which terminated ſoon, was conſidered as the moſt powerful perſon in France. About this time, Briſſot began to entertain ſecret jealouſy and ſuſpicion, with regard to the views of La Fayette; and he concurred with other members of the aſſembly, in ſigning an accuſation againſt him, which, however, he was not able to ſubſtantiate. He, and his republican party, were likewiſe induſtrious in their endeavours to throw an odium on the court, by alleging, that a private correſpondence was carried on between the king and queen and the emperor; and they even averred, that an "Auſtrian committee," and a conſpiracy in favour of the enemies of the country, exiſted among the friends of the court. The charge ſeemed to be unſupported by ſufficient evidence; the king publicly contradicted theſe accuſations as calumnies; nevertheleſs, they made no ſmall impreſſion on the minds of the public. To the writings and conduct of Briſſot, the horrid maſſacres at the Tuilleries, on the 10th of Auguſt, 1792, have been principally aſcribed, though he is ſaid to have preſerved the lives of ſeveral of the Swiſs guards on that fatal day. He was employed to draw up the declaration to the neutral powers concerning the ſuſpenſion of the king's authority; but he is ſaid to have regarded with horror the ſanguinary ſpirit that was now predominant among the leaders of the Jacobins. Whilſt, indeed, he was aſcending to the pinnacle of power, he ſeems to have been the ardent advocate of inſurrection and the revolutionary power: but as he found himſelf raiſed to that ſtation, he began to inculcate "order and the conſtitution." To him we may not unjuſtly apply that expreſſion in Tacitus, which he cites againſt the anarchiſts in the national convention: "Rerum potiri volunt; honores, quos quietâ republicâ deſperant perturbatâ, conſequi ſi poſſe arbitrantur." In the ſhocking maſſacre of the priſoners at Paris in September, he had probably no concern. When the "National convention," the idea of which is ſaid to have been ſuggeſted by him, aſſumed the direction of the ſtate, and aſſembled on the 20th of September, 1792, he was returned as member for the department of Eure and Loire, his native country. In this aſſembly, he openly avowed himſelf an advocate for a republican government, in oppoſition both to the Jacobins and Orleaniſts; and was expelled the Jacobin club. On this occaſion, he wrote a vindication of his public conduct, under the title of "An Addreſs to all the Republicans." He appears to have been ſhocked by the proſpect of the fatal iſſue of the king's trial, and to have attempted the preſervation of his life, by deferring his execution, till the conſtitution ſhould be perfected. The war with England, which ſoon followed the death of Louis, is aſcribed to his ardour and credulity; for he was led to imagine, that the conſequence of it would be a civil war in this country; and it is ſaid, that this, as well as the war with Holland, was decreed in the national convention, Feb. 1, 1793, at his motion. This charge, however, he retorts on his accuſers, and ſays, that the anarchiſts, by voting the death of the king, were themſelves the authors of the war. See his "Letter to his conſtituents, on the ſituation of the national convention; on the influence of the anarchiſts, and the evils it has cauſed; and on the neceſſity of annihilating that influence, in order to ſave the republic." Engliſh tranſlation, 8vo. 1794.

Briſſot's influence gradually declined; and his party was at length overpowered by a more violent and ſanguinary faction, denominated the "Mountain," ſo called, from its members uſually ſitting in the convention, on the upper ſeats of the hall, at the head of which was Robeſpierre, of execrable memory. The treachery and deſertion of Dumourier likewiſe contributed to haſten the downfal of this party. To their imbecility or perfidy, the public calamities that threatened the country, were generally aſcribed, and, after the eſtabliſhment of the "Revolutionary tribunal," for the purpoſe of trying crimes committed againſt the ſtate, in March, 1793, a petition was preſented in the following month by the communes of the 48 ſections of Paris, requiring that the chiefs of the Girondiſts, or Briſſotins, denounced in it, ſhould be impeached, and expelled the convention. In May and June decrees of arreſt were iſſued againſt them; and againſt Briſſot among the reſt, who attempted to make his eſcape into Swiſſerland. But he was ſtopped and impriſoned; and in the following October, he and 21 of his aſſociates were brought before the revolutionary tribunal. Briſſot, who was elevated in the midſt of them, maintained a firm and tranquil mind; but, though their accuſers could ſupport their charges by little more than mere ſurmiſes, the whole party was immediately condemned to the ſcaffold. This band of friends, among whom were ſeveral of the moſt virtuous public characters of the time, paſſed together an heroic night, and were next morning led to execution. "There Briſſot," ſays one of his biographers, "after ſeeing the blood of 16 aſſociates ſtream from the ſcaffold, ſubmitted to the ſtroke, with the utmoſt compoſure, and thus expiated the political faults of his life." Theſe conſiſted, perhaps, more in vanity, enthuſiaſm, and precipitation, than in bad intentions; though he cannot be pronounced untainted with the vices, inſeparable from a courſe of ambition. In the relations of private life, his character ſtands without reproach. Life of J. P. Briſſot, ſaid to be written by himſelf. Gen. Biog.

BRISSUS, in *Natural Hiſtory.* See ECHINUS.

BRISTLE, a thick gloſſy kind of hair, wherewith the ſwine kind more eſpecially are covered. The name is ſometimes alſo applied to the quills of porcupines and the muſtaches or whiſkers of cats. Hogs' briſtles are hard, tranſparent, horny ſubſtances, of a priſmatical figure, without any appearance of cavities or pores in them, diſcoverable even by the microſcope. Cats' briſtles have a large ſolid pith in the middle.

Hogs' briſtles conſtitute an important article of exportation in Ruſſia. In 1793, the value of thoſe that were ſhipped off amounted to 742,000 rubles.

BRISTLE-*dice*, a ſort of falſe dice, furniſhed with a piece of hog's briſtle ſtuck in the corners, or other places to hinder their falling on certain ſides, and make them run high or low at pleaſure.

BRISTLE-*moſs*, in *Botany.* See ORTHROTICHUM.

BRISTLED, in *Heraldry*, is a term uſed to denote the hair on the neck and back of a boar, which is uſually of a different colour.

BRISTOL, in *Geography.* This ſecond city of England is ſituated on the ſouthern extremity of Glouceſterſhire, and the northern of Somerſetſhire, and once formed part of both counties. It is ſeated principally on a peninſula, between the rivers Frome and Avon, and lies in 51° 30′ N. lat. 2° 46′ W. long. and is in a bearing weſt 117 miles from London, and 12 from Bath. Various conjectures have been formed relative to its ancient and preſent name. Barret, in his large hiſtory of this city, ſays it received the appellation of Caer-Oder at an early period; but is at a loſs for the origin of Oder. Caer-Brito, its original deſignation, was evidently the generic name it obtained while a protected city of the Britons, under the Roman forces, which were ſtationed at Abone in its immediate vicinity. From this it was changed to Brightſtow, or Brighticſtow, perhaps a tranſlation of Caer-Brito; or it might have taken that name from

Brightick, ſon of Algar, and great-grandſon of Alfred, who was hereditary lord of the place. Its preſent name, Briſtol, appears to have been derived from ſome early Latin writers, changing it, by way of euphony, into Briſtolina, while that of its common pronunciation, Briſtow, is evidently an abridged mode of pronouncing Brightſtow. It is a tradition, from an account which William of Worceſter gives out of a MS. he ſaw in the houſe of the Calenderies, that Briſtow was founded, or rebuilt by Brennus, ſon of Malmutius Dunwallo, who reigned a king of the Britons 380 years antecedent to the Chriſtian æra. In alluſion to which two ſtatues are placed over St. John's gate in this city, emblematic of Brennus and Belinus, who are ſaid to have reigned conjointly after the deceaſe of their father. It is probable that a ſituation ſo eligible muſt have ſtruck the early Britons, who therefore made it a place of aſſociated habitation, previous to the Roman invaſion; however, it is evident that it was a place of importance during that period, for Gildas, as early as A. D. 430, reckons this among the fortified and eminent cities of Britain, under the name of Caer-Brito. Nennius alſo, A. D. 620, mentions it in his enumeration of 28 cities of Britain. On the dereliction of the iſland by the Romans, the Saxons over-ran the country, and took poſſeſſion of Briſtol. Leland ſays, it was by them conſiderably increaſed; and alſo remarks, that St. Jordanus, a diſciple of St. Auguſtine, ſent by pope Gregory to convert the Saxons to Chriſtianity, preached the goſpel at Briſtol, where he died and was buried. Thus we find it a place of note at the end of the 6th century. In Domeſday book, finiſhed by command of the conqueror in 1086, the inhabitants are ſtyled burgeſſes. It was then exceeded in rate by no city, except London, York, and Wincheſter.

Early and preſent extent. The city, as firſt laid out at the conflux of the Frome and Avon, was, except on the northern part, where afterwards the caſtle was erected, inſulated by theſe rivers. The ground roſe each way to the centre, forming a pleaſant hill. It was divided into four tranſverſe ſtreets, and walled round after the courſe of the river for its better defence. At the end of each ſtreet were a fortified gate and a church, and four churches ſurrounded the croſs at the centre of the city. In this ſtate Briſtol could not exceed a mile and a half in circumference. The conflux of people drawn hither by its growing trade ſoon extended it beyond the walls, both on the Glouceſterſhire and Redcliffe ſide of the Avon. Other walls and gates therefore would become neceſſary, and it was thus further defended, before the wooden bridge was built acroſs the Avon. Leland mentions others, which he terms "Eſternavel ſecunda mœnia urbis." Indeed, the large and ſtrong caſtle, with its outworks, when completed, as it joined cloſely to the old town and the buildings on the ſouthern ſide of the river, incloſed alſo by a ſtrong wall, were great additions to the city, and thus made its circumference at leaſt two miles and a half. The acceſſion of the monaſtery of St. Auguſtine, with Gaunt's church and hoſpital to the weſt, the priory of St. James to the north-weſt, and the purchaſe of the caſtle precincts, and laying it out in ſtreets, added very conſiderably to the extent of Briſtol, towards the cloſe of the 17th century. Since that period moſt of the buildings have been erected, both in the city and ſuburbs, which bear a modern appearance, and theſe have been numerous; ſo that it may be truly ſaid, that Briſtol has increaſed, within the laſt forty years, full a fourth. This city once formed part of the Saxon kingdoms of Weſſex and Mercia; and after the whole of England was ſubjected to one monarch, and divided into counties or ſhires, conſtituted part of the counties of Glouceſter and Somerſet, though it was generally conſidered as belonging to the latter county. It was by royal charter, temp. Edw. III. made a county of itſelf; and by other different charters, its boundaries have been extended from time to time, till they now form a line on the Glouceſterſhire ſide, of 4½ miles and 37 perches, and on the Somerſetſhire ſide 2½ miles and 18 perches: the whole city is therefore 7 miles and 55 perches in circumference, and, taking in the ſuburbs from Lawrence-hill in the eaſt to the Hot-wells in the weſt, is more than 3 miles in length. Its breadth, from Stokes Croft turnpike on the north, to Aſhton turnpike on the ſouth, is upwards of 2½ miles. The number of houſes and inhabitants it is difficult to aſcertain. In the late ſurvey by order of government, the return from Briſtol muſt have been very inaccurate, and is ſtated at 10,896 houſes, and 63,645 inhabitants. Anderſon, in 1758, puts the latter down at 100,000, but gives no documents for this enumeration. The houſes may be ſtated on an average eſtimate at 17,000; and if the environs of Temple-ſtreet, Lewin's-mead, College-place, Lime-kiln-lane, &c. be attended to, the rate of 7 to a houſe will not appear too high. This calculation, including thoſe in hoſpitals, alms-houſes, &c. will bring it to about 128,000 perſons, which will not far exceed the truth.

Public Buildings, &c. The buildings in the old part of the city are awkward, and the various alterations that have taken place at different periods have deſtroyed all uniformity. The city ſtands on very uneven ground, and very high walls are raiſed round moſt of the houſes; but the enormous height to which they are often built, appears highly unreaſonable, eſpecially when it is conſidered that an incloſing wall has been known to coſt the value of the houſe itſelf. This faſhion is declining, and Briſtol can now boaſt ſome good and handſome houſes, in the open ſtreets, ſquares, &c. Among the principal buildings are the Cathedral, Redcliffe Church, the Exchange, Infirmary, Public Library, Theatre, Aſſembly-rooms, &c.

The *Cathedral* is only part of the original building, which was the church belonging to the abbey of St. Auguſtine, founded by Robert Fitzharding, younger ſon of the king of Denmark, whoſe monument is ſtill preſerved within it. At the diſſolution of the monaſtery, this noble building, then 350 feet in length, was partly demoliſhed; but when the king determined to erect ſix new biſhoprics, of which Briſtol was one, and was informed there was enough of the fabric left for a cathedral, he put a ſtop to its further demolition; the weſtern part being removed, it was left in that mutilated ſtate in which it remains; the preſent fabric conſiſts of the tranſept, the eaſtern part of the nave, and the choir. At the weſt end is a large ſquare tower, highly ornamented and crowned with battlements and four pinnacles. The preſent church, from eaſt to weſt, is 175 feet; its breadth of tranſept, from north to ſouth, 128 feet; the breadth of nave and aiſles 73 feet, and height of the tower 140 feet. The eſtabliſhment is a dean, ſix prebendaries, four minor canons, ſacriſt, &c.; and ſervice is performed twice every day.

The *Church of St. Mary Redcliffe*, ſays Camden, "is like a cathedral, and on all accounts the firſt pariſh church in England." It was founded in 1292 by Simon de Burton, who was ſix times mayor of Briſtol. According to the mayor's calendar, this church was finiſhed A. D. 1376, and was then celebrated for its architecture all over England. The tower and ſpire were 250 feet high; but in 1445 a terrible ſtorm of thunder and lightning deſtroyed part of the ſpire, and the church was much damaged. The latter was repaired by the munificence of Mr. William Cannyngs, merchant, but the ſpire was never rebuilt. The church ſtands on an eminence, called Redcliffe-hill, and is built in the form of a croſs. The nave riſes above the aiſles, is lighted by a ſeries of lofty windows on each ſide, and is ſupported by flying buttreſſes. The tower is large, and with the remaining

ing part of the ſpire, richly ornamented with carved work, and alſo a variety of niches and ſtatues. Though a lofty and maſſy building, yet, from the peculiar beauty of its maſonry, it has a light and airy appearance both without and within. The roof, nearly 60 feet in height, is arched with ſtone, and ornamented with various devices. The church, including our lady's chapel, is in length 239 feet, and the tranſept, from north to ſouth, 117 feet. The breadth of the nave and aiſles is 59 feet, and at the croſs, nave and aiſles, 114 feet. The height of the aiſles both direct and tranſepts is 25 feet. The height of the nave is 54 feet. St. Mary's chapel has been ſeparated from the church, and is uſed as a grammar-ſchool. A peculiarity obſervable in Redcliffe-church is that the tranſept conſiſts of three diviſions, or aiſles, ſimilar to the body of the church, which has a fine effect when the ſpectator places himſelf in the centre of the building, and looks around him. Beſides the above, there are 15 other pariſh churches in Briſtol, ſome of which are modern ſtructures. Temple church is rather curious, and its tower is out of the perpendicular. There are alſo 22 chapels, or places of worſhip for diſſenters of different denominations, and 5 chapels of the eſtabliſhed religion.

The *Exchange*, finiſhed and opened in 1743, was built by Wood, the architect of Bath, at an expence of 50,000l. It is a handſome building, in the Grecian ſtyle, 110 feet in front, and 148 feet in depth. The principal front is upon a bold ruſticated baſement, the central part of which makes a tetraſtyle of almoſt whole columns, with Corinthian capitals, ſupporting a pediment, in the tympan of which are the arms of England carved in ſtone. The place intended for the merchants is a periſtyle of the Corinthian order, 90 feet by 80, and capable of containing 1440 perſons.

The *General Hoſpital*, for the reception of all caſes, and all perſons of whatever nation, is a handſome edifice, though it has unfortunately never been yet completed.

The *Theatre royal*, King-ſtreet, is a peculiarly neat and convenient ſtructure: indeed, Mr. Garrick pronounced it to be the completeſt in Europe of its dimenſions; and he wrote a prologue and epilogue, which were delivered at the opening, May 30th, 1766.

The *Briſtol City Library*, is ſo called, becauſe part of its collection belongs to the corporation, and the greateſt part to a ſociety of gentlemen. It contains an excellent aſſemblage of ancient and modern books, which, by donations and annual ſubſcriptions, are rapidly increaſing. They are contained in a large freeſtone building erected for the purpoſe, with a convenient houſe for the head librarian, who has alſo an aſſiſtant librarian.

The *Aſſembly-room*, in Prince's-ſtreet, has a beautiful front of free-ſtone, conſiſting of a ruſtic baſement, with a central projection ſupporting four Corinthian columns, coupled and crowned with an open pediment. On the frieze, in relievo, is the following motto: "Curas cithara tollit," Muſic diſpels care.

To theſe may be added, the *Guildhall*, where the aſſiſes, ſeſſions, and other public buſineſs are tranſacted.

Government, civil Officers, &c.—The original government of Briſtol ſeems to have been mixed, military and civil; the chief authority reſiding in the lord conſtable of the caſtle, who deputed another officer for the execution of juſtice, called "prepoſitus villæ," or provoſt of the town. The earlieſt account of this officer occurs in Domeſday-book. In the reign of King John, Briſtol obtained a charter to be governed, like London, by a mayor, &c. From the Annals, it appears, that the civil government, at different periods, has been variouſly modelled, as appears from the following liſt:

1.	Till A. D. 1205.	A prepoſitor under the cuſtos of the caſtle.
2.	1266.	A mayor and two prepoſitors.
3.	1313.	A mayor and two ſeneſchals.
4.	1372.	A mayor and two bailiffs.
5.	1500.	A mayor, ſheriff, and two bailiffs.
6.	To this day,	A mayor and two ſheriffs choſen annually.

The government of the city is now adminiſtered by a mayor, a recorder, twelve aldermen, who are all juſtices of the peace, two ſheriffs, an under-ſheriff, twenty-eight common-council-men, town-clerk, deputy town-clerk, chamberlain, vice-chamberlain, ſteward of the ſheriffs' court, clerk of the arraigns, regiſtrar of the court of conſcience, and alſo a high ſteward. There are other officers pertaining to the corporation, as ſword-bearers, two coroners, water-bailiff, quay-maſters, ſchool-maſters, clerk of the markets, keepers of the priſons, inſpectors of nuiſances, eight ſerjeants at mace, criers of the court, common-crier, exchange-keeper, ſheriffs' officers, club-men, city marſhal, and a band of muſicians in conſtant pay. Great form is obſerved on the 15th of September, in the election of mayor, when the whole body corporate is convened. He is allowed 1000l. for the year of his mayoralty, and the ſheriffs 500l. each for the year of their ſhrievalty. The mayor has the higheſt marks of honour granted to magiſtracy, ſcarlet ermine gowns, ſword, mace, cap of maintenance, &c. He holds a daily ſeſſions in the council-houſe to hear complaints, and accommodate differences, courts of conſcience, and pie-powder, quarterly ſeſſions, and a general jail delivery twice a year: one for the deciſion of civil, and the other of criminal cauſes, wherein the court has the power of life and death. The mayor, aldermen, and common council have the cuſtody of the city ſeal, which is impreſſed with the city arms. Theſe are gules, a caſtle on a hill by the ſea-ſide, and the helm of a ſhip paſſing by, all proper; to which were afterwards added two unicorns as ſupporters. The motto is, "Virtute et Induſtriâ."

From the time Briſtol was made a county of itſelf, it has, by various charters, and grants, been endowed with additional privileges and immunities, all of which were confirmed by a new charter from queen Anne. By another of king Edward IV. 1461, Briſtol was exempted from the authority of the high admiral of England by land and water; and the right of determining differences, belonging to the court of admiralty, was referred to the mayor and corporation. The juriſdiction by water extended up the river only to lower Harrate, till an act of William carried it to Hanham; thence it reaches to Kingroad and down the channel to the Flat-holmes. To this place, Gildas, the ancient Britiſh ſaint and hiſtorian, retired, and here he died. The opulent corporation of Briſtol is poſſeſſed of large eſtates, both in the city and in the country; and they are the patrons of ſeveral church livings, ſo that they not only poſſeſs great influence, but have it in their power to encourage genius, and reward induſtry and merit. The city is divided into twelve wards, each of which has an alderman to preſide over it. The recorder is always one of the aldermen, and, by virtue of his office, the principal. The ſenior alderman, as in London, is called the father of the city. Every ward has one chief conſtable, and twelve others, a night conſtable, and a proper number of watchmen under him.

Briſtol contains three priſons: Newgate, at the end of Wine-ſtreet, which is a gaol for malefactors and debtors; Bridewell, or the city priſon, for the confinement and correction of leſs offenders; and at the end of Glouceſter-ſtreet is a priſon, on Howard's plan, for that part of the ſuburbs which ſtands in the county of Glouceſter, and a Bridewell on the Somerſet ſide. The act for lighting Briſtol with lamps was procured in the reign of William III. This obliged the citizens to hang out their own lamps ; but they are now provided, and the lighting contracted for, by the different pariſhes. Moſt of the ſtreets are well paved on the ſides with flag ſtones ; but the pitching with pebbles in the carriage-way is at preſent extremely uneven and bad, and requires amendment. The poor rates are ſeparately aſſeſſed, and collected on the reſpective pariſhes ; but the poor are taken care of conjointly, and have a houſe called St. Peter's hoſpital. There are fourteen ſtands of hackney coaches in various parts of the city, and one at Dowry ſquare. Each coach is numbered, and marked C. B. There has lately been inſtituted at Briſtol a ſociety for the ſuppreſſion of vice.

Briſtol appears to have been a *borough* at the Conqueſt, and at a very early period, by ancient preſcription, ſent two burgeſſes to parliament. A liſt of its repreſentatives is ſtill extant from the 23d of Edward I. 1295. None can vote for members but ſuch as are free of the city, which freedom is attained by ſervitude, by hereditary right, by marrying a freeman's daughter, or by purchaſe. The number of freemen, at preſent, is about 8000. The city gives title to an earl, and the earldom was formerly in the noble family of Digby, but is now in that of Hervey.

Commerce, *Trade*, *Shipping*, &c.—That a port ſo ſituated as Briſtol ſhould have early participated in the commerce of the country, can be no matter of ſurprize. William of Malmſbury, in 1139, ſays, it was a place much addicted to trade, and was then full of ſhips from Ireland, Norway, and every part of Europe, which brought hither much commerce, and great foreign wealth. From the charter of king John ſomething may be learnt of the commerce of the place in his reign, but more will be furniſhed by that of Edward III. Briſtol was grown ſo opulent in 1327, that the mayor and commonalty lent the king (Richard II.) 500 marks, which is the firſt inſtance (except London) in the Fœdera of a lay community lending money to the crown ; and, in future loans, we find Briſtol follow London. In 1487, a petition was preſented to the king, to empower the citizens of Briſtol to remove all obſtructions in the river Avon that impeded its navigation between Briſtol and Bath ; for before the time of Richard I, the Avon was navigable to Bath. In 1711, an act of parliament was obtained, at an expence of 15,000l. to amend this navigation by placing wears, locks, and other obſtructions. In the roll of the fleet of Edward III. which was at the ſiege of Calais, in 1347, we find the proportion of ſhips and men furniſhed, on that occaſion, by London and Briſtol : the former ſupplied 25 ſhips, and 662 men, and the latter quota was 22 ſhips, and 608 men. William Cannyngs is diſtinguiſhed as a great merchant here in 1449, and he appears to have traded with peculiar privileges, to Pruſſia, the Hanſeatic towns, and Denmark. William of Worceſter ſays, that Cannyngs employed for eight years, in his own ſhipping concerns, 800 men, and he ſpecifies the ſhips and tonnage employed by him. The ſame Cannyngs paid king Edward IV. 4000 marks for his peace, *i. e.* for leave to trade to prohibited places, and to be free of impoſts and duty.

The commercial character of the Briſtol merchants will beſt appear from the letters patent which were granted to John Cabot, a Genoeſe by birth, but a reſident merchant in this city, and to his three ſons, who fitted out veſſels for the purpoſe of diſcovery. In 1527, Robert Thorn obtained leave to go on a voyage of diſcovery, to find out a north-weſt paſſage. In 1583, ſir Humphrey Gilbert performed a voyage for the colonization of America, an account of which is given in Hackluyt. Many other voyages were afterwards made from Briſtol, with the like public-ſpirited views, though not with equal ſucceſs. The merchants had, previous to 1526, traded to St. Lucar in Spain, and thence to the Canaries, ſending out cloth, ſoap, &c. and bringing in return ſugar, drugs, dye-ſtuff, &c.; and De Wit, in his intereſt of Holland, ſays, this city very early engaged in the cod-fiſhery on the coaſt of Newfoundland, and alſo entered into the Weſt-India trade ſoon after the diſcoveries were made. In 1556, the merchants were incorporated into the ſociety called Merchant Venturers : and various grants, immunities, and franchiſes, were annexed to their ſociety. Sebaſtian Cabot was conſtituted the firſt governor. In 1588, four ſhips were fitted out from Briſtol to join the Queen's fleet at Plymouth. With regard to the preſent ſtate of trade, it is very conſiderable to Florida, Carolina, Virginia, New York, Newfoundland, Quebec, Spain, Portugal, Weſt Indies, Denmark, Sweden, Ruſſia, Pruſſia, &c. The ardour for the African trade ſeems much to be abated ; and the Briſtolians now yield the palm of traffic in human beings to the rival port of Liverpool. The merchants in Briſtol trade with a more entire independence on London than any other port in Britain. Whatever exportations they make to any part of the world, they can import the full returns, and find a market, without conſigning their ſhips or cargoes to London. They have buyers at home for their largeſt importations, conſequently the ſhopkeepers of Briſtol, moſt of whom are wholeſale dealers, keep up a great inland trade, having riders and carriers, like the London merchants.

The quay of Briſtol, which was commenced where the bed of the Frome was altered, reaches round from the ſtone bridge on the Frome, to the new handſome bridge over the Avon ; in extent one mile, being one uninterrupted wharf of hewn ſtone, with ſufficient depth of water, at flood tides, for the largeſt ſhips to ride cloſe to the walls, and diſcharge their cargoes. Theſe, as the tide ebbs, ride ſafe at their moorings on a ſoft oozy bed of mud ; but foreign and ſharp keeled ſhips are often ſtrained, and obliged to go into dock after lying here. This occaſioned a new floating-dock to be made, at the expence of 20,000l. It is ſituated near the Hot-well-road ; its gates will admit a 64 gun veſſel, and it will contain 40 ſail of ſhipping. Here alſo are dry and wet docks, for repairing and building ſhips. A ſcheme has long been in contemplation to dam up the water, and keep the veſſels in the harbour conſtantly afloat. In 1803, an act of Parliament was obtained for the purpoſe, a plan was adopted, and this great work is now executing with all poſſible expedition. When completed, the port will be capable of holding 1000 ſail of ſhipping, which convenience muſt, eventually, be of great advantage to the city. The plan is to dam up to a certain height the whole of the preſent bed of the Avon and Frome, and to make a new channel for the river through Redcliffe meads. Three hundred thouſand pounds are already ſubſcribed, and three years given to accompliſh the deſign. From what has already been done, it is conjectured that the expenditure will not exceed the eſtimate ; and if workmen can be obtained, it is preſumed that it will be finiſhed within the aſſigned period. By this plan, ſhips will not only be kept afloat at the quays, but may enter the locks, and go to ſea at neap tides, which will be a wonderful ſaving in time and expence ; and a navigation will be opened up the Avon, as high as the town of Keynſham, in one level : the money to be raiſed by duties and taxes, bearing an intereſt of 4 per cent. and not exceeding 8 per cent. The intereſt is to be raiſed by a tax on houſes in the city, of one ſhilling per pound rent, and a port-duty on all goods and merchandize imported. The tax on houſes is conſidered too partial to be juſt; and the duties on articles imported may probably act as a conſiderable pohibition on foreign veſſels frequenting the port. Time alone, however, muſt diſcover the policy or impolicy of thus raiſing the ſum neceſſary for its accompliſhment. The trade of this port has been ever fluctuating from the time of Henry II. 1137, (when William of Malmſbury makes ſuch honourable mention of it) to the preſent time. Every veſſel of above 60 tons burthen pays a certain wharfage; and from the water-bailiffs' returns it appears, that in 1745, it amounted to 918l. 18s. 7½d; in 1775, to upwards of 2000l. In 1742, the privateers fitted out from Briſtol, according to Barret, exceeded in tonnage, number of guns and men, the whole royal navy of Great Britain. In 1769, there were entered inward at the cuſtom-houſe 427 foreign ſhips, excluſive of Londoners, Coaſters, &c.

In 1787 the entry at the cuſtom houſe was as follows:

	Ships.	Tons.		Ships.	Tons.
Entered inwards — Brit.	416	48,125	Foreign,	69	11,112
Entered outwards—Brit.	382	46,729	Foreign,	66	10,445

The following is a liſt of ſhips and veſſels belonging to this port in 1787:

Foreign Trade.			Coaſters.			Fiſhing Veſſels, &c.		
Ships.	Tons.	Men.	Ships.	Tons.	Men.	Ships.	Tons.	Men.
328	53,491	3971	30	3078	142	7	340	30

After this period the trade increaſed conſiderably; and another computation ſtates, that in 1788, 34 ſhips were employed to Jamaica, 38 to the Leeward iſlands, 37 to Africa, 33 to Newfoundland, 50 to North America, and 200 between Briſtol, Ireland, France, Spain, London, &c. amounting 1392; beſides 103 trows from 50 to 130 tons burthen, employed in the Severn and Wye trade. But the commerce of Briſtol received a ſevere check during the laſt war; and the preſent paralizes the ſpirit of adventure, and the hand of induſtry. Should peace quickly return, and the port be finiſhed, there can be little doubt but this place will become more flouriſhing than ever.

Beſides the foreign trade, Briſtol has many very conſiderable manufactures; and the cheapneſs of fuel, with the ready conveyance to a market, renders this an advantageous place for carrying on various trades. The braſs rollery buſineſs was begun here about 1704. The manufactory of zinc out of calamine ſtone, and the ore of zinc called black Jack, was eſtabliſhed at Briſtol in 1743, for which Mr. Champion optained a patent. Mr. Emerſon at Hanham eſtabliſhed works for making braſs, by expoſing copper to the fumes of calamine, and obtained the fineſt braſs in the world. Vide Watſon's Chemiſtry.

The glaſs houſes of Briſtol are not only numerous, but great quantities of different glaſs articles, and bottles, are annually made here. This trade is increaſing, and it is ſaid that more glaſs is manufactured at Briſtol than at any other place in England. Many large iron founderies are alſo eſtabliſhed here, and a ſteam-engine factory is erected for boring cannon; ſmelting lead, and making of white and red lead, are among the manufactories of this city.

There are 20 ſugar-houſes for the refining and manufacture of ſugars; ſeveral large diſtilleries, which help to ſupply London; and the exportation to foreign parts is very conſiderable. The manufacture of ſoap has long been an article of great trade here; for, in 1523, it ſupplied London with the beſt gray ſpeckled ſoap at 1d. per pound; but it is now 1s. Large quantities are ſtill ſent to London, to moſt parts of the kingdom and to America. This place was, at an early period, noted for its woollen trade. In 1339, we find from Rymer, that the cloth manufacture was removed from Flanders, when Briſtol was appointed a principal ſtaple of wool, and many looms were ſet up for weaving woollen cloths. In Henry VIIIth's reign, it was full of clothiers, weavers, and tuckers; and the magiſtrates gave great encouragement to ſet up the Colcheſter rug manufactory, and many ſums have at times been left to the corporation in truſt for the uſe of young clothiers. This trade is not entirely taken away, as ſome woollen ſtuffs, ſerges, &c. are ſtill made. The manufacture of ſilk fringes, ſail cloth, cottons, morocco-leather, &c. muſt not be omitted. Several potteries alſo now rival thoſe of Staffordſhire.

Military Hiſtory, Caſtle, &c.—It is highly probable, that ſo conſpicuous and important a place early partook of the diſaſters ariſing from the internal commotions of this kingdom, and the evils ariſing from foreign invaſion. But hiſtory is ſilent, the records being loſt till 915, when Stow ſays, a great navy of Danes ſailed up channel and infeſted the weſtern coaſts, landed in divers places, and took great plunder; at which time Briſtol ſuffered from the marauding enemy. King Edward ſon of Alfred, 911, according to the Saxon annals, ſent his army out of Mercia, and met them in Weſſex, where he fought and routed them. The battle was deciſive, and the Danes were then ſubject to the Saxon monarch. Edward went on to build towns and caſtles; and amongſt others he built that of Briſtol, on the Mercian ſide of the river Avon. Camden, therefore, was evidently miſtaken when he aſſerts that Robert Rufus, natural ſon of Henry I. was the founder of the caſtle of Briſtol. Turgot mentions it as the work of Edward in 915, and ſays, it was the "goodlieſt of five built on the banks of Avon:" and in 1088, it is mentioned by Roger Hoveden as "Caſtram fortiſſimam:" and if it were ſo ſtrong 20 years after the conqueſt, there cannot be a doubt, but it previouſly exiſted as a fortreſs for the defence of the city. Another deciſive proof of Camden's error is, that the caſtle was held by Godfrey biſhop of Conſtance, and Robert de Mowbray earl of Northumberland, in a rebellion againſt king William Rufus in 1088; before king Henry I. earl Robert's father, was at man's eſtate. This earl, though not the founder, certainly rebuilt ſome parts, repaired others, and erected a palace and other offices. He alſo built a magnificent tower, ſcarcely equalled at that time in England, and encompaſſed the whole with ſtrong walls. Leland informs us that Robert built part of it, and that "the dungeon tower was made of ſtone brought out of Normandie by the redde earl of Glouceſter." It was not till 1130, that earl Robert began to rebuild and improve the caſtle; which, excluding the out-works, was 450 feet from eaſt to weſt, and 300 feet from north to ſouth. There were in it two great courts, many towers, a church, and a magnificent chapel. The king had alſo a palace within the walls. The principal buildings ſtood upon an area, covering 3½ acres of ground, excluſive of courts, yards, and other accommodations for the officers and the garriſon. Leland informs us, that the great tower ſtood in the north weſt part of the caſtle; and in his time, about 26th of Henry VIII., the whole was in a decayed ſtate, and tending faſt to ruin. In the reign of John, the caſtle was annexed to the crown; and here that monarch cruelly confined the princeſs Eleanor, (called the damſel of Brittany,) who, after forty years' miſerable confinement, died here in 1241. In the barons' wars during the reign of Henry III., prince Edward his ſon ſupplied the caſtle with proviſions, and fined the townſmen 1000l. for not aſſiſting him with ſupplies. The latter beſieged him in the caſtle, and the prince fled to Windſor, where he was ſoon forced to accept terms at the hands of the barons. When the duke of Lancaſter oppoſed Richard II. the inhabitants of Briſtol threw open their gates to the duke's forces, who ſtormed and took the caſtle, in which many of the king's friends had taken refuge. The inhabitants of Briſtol ſided with the earl of Richmond, afterwards Henry VII. at which time Giles lord d'Aubeney held the caſtle. During the reformation, tumults broke out in the weſt; and at Briſtol, the caſtle walls, and gates of the city were repaired and mounted with cannon; but by the prudent conduct of Mr. William Cheſter, the diſcontents were ſoon appeaſed, and a general pardon was procured for the delinquents. In the years 1545 and 1553, a mint was eſtabliſhed in the caſtle; and the church plate, ſeized by the commiſſioners, was here coined. By a petition to king Charles I., 1629, the king granted the caſtle and its appurtenances to the mayor and corporation of Briſtol, and made it a part of that county and city; and in 1631, it was ſold to the mayor and burgeſſes for 959l. In the commencement of the war, between the king and his parliament, the caſtle was repaired and garriſoned by the parliament-army under the government of Col. Nath. Fiennes. This was conſidered a place of the greateſt conſequence, and ſerved to awe all the weſtern counties, having accommodations for a large army. The king, therefore was very deſirous of obtaining poſſeſſion; a plot was formed by Yeamans and Bouchier, to deliver it up to the king's forces; but this being diſcovered, prince Rupert, at the head of a conſiderable army, beſieged it; but fearing the length of a blockade, he determined to take it by ſtorm, which he quickly effected. But the place was thus dearly bought, for the king loſt moſt of his valuable officers, and more than 500 of his beſt troops. It was thought of ſo much conſequence, that a public thankſgiving was ordered for the ſucceſs of his majeſty's arms. The citizens ſubſcribed 1400l. to prevent the plunder of the ſoldiery; and orders were conſequently given for death to be the penalty of plunder. Briſtol was ordered to pay 50,000l. in money, and clothe and equip 1500 of the king's ſoldiers. At the battle of Naſeby, prince Rupert repaired to Briſtol, which he found ſupplied with men, proviſions, and ammunition, ſo that he wrote to the king, aſſuring him he was able to ſuſtain a four months' ſiege. This revived the hopes of the king's party; and it was thought that the prince would make a vigorous and deſperate defence; but, to the ſurpriſe of all, he made but a very feeble and ſhort reſiſtance.

This unexpected and diſaſtrous event damped the royal cauſe, which from that day rapidly declined; and certainly the capitulation of this grand ſtation haſtened the fatal cataſtrophe of the king's ſubmiſſion, and ſubſequent decapitation. After Oliver Cromwell was proclaimed protector, he iſſued orders for the demolition of the caſtle of Briſtol. The diſmantling was begun in 1665, and the whole was razed to the ground. Scarcely any veſtiges are now remaining. Thus this fortreſs, deemed impregnable in former ages, and which has made ſuch a diſtinguiſhed figure on the page of hiſtory, the ſubject of ſo much negotiation, and ſo much contention, was deſtroyed after having weathered the ſtorms of ſeven centuries. The inhabitants, previous to this period, appear to have always been in oppoſition to the reigning princes, but ſubſequently, however, the reverſe appears the caſe. In the duke of Monmouth's rebellion, they eſpouſed the cauſe of king James. During the rebellion, in the reign of George I., and eſpecially in 1745, they were decidedly for the houſe of Hanover; and in the preſent day their exertions in defence of the nation are too well known to need a comment.

Such are the moſt material places, objects and events, connected with the city of Briſtol. We may further ſtate that its buildings cover an area of about 1000 acres of ground, and the ſuburbs above 500 more. With the appendages it contains 600 ſtreets, ſquares, lanes, courts, &c. in which are erected 47 churches and chapels. Here are 5 hotels, 50 inns and taverns, 7 banking houſes, and 4 priſons. It is the chief city, quay, and mart of the weſtern parts of the kingdom, and is claſſed among the principal cities of Europe.

Briſtol is the birth-place of many diſtinguiſhed literary and public characters, the memoirs of whom will be introduced under their reſpective heads. We ſhall therefore only mention the names of the principal: Thomas Chatterton, poet, ſir William Draper, William of Worceſter, William Cannyngs, Edward Colſton, Ann Yearſley, Mary Robertſon. For an account of the Hotwells, Clifton, St. Vincent's rocks, and many places in the vicinity, ſee CLIFTON. Barret's Hiſtory of Briſtol, 4to. 1789.

BRISTOL, a poſt-town of America, in Lincoln county, and diſtrict of Maine, containing 2062 inhabitants; 204 miles N. E. from Boſton.

BRISTOL, a county in the ſouthern part of the ſtate of Maſſachuſetts, ſituate to the eaſt of a part of Rhode iſland; its principal town is Taunton. It has 15 townſhips, 97,360 acres of improved land, 130,767 of that which is unimproved, 33,836 inhabitants, and 17,860 head of cattle.

BRISTOL, a county in the ſtate of Rhode iſland, bordering on Briſtol county in the Maſſachuſetts, north-eaſt; and mount Hope bay, eaſt; and including the townſhips of Briſtol, Warren, and Barrington. The number of inhabitants is 3,801.

BRISTOL, a ſea-port town, and capital of the preceding county, lies on the weſtern ſide of the peninſula, called Briſtol-neck, and on the eaſt ſide of Briſtol bay; including Popaſquaſh-neck, and the whole northern and eaſtern parts of Briſtol-neck to Warren, north; and to mount Hope bay, eaſt. Its diſtance, including the ferry, about half a mile broad, is about 3 miles from Rhode iſland, 13 miles N. from Newport, 24 S. E. from Providence, and 63 from Boſton. Although it has ſuffered greatly by the ravages of war, it is now in a very flouriſhing ſtate, having 1678 inhabitants. Its ſituation is beautiful; its climate healthy; its ſoil rich; and its harbour ſafe and commodious. Onions, in conſiderable quantities, and a variety of proviſions and garden ſtuff, are raiſed here for exportation. N. lat. 41° 45′. W. long. 71° 20′.

BRISTOL, a townſhip in Hartford county, Connecticut; 16 miles W. of the city of Hartford.

BRISTOL, a town in Bucks county, Pennſylvania; 11 miles S. S. E. from New town, and 20 N. E. from Philadelphia; ſeated on Delaware river, oppoſite to Burlington in new Jerſey, and containing about 50 or 60 houſes. It is noted for its mills of various kinds. N. lat. 40° 17′. W. long. 75° 8′.

BRISTOL, a townſhip in Philadelphia county.—Alſo, a ſmall town in Charles county, Maryland.—Alſo, a poſt town in Addiſon county, Vermont, eaſt of Vergennes, having 211 inhabitants.—Alſo, a new town of New York, in Schoharie county, incorporated in 1797.

BRISTOL *Bay* and *River*, lie on the north-weſt coaſt of North America; the north point of the bay is cape Newnham, and the ſouth point is cape Oenemak, on the peninſula of Alaſka. Theſe two points of the bay are in N. lat. 54° 30′ and 58° 42′, and in W. long. 162° 24′ and 163° 30′.

The river, which runs into the bay from the eaſt, is about a mile broad at the entrance, and has plenty of ſalmon. N. lat. 58° 27′. W. long. 158° 5′. The variation on this coaſt is nearly 20° E.

Bristol *Bay*, a bay on the S.W. coaſt of Nova Scotia. N. lat. 44° 42′. W. long. 63°.

Bristol *Cape*, lies in Sandwich iſland, 8 leagues N. from cape Montague, and E. from Freezland peak. S. lat. 59° 2′. W. long. 26° 51′.

Bristol *Channel*, the eſtuary or wide frith of the Severn, is that part of the Atlantic Ocean, which lies between the ſouth coaſt of Wales and the counties of Somerſet, Devon, and Cornwall, in England.

BRISURE, in *Fortification*, a line of four or five fathoms, which is allowed to the curtain and orillon, to make the hollow tower, or to cover the concealed flank.

Brisure, in *Heraldry*, is the mark of diſtinction of houſes or families, when borne as ſuch on a bend, feſſe, &c.

BRIT, in *Geography*, a river in England, which runs into the ſea, 2 miles ſouth of Bridport, in Dorſetſhire.

BRITAIN, Great, the moſt conſiderable iſland of Europe, comprehending the two kingdoms of England and Scotland, with the principality of Wales, and extending from Lizard point, N. lat. 50° nearly to Dungſby-head in N. lat. 58° 30′ nearly. Accordingly, its length is about 590 miles. Its greateſt breadth from the Land's End, in W. long. 5° 45′. to the North Foreland, in E. long. 1° 17′. is about 488 miles. Its form, however, is ſomewhat triangular; as it has three promontories, projecting in different directions, viz. the Land's End, in Cornwall, towards the weſt; the North Foreland, in Kent, towards the eaſt; and Dungſby-head, in Caithneſs, towards the north; and the circuit of its three ſides, allowing for the windings of the coaſt, contains, by a general eſtimate, about 1800 miles. But if Great Britain were conſidered as a perfect triangle, the length of its three ſides would meaſure about 1520 Britiſh miles. It is bounded on the north by the Northern Ocean, on the weſt by the Atlantic and the Iriſh Sea, which ſeparates it from Ireland, on the ſouth by the Britiſh Channel, which divides it from France, and on the eaſt, towards Germany, by the North Sea and German Ocean. Some have ſuppoſed, that Great Britain was, in times of very remote antiquity, united with the continent. The entire ſeparation of Great Britain from the continent muſt have happened, according to the conjectures of Mr. Kirwan, (Iriſh Tranſact. vol. vi. p. 301.) long after the deluge, and that of Ireland from Great Britain at a ſtill later period; for wolves and bears were anciently found in both, and theſe muſt have paſſed from the continent into Britain, and hence into Ireland, as their importation cannot be ſuſpected. The divulſive force that ſeparated Britain from Germany ſeems, according to this writer, to have been directed from north to ſouth, but gradually weakened in its progreſs. Hence that iſland is ſharpened to the northward; but the impreſſion muſt have been conſiderably enfeebled by the oppoſition of the granitic mountains that form the Shetland and Orkney iſles. The broken ſtructure of the calcareous or argillaceous and arenaceous materials of the more ſouthern parts preſented leſs reſiſtance, were more eaſily preyed upon, and gave way to what is now called the German Ocean, while theſe materials themſelves were ſpread over Weſtphalia, &c. or formed the ſubſoil of Flanders, Holland, and the ſand-banks on its coaſt. The rupture of the iſthmus that joined Calais and Dover was probably effected by an earthquake at a later period, and gradually widened by tides and currents. Ireland was protected by Scotland from the violence of the northern ſhock; and hence its ſeparation from Scotland appears to have been late and gradual. That from England was probably diluvial, and effected by a ſouthern ſhock. Theſe changes, ſays this writer, happened at leaſt 3600 years ago. But to return from this digreſſion.

The fertility and pleaſantneſs of Great Britain gave occaſion to imagine that theſe were the fortunate iſlands, deſcribed by the poets, where the face of nature exhibited a perpetual ſpring. In former times this was the granary of the weſtern empire: from hence was tranſported every year an immenſe quantity of corn for the ſupply of the army on the frontiers of Germany. As to the hiſtory of its more early ſtate, its population, fertility, and a variety of other circumſtances relating to it, we refer to the next article.

The climate of Great Britain is, perhaps, more variable than that of any other country on the globe; and this circumſtance has been aſcribed to the oppoſition between the vapours of the Atlantic Ocean, and the drying winds from the eaſtern continent. The weſtern coaſts are ſubject to frequent rains; and the eaſtern part of Scotland has a clearer and drier temperature than that of England. The humidity of the climate, whilſt it inveſts the delicious vales and meadows with a verdure unknown to any other region, injures the health of the inhabitants, by occaſioning colds and catarrhs, which too frequently terminate in conſumptions, that are fatal to many in the prime of youth. Beſides, the moiſt and foggy climate conſpires, with the exceſſive uſe of groſs animal food, to produce that melancholy, which foreigners have conſidered as a national characteriſtic of the country. To the mutability of the climate we may reaſonably aſcribe the precariouſneſs of the ſeaſons. To this purpoſe it has been obſerved by ſome judicious perſons, that ſince the year 1775, a conſiderable change has taken place, with regard to the temperature of the year, both in Great Britain and Ireland. The winters have been, in general, more moiſt and mild, and the ſummers have been more humid and more cold, than the average of preceding years. With us the year might not improperly be divided into eight months of winter and four of ſummer. The ſpring dawns in April, which is commonly a mild month, but eaſtern winds prevail in May, and check the efforts of reviving nature, and diſappoint the promiſe of the year. June, July, Auguſt, and September, are uſually warm ſummer months, with occaſional froſty nights even in Auguſt, and cold eaſt wind; and ſome ſummers have of late years been chilled by conſtant rain. Our winter commences with the beginning of October, which, however, is often a mild and pleaſant month; ſevere froſt does not commonly occur till Chriſtmas. November is the moſt gloomy month of the year; and allowed, generally, to be the moſt unſettled month, interſperſed with dry froſt, cold rains, and ſtrong winds, with ſtorms of hail and ſleet. But all obſervations of this kind muſt be conſidered as general in their nature; and counteracted by different ſituations with regard to latitude, and by a variety of local circumſtances.

The population of Great Britain has been variouſly eſtimated; ſome reckoning it at 7,000,000, and others at more than 12,000,000. But in the year 1800 an act was paſſed, (41 Geo. III.) "for taking an account of the population of Great Britain, and of the increaſe or diminution thereof." From an abſtract of the returns made to parliament, in conſequence of this act, the following reſult was deduced:

SUMMARY of ENUMERATION.

	HOUSES.			PERSONS.		
	Inhabited.	By how many families occupied.	Uninhabited.	Males.	Females.	Total.
England - - - -	1,472,870	1,787,520	53,965	3,987,935	4,343,499	8,331,434
Wales - - - -	108,053	118,303	3,511	257,178	284,368	541,546
Scotland - - - -	294,553	364,079	9,537	734,581	864,487	1,599,068
Army, including militia -	- - -	- - -	- - -	198,351	- - -	198,351
Navy, including marines -	- - -	- - -	- - -	126,279	- - -	126,279
Seamen, in regiſtered ſhipping	- - -	- - -	- - -	144,558	- - -	144,558
Convicts, on board the hulks -	- - -	- - -	- - -	1,410	- - -	1,410
Totals -	1,875,476	2,269,902	67,01[illegible]	[illegible]	5,492,354	10,942,646

On this enumeration it is obſerved, that the total population of Great Britain probably exceeds the number of perſons ſpecified in the above ſummary, in as much as from ſome pariſhes no returns were received. From the number of houſes in Ireland, nearly aſcertained by the collection of a hearth-money tax, it has been computed, that the population of that part of the united kingdom ſomewhat exceeds four millions of perſons. It ſhould alſo be obſerved, that the iſlands of Guernſey, Jerſey, Alderney, and Sark, the Scilly iſlands, and the Iſle of Man, were not compriſed in this enumeration; and that the total population of theſe iſlands has been uſually eſtimated at about 80,000 perſons. On theſe conſiderations, with a very moderate allowance for omiſſions in the returns, the total population of the united kingdom of Great Britain and Ireland amounts to *fifteen millions one hundred thouſand* perſons; and beſides theſe, its eaſtern and weſtern poſſeſſions and colonies contain many natives of the Britiſh iſles. On a more enlarged ſurvey of theſe colonies and ſettlements, we may conſider their inhabitants either as ſubjects of Great Britain, or as augmenting its importance by their intimate connection with it. The moſt important of theſe are now in Aſia; and in Hindooſtan, the nations ſubject to Great Britain cannot be now calculated at leſs than 40 millions. The acquiſition of the Dutch ſettlements, the colony of New Holland, and more minute ſtations, muſt alſo be taken into the account. In America, and what is called the Weſt Indies, Canada, Nova Scotia, Newfoundland, and the more northern ſettlements, with Jamaica, and the other iſlands, may, perhaps, contain a million. In Africa, the ſettlements at the Cape of Good Hope, the iſlands of St. Helena and at Sierra Leone, preſent an inſignificant number; and Gibraltar is to be regarded merely as a military ſtation. However, if we compute the North American ſtates, detached from the mother country, at a population of five millions, the united kingdom of Great Britain and Ireland at 15 millions, and our colonies and ſettlements at only two millions, we ſhall find in the various countries of the globe an increaſing population of 22 millions, diffuſing the Engliſh language and manners to a vaſt extent, and contributing in one way or other to the wealth, power, greatneſs, and proſperity of Great Britain.

From the above table it appears, that the enumeration of 1801 amounts to 8,872,980 perſons for England and Wales; and to this number an appropriate ſhare of ſoldiers and mariners is to be added. Theſe appear to have been 469,188; and if, excluſive of them, the total population of the Britiſh iſles is 14,630,812, (15,100,000—469,188) about a thirtieth part may be added to the inhabitants in order to aſcertain the population of any diſtinct part. Accordingly, in the following table, the exiſting poulation of England and Wales is taken at 9,168,000; and the population attributed to the other years, is obtained by the rule of proportion, thus: if 255,426 baptiſms (the average medium of the laſt five years, deduced from the returns of pariſh regiſters,) were produced from a population of 9,168,000, from what population were 152,540 (the baptiſms of 1700, given in the ſame returns) produced?

Table of Population throughout the laſt Century.

ENGLAND and WALES.	
In the Year.	Population.
1700 - - -	5,475,000
1710 - - -	5,240,000
1720 - - -	5,565,000
1730 - - -	5,796,000
1740 - - -	6,064,000
1750 - - -	6,467,000
1760 - - -	6,736,000
1770 - - -	7,428,000
1780 - - -	7,953,000
1785 - - -	8,016,000
1790 - - -	8,675,000
1795 - - -	9,055,000
1801 - - -	9,168,000

Upon a view of this table it may be obſerved, that although the beginning of the century exhibits a decreaſing population, the loſt number had been regained in 1720; and ſince that time a continual, though irregular, increaſe is manifeſt. It alſo appears, that the population of England and Wales, in 1801, compared with that of the beginning of the laſt century, is as 1000 to 597, or nearly as ten to ſix.

The following table for Scotland is formed in the ſame manner; but being founded on a collection of no more than 99 pariſh regiſters, from different parts of the country, it is of much leſs authority. Theſe pariſhes contain leſs than a ſeventh of the whole population. In Scotland there are in all about 900 pariſhes.

TABLE of Population throughout the laſt Century.

SCOTLAND.	
In the Year	Population.
1700 - - -	1,048,000
1710 - - -	1,270,000
1720 - - -	1,390,000
1730 - - -	1,309,000
1740 - - -	1,222,000
1750 - - -	1,403,000
1760 - - -	1,363,000
1770 - - -	1,434,000
1780 - - -	1,458,000
1785 - - -	1,475,000
1790 - - -	1,567,000
1795 - - -	1,669,000
1801 - - -	1,652,370

The population of Scotland, in 1801, compared with that of the beginning of the laſt century, appears to be as 1000 to 634, or nearly as 10 to $6\frac{1}{3}$, which as the 99 pariſh regiſters were received from the manufacturing parts of Scotland, gives too high a ſtatement of the increaſe of population.

In the year 1695 a poll-tax was levied in Ireland; and on this occaſion it was calculated, that the number of inhabitants was 1,034,000; but the uſual evaſion of taxation may be ſuppoſed to have conſiderably leſſened the real number. About the year 1795, Ireland contained, at leaſt, 4,000,000, and ſince that time the number has not increaſed. However, it may not be very erroneous to eſtimate the population of Ireland at 1,500,000 in the year 1700, and at 4,000,000 in the year 1801. If this be granted, the population belonging to all the Britiſh iſles has increaſed during the laſt century from 8,100,0000 to 15,100,000.

Of the population of Great Britain, the army has, of late years, engroſſed a conſiderable ſhare. It conſiſts of regulars, in cavalry, and infantry, and the militia, excluſive of artillery and engineers. The volunteer corps in Great Britain and Ireland amounted in December, 1803, to 430,000; and on the 1ſt of January, 1805, the ſecretary of war made the following return of the ſtate of the Britiſh forces at home, and on foreign ſtations, viz. 21,223 of cavalry, including 1,088 horſe artillery; 8,559 of artillery; 124,878 of infantry, including 20,747 men for limited ſervice, and 21,208 men belonging to foreign and provincial corps in Britiſh pay; and 89,809 of militia: ſo that the whole Britiſh force, in regulars, militia, and volunteers, amounts to 674,469 men. To theſe we may add the royal regiment of artillery, the horſe brigade, the brigade of gunners and drivers, and companies of foreign artillery, amounting on the 1ſt of January, 1805, to 16,670; and the corps of royal artillery, artificers and labourers, including, at the ſame period, 704 men.

But the great rampart and ſupreme glory of Great Britain conſiſt in her navy, in ſize, ſtrength, and number of ſhips, far exceeding any example on record. In 1805, the total of ſhips in commiſſion amounted to 684, conſiſting of 111 of the line, 19 fifties to forty-fours, 150 frigates, and 404 ſhips of various kinds; beſides ſeveral repairing, in ordinary, and building: amounting in the whole to 895. For this immenſe fleet, the number of ſeamen, annually voted, amounts from a hundred to a hundred and twenty thouſand; a number which no other country ancient or modern could have ſupplied. To ſupport the expenditure occaſioned by the army and navy of Great Britain, to defray the other charges of government, and alſo to diſcharge the intereſt of the national debt, a very large ſum is raiſed by a variety of taxes, in aid of the revenue, ariſing from the exciſe and cuſtoms. The ability of the country for bearing the burden which its exigencies impoſe upon it, conſiſts in the produce of its land and manufactures, and in the circulation of property, occaſioned by its domeſtic trade and foreign commerce. Theſe ſources of national wealth have been improved to an aſtoniſhing degree in the courſe of the laſt century and a half. Availing ourſelves of the eſtimate of the national wealth of Great Britain, furniſhed by Mr. Grellier, an ingenious writer, in one of our periodical publications (Monthly Magazine, vol. x.) we ſhall ſubjoin the following ſtatement of its vaſt increaſe during the period above mentioned. In 1664, ſir William Petty eſtimated the wealth of England at the ſum of two hundred and fifty millions. His computation is ſubjoined.

Value of the land; being 24 millions of acres, yielding 8 millions per annum rent, worth at 18 years purchaſe -	£ 144,000,000
Houſes; reckoning thoſe within the bills of mortality, equal in value to one-third of the whole - - - -	30,000,000
Shipping; 500,000 tons at 6*l.* per ton, including rigging, ordnance, &c. -	30,00,000
Stock of cattle on the 24 millions of acres and the waſte belonging to them, including parks, fiſheries, warrens, &c.	30,000,000
Gold and ſilver coin, ſcarce - -	6,000 000
Wares, merchandize, plate, furniture -	31,000,000
	£ 250,000,000

But ſince the time when this computation was made, a great difference in the value of money has taken place, which difference appears from the table of ſir George Shuckburgh Evelyn, in the Philoſ. Tranſ. for 1798, part 1, page 177, to be in the proportion of about 5 to 14; and, therefore, the total wealth of England and Wales, in 1664, would have amounted to 700,000,000*l.* according to the preſent value of money.

The value of land has progreſſively increaſed, in conſequence of improvements in cultivation, and the increaſed conſumption of its produce, from 18 years' purchaſe, at which ſir William Petty ſtates it, to from 28 to 30 years' purchaſe. The whole landed rental of England and Wales, and the Low-lands of Scotland, was ſtated by this writer at about 9 millions; and if he had included the High-lands of Scotland, it is reaſonable to ſuppoſe that he would not have made the whole rental of the iſland more than 9,500,000l. G. King and Dr. Davenant, in the reign of queen Anne, ſtated the rental of England and Wales at 14,000,000l.; about 25 years ago, it was generally reckoned at 20,000,000l.; but at preſent it conſiderably exceeds that ſum. The cultivated land appears, from the ſtatement of Mr. Middleton, in his "View of the Agriculture of the County of Middleſex," to be 39,027,000 acres; and the commons and waſte-lands to be 7,899,000 acres; and, therefore, the total of acres in England and Wales amounts to 46,916,000 acres. If, therefore, we conſider the commons and waſte lands as equal in annual value to only one million of cultivated acres, the whole may be taken at 40 millions: and taking the average rent, which, at 15s. per acre, appears to be a moderate computation, at a tenth leſs, the rental amounts to 27,000,000l. and the value at 28 years' purchaſe to 756,000,000l. The number of cultivated acres in Scotland is upwards of 12 millions, and of uncultivated acres upwards of 14 millions, which, being of little uſe, may be wholly excluded; and the cultivated part, being rated at an average of 10s. per acre, yields the ſum of 6,000,000l.

per annum: and the total rental of Great Britain will be 33,000,000l. and the value of the land, at 30 years' purchaſe, be 990,000 000l. Other writers have endeavoured to prove, (ſee Beche's "Obſervations on the Produce of the Income Tax,") that in the whole extent of England and Wales there are no more than 38,500,000 acres of land; and that Scotland, with its adjacent iſlands, contains about 21 million of acres. It is not ſo eaſy to aſcertain the value of the houſes as it is to determine the value of the land; but the following ſtatement of their rent, founded on the numbers returned as chargeable and excuſed to the window duties, in England and Wales, in 1781, will not be thought too high:

	Rent.
Number of cottages 284,459, at 20s. per annum - - - -	£ 284,459
Number of houſes under 10 windows, 497,801, at 5l. per annum - -	2,489,005
Number of houſes under 21 windows, 171,177, at 15l. per annum - -	2,567,655
Number of houſes, above 20 windows, 52,373, at 40l. per annum - -	2,094,920
Total -	£ 7,436,039

The total rent, at 20 years' purchaſe, makes 148,720,780l. and including Scotland at leſs than a ſixth of England and Wales, the whole will amount to 170,000,000l.

In order to form an idea of the value of cattle and farming ſtock, on the land, we may conſider the black cattle and calves, ſheep and lambs, ſwine, pigs, and poultry, annually conſumed in London as worth 6,000,000l. which cannot be more than a ſeventh part of the whole conſumption, amounting therefore in value to 42,000,000l.: but the whole number of cattle exiſting muſt be more than double the quantity brought to market; ſo that, including horſes, aſſes, cows kept for milk, and oxen employed in agriculture, the whole value of the cattle cannot be leſs than 90,000,000l.

Taking the annual conſumption of grain of all ſorts at 14,000,000 quarters, which is probably below the truth, it may be preſumed, that in general there is at leaſt three or four months' ſupply on hand, which, at only 35s. per quarter, will amount to at leaſt 6,125,000l. The value of hay and ſtraw, and all kinds of fodder, and of all implements of huſbandry, cannot be leſs than five or ſix millions, and with the former ſum will make about 12,000,000l. The total value of cattle and farming ſtock is therefore 102,000,000l.; and if it be eſtimated as equal in value to only three times the yearly rent, it will amount to nearly this ſum.

The value of the ſhipping belonging to Great Britain may be more accurately aſcertained: for it appears that, in 1794, the tonnage of the veſſels in the merchants' ſervice was 1,589,162 tons; but taking it at 1,500,000l. at 8l. per ton, it makes 12,000,000l. and this is without doubt below the real value. In the year ending the 5th of January, 1804, the number of Britiſh ſhips entered inwards was 11,396; their tonnage 1,614,365; and the number of foreign ſhips 4,252, and their tonnage 638,034; the number of Britiſh ſhips cleared outwards, was 3,662, and their tonnage 574,542; and the number of foreign ſhips 3,662, and their tonnage 574,542. The ſhipping of the navy may perhaps be eſtimated at 4,000,000l. making, with the former ſum, 16,000,000l. to which ſome addition ſhould be made for the value of the ſmall craft employed on our rivers and canals.

The quantity of money in the country has, at different times, been a ſubject of diſpute, and has never been determined with preciſion. However, by the recoinage in 1773, 1774, and 1776, it was found, that the value of the light gold delivered into the bank amounted to 15,563,593l.; and it was generally admitted that ſomewhat more than two millions of heavy guineas remained out in circulation, which with the ſilver and copper coin, made the whole, at that time, about 20 millions, at which ſum Mr. Chalmers eſtimated it in the year 1786. Mr. Grellier eſtimates it at about 25 millions.

Of the value of the merchandize and manufactures uſually in the hands of the merchants, wholeſale dealers, ſhop-keepers, and manufacturers, it is very difficult to form a ſatisfactory idea. The total amount of the exports in 1797 was 28,917,000l. and of imports 21,013,000l. according to the cuſtom-houſe accounts; but theſe accounts being conſiderably below the true value, if we take the whole as rated only 60 per cent. under the value in 1800, the annual amount of foreign trade eſtimated for that period, will be 79,880,000l. to which ſome addition ſhould be made for ſmuggled goods. Mr. Pitt, in 1799, computed the imports at 25,000,000l. and the exports at more than 33,000,000l.; and in Feb. 1801, the foreign exports at 17,000,000l. and the domeſtic at 20,000,000l., amounting to a total of 37,000,000l. The official value of all imports, on an average of ſix years, ending the 5th of January, 1804, was 29,490,945l.; and the official value of Britiſh manufactures exported, on the ſame average to the ſame time, was 23,834,340l.; and real value 40,100,870l.; and the official value of foreign merchandize exported, on the ſame average, to the ſame time, was 15,323,500l.; and the real value 9,323,257l. It was the opinion of a numerous meeting of merchants in March, 1797, that there is always, at the leaſt, two months' ſupply of export and import merchandize in the cuſtody of the merchants and traders, which, according to the above total of 79,888,000l. will amount to 13,314,666l. to which ſome addition ſhould be made for property in the hands of foreign merchants. But the value of goods in the hands of manufacturers and retail traders far exceeds this ſum. The official value of Britiſh manufactures exported in 1798 was 19,771,510l.; but this being at leaſt 71 per cent. below the real value, we may take the actual value, on an average of two years, at 31,356,793l., which, it is preſumed, cannot be more than a third of the whole produce of our manufactures; and accordingly, this will amount to 94,070,379l. If we deduct 5,000,000l. for that ſmall part which is ſuppoſed to be in the hands of the merchants, the remainder will be 89.070,379l.; and of this it is probable that there is much more than three months' ſupply in the hands of the manufacturers and retail traders, which eſtimated in this proportion, amounts to 22,267,594l.

As to the value of that part of the property of individuals which conſiſts in houſehold furniture, wearing apparel, proviſions, fuel, carriages, &c. &c. we can recur only to conjecture; but it may be thought not to be over-rated at three times the yearly rent of the houſes which contain it, or 26,026,000l. in the whole of Great Britain.

The following ſummary will exhibit the reſults of the above eſtimates:

Value of the land of Great Britain	£ 990,000,000
Houſes - - - - - -	170,000,000
Cattle, and all kinds of farming ſtock -	102,000,000
Shipping, navy, and merchant ſhips -	16,000,000
Money - - - - - -	25,000,000
Goods in hands of merchants and wholeſale dealers - - - - -	13,314,000
Goods in hands of manufacturers and retail-traders - - - -	22,267,000
Furniture, apparel, &c. - - -	26,026,000
Total -	£ 1,364,607,000

From the above ſtatement it appears that, ſince the year 1664, there has been an average gain of upwards of four millions per annum, of which a very conſiderable part has been derived, directly or indirectly, from foreign commerce. The great increaſe of the annual income affords a further proof that there muſt have been ſuch an accumulating ſurplus. Sir W. Petty (Pol. Aritb. p. 123.) ſuppoſed the income derived from land to be 8,000,000l. the profits of perſonal eſtates 8,000,000l. and the profits of all kinds of labour 26,000,000, making together 42,000,000l. Mr. G. King eſtimated the whole income at 43,500,000l. Dr. Davenant, in 1701, ſtates the income derived from land at 10,000,000l. the profits of trade at 6,000,000l. and thoſe of ſciences, arts, labour, induſtry, manufactures, retailing foreign goods, and buying and ſelling home commodities, at 33,000,000l. making in the whole 49,000,000l. Theſe accounts are excluſive of Scotland; but after making a ſufficient addition for this country, it will appear that there has been a conſiderable increaſe of the general income. Sir John Sinclair, in his "Hints addreſſed to the Public," in 1783, obſerved, that the income of the country ariſing from lands, commerce, and manufactures, was commonly calculated at 100,000,000l. which he inclined to think a low valuation; and, without doubt, the profit derived of late years from each of theſe ſources has conſiderably increaſed. It is not eaſy to form a very preciſe eſtimate of the national income; but the following ſtatement is preſumed to be not very inaccurate:

From rent of lands - - -	£ 33,000,000
——ditto of houſes - - - -	8,500,000
Profits of farming, or the occupation of the land - - - - -	6,120,000
Income of labourers in agriculture -	15,000,000
Profits of mines, collieries, and inland navigations - - - - - -	2,000,000
Profits of ſhipping in merchants' ſervice, and ſmall craft - - - -	1,000,000
Income of ſtock-holders - - -	15,500,000
From mortgages, and other money lent on private ſecurities - - -	3,000,000
Profits of foreign trade - - -	11,250,000
Ditto of manufactures - - -	14,100,000
Pay of the army and navy, and ſeamen in merchants' ſervice - - -	4,500,000
Income of the clergy of all deſcriptions -	2,200,000
Income of the judges, and all ſubordinate officers of the law - - -	1,800,000
Profeſſors, ſchool-maſters, tutors, &c. -	600,000
Retail trades, not immediately connected with foreign trade or any manufacture	8,000,000
Various other profeſſions and employments	2,000,000
Male and female ſervants - - -	2,000,000
Total -	£. 130,570,000

If the total expenditure be eſtimated at 125,860,000l., which has been deduced from a minute, and, perhaps, as accurate a ſtatement of particulars as the ſubject, admitting of various conjectures and preſumptions, allows, the difference between this expenditure and the general income ſhews the annual gain of the country, or the ſum applicable to the extenſion of commerce, the reſervation of a greater quantity of foreign articles, the increaſe of ſhipping and buildings, agricultural or mechanical improvements, or other augmentations of the general ſtock.

On introducing the income-tax, Mr. Pitt, chancellor of the exchequer, gave the following eſtimate of the annual income of Great Britain:

The land rental, after deducting one-fifth - - - - -	£.20,000,000
The tenants' rental of land, deducting two-thirds of the rack-rent - -	6,000,000
The amount of tythes, deducting one-fifth - - - -	4,000,000
The produce of mines, canal navigations, &c. deducting one-fifth - -	3,000,000
The rental of houſes, deducting one fifth	5,000,000
The profits of profeſſions - - -	2,000,000
The rental of Scotland, taking it at one-eighth of that of England -	5,000,000
The income of perſons reſident in Great Britain, drawn from poſſeſſions beyond the ſeas - - -	5,000,000
The amount of annuities from the public funds, after deducting one-fifth for exemptions and modifications -	12,000,000
The profits on the capital, employed in our foreign commerce - -	12,000,000
The profits on the capital employed in domeſtic trade, and the profits of ſkill and induſtry - - - -	28,000,000
Total -	£.102,000,000

As one of the principal ſources of the wealth of Great Britain conſiſts in its manufactures, it may not be improper to give a brief ſtatement of them; reſerving a more copious detail for other articles in this dictionary, under which they will ſeparately occur. The woollen manufacture deſerves to be firſt mentioned, becauſe it is the moſt ancient, and, in a variety of reſpects, the moſt important ſtaple of the country. In an examination of the principal woollen manufacturers by a committee of the houſe of commons not long ago, the quantity of wool grown in this country was eſtimated at 600,000 packs of 240lbs. each, which, valued at 11l. per pack, amount to 6,600,000l.: and though the increaſe of value of manufactured wool is various, and depends on its quality, yet it was ſtated, that the total value of the wool manufacture in this country amounts to 19,800,000l. But the calculation ſuppoſes, that the number of ſheep, in 1791, was 28,800,000, which exceeded the truth at that time, and much more ſince that period; and it was formed upon an unuſually high price of wool. But the eſtimate will be much leſs objectionable, if it be formed on 500,000 packs at 10l. 10s. per pack, and thus the value of the wool will be 5,250,000l., and its manufactured value will be 15,750,000l. The average value of woollen goods exported for 1797, 1798, and 1799, is 6,104,211l. which, as the cuſtom-houſe values of goods exported are much below their real value, requires an addition of about 25 per cent. and thus it becomes 7,630,263l. The value of goods retained for home conſumption will be nearly equal to that of ſuch as are exported; and, therefore, the whole value of the manufacture appears to be about 15,260,000l. and may be taken, at a medium, between this ſum and that before ſtated, at 15,500,000l. Deducting 10 per cent. on the coſt of the goods, for the profits of the manufacturer, with intereſt of his capital, there will remain 14,090,909l. for the coſt of materials and wages of labour: and as the value of the wool is about 5,250,000l.; the amount of workmanſhip, or the wages of all the perſons employed in this manufacture, is 8,840,909l.; and the whole number of perſons employed, averaging their wages at 8s. each per week, does not exceed 425,043l.

The value of the leather manufacture may be ſtated at 10,500,000l. from which deducting 954,545l. for the profits of the capital, and 3,500,000l. for the coſt of the raw article, there will remain 6,045,455l. for the wages of perſons employed in it, which, allowing to each 25l. a year at an average, makes the number employed 241,818.

The cotton manufacture was formerly inconſiderable, in compariſon with its preſent ſtate. The total quantity of cotton wool imported into England, on an average of five years, ending with 1705, was 1,170,881lbs.; and ſo late as the year 1781, it amounted to only 5,101,920lbs. But this manufacture was ſo much extended, that before the commencement of the laſt war the conſumption of cotton wool amounted to upwards of 30,000,000lbs. per annum. During the years 1796, 1797, 1798, and 1799, the annual import, at an average, was 30,434,000lbs.; the value of which, when manufactured, cannot be leſs than 9,500,000l.; and if we deduct from this ſum 863,636l. for profits of capital, at 10 per cent. and 3,804,250l. for coſt of the raw material at 2s. 6d. per pound, there will remain 4,832,114l. for wages, which, divided at the rate of 15l. per annum for each perſon, on account of the number of women and children employed, makes the whole number 322,140 perſons.

The ſilk manufacture has of late years experienced little fluctuation; the average of raw and thrown ſilk imported for three years preceding the 5th of January, 1797, was 883,438lbs.; and the uſual quantity cannot be ſtated at leſs than 900,000lbs. the value of which, when manufactured, is about 2,700,000l. The coſt of the ſilk, averaging that of the raw and thrown at 28s. per pound, amounts to 1,260,000l., and the profits of the manufacturer to 245,454l. at the rate of 10 per cent. on the coſt when manufactured. The number of perſons employed in this manufacture has been ſtated at 200,000 and upwards; but there is reaſon, ſays Mr. Grellier, to believe that it does not exceed 60,000 of all deſcriptions.

The linen manufacture of Great Britain is chiefly confined to Scotland, though ſome branches of it are carried on in Mancheſter and other parts of England. The total quantity of Britiſh linen exported during the years 1797, 1798, 1799, was 56,481,000 yards; and if the quantity retained for home conſumption is not greater than the export, the value of the whole muſt be at leaſt 1,600,000l.; and that this does not exceed the truth is probable, if the yearly value of the whole manufacture in Great Britain, with the thread and other branches of the flax trade, is ſtated at 2,000,000l., and the number of perſons employed at 60,000.

The hemp manufacture at preſent exceeds 1,500,000l., but it is leſs in time of peace; and the number of perſons employed is probably not leſs than 35,000.

The paper manufacture has of late greatly advanced. About 100 years ago, the paper made in this country was almoſt wholly the coarſe wrapping paper, and for a long time the ſuperior kinds were for the moſt part imported; but the export is now conſiderable. The annual value of the manufacture, at the preſent high prices of the article, cannot be leſs than 900,000l.; and the number of perſons employed is 30,000.

The glaſs manufacture has of late very much improved and increaſed; ſo that it may now amount to 1,500,000l. and the perſons employed in it are about 36,000.

The potteries and manufactures of earthen ware and porcelain have rapidly advanced during the preſent century, in conſequence of the improvement they have received, and the introduction of many new and beautiful wares both for our own uſe and foreign markets. We are particularly indebted to Mr. Wedgwood, "for converting clay into gold." The annual value will probably not be over-rated at 2,000,000l., and the number of perſons employed at 45,000.

The iron manufacture is ſupplied partly by the produce of our own mines, and partly by thoſe of other countries. With reſpect to the firſt it is ſaid, the total produce of pig-iron in Britain does not at preſent exceed 100,000 tons, and reckoning on an average, that 33 cwt. of crude iron produces one ton of bars, and that the manufacture of malleable iron amounts to 35,000 tons per annum, this branch will require 57,750 tons of crude iron; and the value in bars at 20l. a ton is 700,000l.; the remaining 42,250 tons, caſt into cannon, cylinders, machinery, &c. at 14l. a ton, is worth 591,500l. The ſupply of foreign bar-iron is chiefly obtained from Ruſſia and Sweden; and the quantity imported, on an average of 12 years, has been 44,135 tons, worth, at 22l. per ton, 970,970l., which, together with the former ſums, amounts to 2,262,470l. Some years ago, the value of the iron manufacture was eſtimated at 8,700,000l.; but if this ſum ſhould appear too high, we may include tin and lead, and the value of the whole will probably amount to 10,000,000l., and the number of perſons employed to 200,000.

The copper and braſs manufactures are now eſtabliſhed in this country. Till about the years 1720 or 1730, moſt of the copper and braſs utenſils uſed for culinary and other purpoſes in this country were imported from Hamburg and Holland, being procured from the manufactories of Germany: and even ſo late as the years 1745 and 1750, copper tea-kettles, ſaucepans, and pots of all ſizes, were imported in large quantities. But by the perſevering induſtry, capitals, and enterpriſing ſpirit of our miners and manufacturers, theſe imports have become totally unneceſſary; ſo that the articles are now all made here, and far better than any other country can produce. The diſcovery of new copper-mines in Derbyſhire and Wales, about the year 1773, contributed to the extenſion of the manufacture in this country; and it appears to be ſtill increaſing, notwithſtanding the late great advance in the price of copper. The value of wrought copper and braſs, exported during the year 1799, was 1,222,187l.; and there is reaſon to believe that the whole value of theſe manufactures at preſent is at leaſt 3,500,000l., and the number of perſons employed 60,000.

The ſteel, plating, and hard-ware manufactures, including the toy-trade, have been of late much extended, and may probably amount in value to 4,000,000l., and the perſons employed to at leaſt 70,000.

It is acknowledged, that many of theſe eſtimates muſt be eſſentially defective, from the want of public documents reſpecting many important branches of trade. However, they ſerve to ſhew, in a general view, the relative extent of our principal manufactures, as in the following ſummary:

	Annual Value.	Perſons employed.
Woollen - -	£. 15,500,000	425,043
Leather - -	10,500,000	241,818
Cotton - -	9,500,000	322,140
Silk - - -	2,700,000	60,000
Linen and flax -	2,000,000	60,000
Hemp - -	1,500,000	35,000
Paper - -	900,000	30,000
Glaſs - - -	1,500,000	36,000
Potteries - -	2,000,000	45,000
Iron, tin, and lead	10,000,000	200,000
Copper and braſs -	3,500,000	60,000
Steel, plating, &c. -	4,000,000	70,000
	£. 63,600,000	1,585,000

To the above enumerated manufactures of greater importance, we might have added thoſe of hats, horn, ſtraw, &c. which taken together are of very conſiderable amount, and employ a great number of hands. There are alſo ſome, which, though not generally included among the manufactures, partake of the nature of theſe, and might not improperly be claſſed with them. To this head we might refer the elegant branch of exportation, or that of beautiful prints, for which this country is in an eminent degree indebted to the late alderman Boydell. Grellier, Month. Mag. Jan. 1801.

The commerce of Great Britain extends through the eaſtern and weſtern hemiſpheres of the globe, by means of the capital and credit of the country, the ſkill and induſtry of its artizans and manufacturers, the number of its ſhips and the character of its ſeamen, and the enterpriſing ſpirit as well as eſtabliſhed reputation of its merchants. The number of regiſtered veſſels belonging to the Britiſh dominions, and employed in trade in 1802, was 20,568, their tonnage 2,128,055, and the number of ſeamen navigating the ſame, 154,530. In 1803, the number of veſſels was 21,445; their tonnage 2,238,249; and the number of men 155,445; being an increaſe of 877 ſhips, of 110,194 tons, and of 915 men.

The following table will exhibit a complete view of Britiſh commerce ſolely from the port of London, for one year ending Jan. 5, 1795, ſince which the commerce has increaſed.

Names of the Countries.	Value of Import into London.			Value of Exports from the Port of London, to Foreign Parts.					
				Britiſh Manufactures			Foreign Merchandize.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.
Ireland	2,209,501	3	4	168,687	18	3	914 352	4	4
Britiſh Weſt Indies	6,072,117	5	0	2,249,043	13	11	579,453	6	0
Conquered Iſlands	1,226,064	13	8	260,976	0	11	110,817	18	0
Britiſh American Colonies	307,412	13	0	654,842	19	4	251,551	6	2
Guernſey and Jerſey	91,936	1	2	12,001	13	10	21,616	16	8
Gibraltar	12,947	16	8	83,473	14	11	69,315	2	8
Honduras Bay	14,696	4	2	2,029	18	11	2,550	16	2
South Fiſhery	197,680	8	6	21	6	8	—	—	—
Aſia, including Eaſt Indies	8,916,950	2	10	3,398,680	1	4	185,190	16	0
Africa	66 013	8	4	90,593	12	9	188,743	16	6
Turkey	641,860	19	2	32,065	12	0	123,776	7	2
Streights	8,399	14	0	—	—	—	—	—	—
Venice	82,107	16	0	6,203	17	11	16,305	7	2
Italy	1,215,012	15	0	80,980	18	9	340.786	0	8
Spain	1,070,697	18	0	205,096	4	4	265,169	3	4
Portugal	644,600	3	8	182,780	6	2	119,813	12	6
Madeira	7,479	16	8	27,998	6	10	6,886	18	2
Canaries	6,763	19	10	20,116	18	4	377	5	2
France	130	6	8	3,216	5	3	63,625	10	6
Auſtrian Flanders	137,249	5	0	129,413	9	7	887,642	18	10
Holland	1,203,515	3	6	114,458	3	7	1,968,687	3	4
Germany	1,089,307	19	4	1,044,634	18	0	6,176,100	14	8
Pruſſia	196,657	3	2	54,380	14	0	272,719	17	4
Poland	104,978	10	4	7,022	11	10	57,067	2	4
Sweden	262,727	3	4	33,845	5	6	111,457	14	4
Ruſſia	1,269,688	9	6	95,519	8	8	491,244	9	2
Denmark and Norway	166,366	1	0	147,340	0	11	545,509	19	8
Greenland	26,753	11	2	—	—	—	—	—	—
United States of America	811,511	18	8	2,251,280	12	1	429,248	7	8
Florida	16,239	16	0	38,067	0	3	8,855	0	0
Foreign Weſt Indies	56,240	2	0	1,767	13	10	60	0	0
Prize Goods	1,572,868	8	8				Included in the account of each country.		
	29,706,476	17	4	11,396,539	13	8	14,208,925	14	6

RECAPITULATION.

The aggregate value of goods imported into London in one year		29,706,476 17 4
Britiſh manufactures exported	£. 11,396,539 13 8	
Foreign merchandize, do.	14,208,925 14 6	25,605,465 8 2
Value of goods imported in upwards of 9000 coaſting veſſels, averaged at 500l. each.	4,500,000 0 0	
Value of goods exported coaſtways, in about 7000 veſſels, at 1000l. each.	7,000,000 0 0	11,500,000 0 0
Total amount of property ſhipped and unſhipped in the river Thames, in the courſe of a year, eſtimated at		66,811,942 5 6

If we add to this eſtimate, the accounts belonging to the other ports of Briſtol, Liverpool, &c. the account muſt be enormous.

From the ſtates of North America are chiefly imported tobacco, rice, indigo, timber, hemp, flax, iron, pitch, tar, and lumber; from the Weſt Indies, ſugar, rum, cotton, coffee, ginger, pepper, guaiacum, ſarſaparilla, manchineal, mahogany, gums, &c.; from Africa, gold duſt, ivory, gums, &c.; from the Eaſt Indies and China, tea, rice, ſpices, drugs, colours, ſilk, cotton, ſaltpetre, ſhawls, and other products of the loom; from our remaining ſettlements in North America, furs, timber, pot-aſh, iron; and from the various ſtates of Europe, numerous articles of utility and of luxury. Pinkerton's Geog. vol. i. p. 100.

For other particulars relating to Great Britain, ſee CONSTITUTION, DEBT, FUND, PARLIAMENT, REVENUE, &c. &c. See alſo ENGLAND, SCOTLAND, and WALES.

BRITAIN, in *Hiſtory*. It will be moſt ſuitable to the plan of this work, to divide the hiſtory of England into ſeveral branches, each of which may be conſulted under the proper heads. Theſe diviſions will be,—the hiſtory of the iſland anterior to the Saxon invaſion, which will be the ſubject of the preſent article;—the hiſtory of the Saxon octarchy from the invaſion of the Saxon tribes to the period of the Norman conqueſt, which will be introduced under the word SAXONS;—the hiſtory of England from the Norman conqueſt to the acceſſion of James I., for which ſee the article ENGLAND;—and the hiſtory from that period to the preſent times, which will be inſerted under the ſame head. SCOTLAND, IRELAND, and WALES, will be ſeparate ſubjects of hiſtory; and their tranſactions, ſo long as they continued independent nations, may be ſought for under their reſpective names. So much as is neceſſary to be known of the hiſtory of the other Britiſh iſles, will be found under the articles of HEBRIDES, *Iſle of* MAN, ORKNEYS, and SHETLAND. Theſe different topics will compriſe all that is material in the hiſtory of the Britiſh iſles.

It would give us very little trouble to ſtate the hiſtory of Britain anterior to the Saxon invaſion, if we could adopt the account ſo popular among our anceſtors, and give the fictions of Jeffery of Monmouth a place in our authentic annals. But Jeffery's hiſtory, though ſupported by the belief of moſt of the men of learning in the ſixteenth century, by many in the ſeventeenth, and by ſome in the laſt, cannot for a moment be ſuffered to rank in our eſtimation as true hiſtory. We need not combat the tale by a profound diſquiſition: it has the merit of diſcrediting itſelf by its abſurdities and improbabilities; and we might diſmiſs it into oblivion without another ſentence, but that the public may be curious to know what ſort of fiction it was, which was capable of intereſting our anceſtors ſo much, and of ſeducing ſo many learned men to patronize and defend it.

After ſettling Æneas in Italy, marrying him to Lavinia, and killing Turnus, in exact conformity to Virgil, Jeffery gives him one Sylvius for a grandſon, whoſe friends, the magi of the day, oblige with a prophecy, that his wife was pregnant with a ſon, who would deſtroy both his father and mother, and after travelling over many countries in baniſhment, would at laſt arrive at the higheſt pitch of glory.

This luckleſs lad was Brute, who killed his mother in his birth, and, at 15 years of age, completed the prediction by deſtroying his father. Being expelled Italy by his kinſmen for the parricide, he went to Greece, and found the Trojans kept in ſlavery by one Pandraſus, whom the author compliments with the title of king of the Grecians, but whom no Greek hiſtorian has ever acknowledged. Brute aſſembled the Trojans from all parts, and ſent a letter to this Pandraſus, aſſuring him that the Trojans would rather live after the manner of wild beaſts on fleſh and herbs with liberty, than enjoy the greateſt luxury under his ſlavery,

Pandraſus was ſurpriſed at this meſſage; but he was ignorant that he had to do with a hero whom his hiſtorian had determined to make an infallible conqueror. It was, therefore, in vain he beſieged a town called Sparatinum, the ſituation of which only Jeffery knew, but with which he has forgotten to acquaint us; for though he outnumbered the Trojans ſo much that their brave commander dreaded a pitched battle, yet Brute contrives a ſtratagem to enter their camp at night, deceive the watch, and kill them all in their ſleep. He accompliſhes all this as eaſily as he conceived it.

Pandraſus is taken priſoner; his army annihilated. A conſultation is held to conſider what is to be done with the captive; and as it is a rule with Jeffery to detail the very words of every converſation, the ſpeeches are again recited at full length; and Pandraſus is liberated on condition of giving Brute his daughter Ignoge for wife, with plenty of gold, ſilver, ſhips, corn, wine, and oil, and alſo permiſſion to remove to ſome other country.

With his new wife and 324 ſhips, and after many ſwoons on the part of Ignoge, and many kiſſes on the part of Brute, "which he ceaſed not till ſhe grew weary of crying, and fell aſleep," he ſet ſail, and two days afterwards came to an uninhabited iſland, in which was a convenient temple of Diana, and a ſtatue of the goddeſs, that kindly gave anſwers to all who conſulted her. In ſix very pretty lines, which Milton thinks too good for the age of the tranſlator, he aſks her whither they were to go, though a reaſonable man would have formed ſome notion of that before he had ſet out, and not have truſted to the vague chance of a deſerted iſland and a prieſtleſs oracle.

After repeating the words exactly nine times, and walking four times round the altar, and laying himſelf before it upon the ſkin of a white hart, he fell aſleep. About the third hour of the night (for Jeffery is very particular in circumſtance, though the incident is placed about 2000 years before him), about the third hour of the night, "the uſual hour for deep ſleeps," apparitions, and viſions, the goddeſs in perſon appeared to the Trojan, and in eight lines as harmonious as his own, informs him that beyond Gaul there was an iſland in the Weſt, formerly occupied by giants, but then deſerted, where he ſhould find another Troy, and a race of kings by whom all the world ſhould be ſubdued.

With this anſwer, but without being made much wiſer by it, for Brute knew as much about Paradiſe as about Gaul, they put to ſea again in a weſtward courſe, and in 30 days came to Africa, being ignorant as yet whither to ſteer. At laſt they reached the ſtreights of Gibraltar, after great danger from pirates where their ſhip had nearly been overturned by thoſe ſea-monſters called Syrens. However, they made a ſhift to eſcape, and contrive by advancing ſtill to the weſt, for no retrogade courſe is mentioned, to get into the Tyrrhenian ſea, though, unfortunately for accurate geography, this ſea, inſtead of being near Spain, or beyond it, is in the direct contrary courſe, becauſe it waſhes the lower part of Italy. But be this as it may, here they pick up ſome Trojans, whoſe general was Corineus. This was a very modeſt man, but withal ſo courageous, "that if he encountered with any giant, he would immediately overthrow him, as if he had been a child."

From this Tyrrhenian ſea they reached the Loire, as ſuddenly as if Jeffery had ſuppoſed they were cloſe together. In vain all the kings and princes of Gaul united againſt the invaders; for they, whom ſome pirates had greatly endangered, and ſome Syrens had nearly drowned, now defeat all the confederated Gauls, burn their cities, lay waſte their fields, and make "diſmal ſlaughter among the people, being unwilling to leave ſo much as one alive of all that wretched nation." After theſe humane exertions, "they build towns, as Homer teſtifies," in ſome work to Homer and to us equally unknown; and then doubting if it were prudent to fight there any more, they ſail to Britain, the promiſed land, and arrive at Totneſs.

A new train of miracles begins; and, indeed, a little impiety is exhibited by Jeffery, for the goddeſs told Brute, that this iſland had formerly been inhabited by giants, but was now deſerted; yet, in contradiction to the divine aſſertion, the daring monk, in his ſixteenth chapter, peoples it, though thinly, with giants ſtill.

However, at their coming, away fly the giants to their caves, to the great diſcontent of Corineus, "to whom it was the greateſt poſſible diverſion to encounter them." To indulge his favourite inclination, he begs "the county of Cornwall for his ſhare, becauſe the giants were in greater number there, than in all the other provinces." Brute obliges him: and an opportunity ſoon arrives to make Corineus very happy.

"Among the reſt there was one deteſtable monſter, named Goemagot, in ſtature 12 cubits (or about 18 feet high), and of ſuch prodigious ſtrength, that at one ſhake he would pull up an oak, as if it had been an hazel wand. One day, when Brute was at Totneſs, this fellow, and 20 more of his companions, fell upon the new-comers, among whom they made a dreadful ſlaughter." This was preciſely what Corineus wanted; for as the other twenty were ſoon diſpatched, Brute ordered "Goemagot to be preſerved alive, out of a deſire to ſee a combat between him and Corineus, who took vaſt pleaſure in ſuch rencounters."

"Overjoyed at this, Corineus threw aſide his arms, and challenged the giant to a wreſtling match;" but a Corniſh hug from the Goliah of Cornwall ſoon broke three of Corineus's ribs, which, we are very circumſtantially told, were two on his right ſide, and one upon his left. But this accident, inſtead of diſabling, "enraged Corineus to ſuch a degree," that though never mentioned but as a mortal man, and of mortal ſize, he ſeized hold of this tremendous giant, "threw him over his ſhoulders as if he had been a hare, ran with him as faſt as he was able for the weight to the next ſhore, nay, got even up to the top of a very high rock, and there hurled down the ſavage monſter into the ſea." "The place where he fell," adds Jeffery, "is called Goemagot's leap to this day."

The above circumſtances preſent a faithful abridgment of the firſt ſixteen chapters of this ancient hiſtory. The firſt patrons of "The Britiſh Hiſtory," defended all its ſtory. The later advocates allow it to contain a few hyperboles, but warmly maintain that it ought not to be wholly rejected on this account. But, unfortunately, the whole hiſtory is in this ſtrain; of this only a few more brief ſpecimens need be given.

Brennus, who beſieged Rome at the head of the Gauls, when Camillus and the geeſe ſaved the capitol, was, according to this hiſtory, a Briton; and his brother Belinus, then king of Britain, was with him. Conan, king of Armorica, wanting wives for his ſoldiers, aſks the king of Cornwall for ſome, who ſends him 11,000 daughters of his nobility, and 60,000 of a meaner ſort. The greater part of theſe are drowned; the reſt are murdered. The magi commanded Vortigern to find a youth who had never had a father, and Merlin is accordingly brought, whoſe mother had a miraculous conception from a demon. The king cannot build a tower, becauſe it is ſwallowed up as faſt as it is raiſed. Merlin foretells, that there is a pond deep under the ground, which occaſions it, and that at the bottom of it are two hollow ſtones, in which two dragons are aſleep. Uther Pendragon, to gratify his paſſion for Igerna, is transformed by Merlin into the figure of her huſband. To crown the whole, Cadwallo being toſſed on a certain iſland, and longing for veniſon, his ſervant Brian goes in ſearch of ſome, but finding none, he cuts out a piece of his own thigh, which he roaſts upon a ſpit, and carries to his maſter as veniſon!!! Whatever may have been the prejudices of former times in favour of the book, every reader will now treat it with deriſion, though he may not chuſe to adopt the quaint phraſeology of the Dutchman, who called it a "groote, grove, lange, dicke, taſtelücke, ende unbeſchaemte logen," which in plain Engliſh is, a great, heavy, long, thick, palpable, and ſhameleſs lie.

The account of Brutus and his Trojans having colonized Britain was in exiſtence before Jeffery. It appears in Nennius, who lived about, or before, the ninth century: his preface is a triumph to the advocates of the Trojan, becauſe it announces that he had taken his hiſtory not only from the Roman annals, the chronicles of the holy fathers, and the hiſtories of the Scots and Saxons, but alſo from the traditions of his anceſtors, and from the monuments of the ancient inhabitants of Britain. On inſpecting his hiſtory, it is curious to remark to what ſources he refers his ſeveral incidents. The tale of Brutus is from the annals of the Romans; and his genealogy up to Æneas, thence to Noah, and thence to Adam, was furniſhed to the chronographer by the traditions and writings of thoſe who firſt inhabited Britain. Unfortunately for the tale, no Roman annals that we know of have ſanctioned the hiſtory of Brute; and we may be allowed to deny that the Druids had any acquaintance with the Jewiſh ſcriptures.

Of other romances on this remote part of our hiſtory; the diſhoneſt forgery of Annius of Viterbo, who made certain annals of Beroſus, and others, in which Samothes, the ſon of Japhet, is ſaid to have led a Celtic colony into Britain; of Albion, a giant, who was ſent after Samothes to give it a name; of the viſits of Hercules and Ulyſſes; of Albina, the princeſs of Syria, and her thirty ſiſters, committed to the mercy of the ſea for murdering their huſbands, who were thrown providentially on England; of Celto, the daughter of Britannos; of Britannus, the grandſon of Nemeth, who brought a colony here out of Ireland, and of ſuch like wild and abſurd inventions, we need only ſay that they are fit to claſs with the hiſtory of Jeffery, and may be permitted to repoſe in oblivion, as proper companions to his Brute and Corineus. To the ſame grave may be conſigned all thoſe writers who have waſted their time in deriving the Britons from Japhet, from Gomer, from Javan, from Thiras, from Aſkenaz, or from Shem. Such derivations are as unreaſonable as the ſpeculation of the man who affirmed that the earth was divided between the three ſons of one father as a typical repreſentative of the divine Trinity.

The only accounts that can be fully relied on for the early hiſtory of the European nations, are thoſe which the Roman and Grecian writers have tranſmitted to us. Even their ſtatements frequently demand our criticiſm, but we muſt dig for truth in their mines.

From the extent of geographical knowledge which Homer diſplays, we might not unreaſonably expect to find ſome alluſion to the Britiſh iſlands in his works; but although he mentions with familiarity Italy, Sicily, Greece, Theſſaly, Epirus, with ſome adjacent countries, and by Strabo and later authors, has been thought to allude to Spain, no other part of Europe is explicitly commemorated in his Epopeas.

One of the oldeſt Greek books which contains any alluſion to the Britiſh iſlands, is the Argonautica aſcribed to Orpheus. The celebrated perſon of this name lived anterior to Homer; but the poems that paſs under his name, are by Suidas and Stobæus attributed to a man whom they call Orpheus the younger, and whom others name Onomacritus. He has been referred to the times of Piſiſtratus, or about 560 years before Chriſt.

This poem is curious as a ſpecimen of the geographical opinions which the author and his cotemporaries entertained of the weſtern part of Europe. It was a voyage from Theſſaly to Colchis on the eaſtern part of the Euxine. But the part moſt intereſting to us, is the manner in which theſe adventurers are ſtated to have returned home; for, inſtead of tracing back their courſe to Colchis, the difference of which was comparatively ſmall, they ſail to the Palus Mæotis, or Sea of Aſoph, thence up the lands to the northern ocean, and after circumnavigating Europe, arrived at laſt at their deſtined port. So little was Europe known at this early period, that it was fancied to have been poſſible to have ſailed from the Euxine ſea into the Hyperborean ocean.

Whoever reads this compoſition, from verſe 1053 to 1295, though he may be entertained with the romantic fable of the Macrobians, who are ſeated in the icy ocean, and who, after living 1000 years in the moſt active exertions of wiſdom and juſtice, void of labour and law, ſink from uninterrupted felicity, into a gentle, but perpetual ſleep; yet he will need no further evidence to convince him, that the author was wholly ignorant of the continent of Europe. It is indeed ſingular, that he mentions the iſland Iernida, which is preſumed to be Ireland, and which the Argonauts paſs with apprehenſion in their voyage from the North ſea. But this is not mentioned with the accuracy of a man who knew what he was writing about, or elſe Britain, and not Ireland, would have been commemorated; for though Camden thinks that the iſland next mentioned under the name of Πευκηεσσαν, or Piceis Obſitam, was Britain, this cannot be the fact, becauſe, after they had left Iernida, they were toſſed by a furious tempeſt for twelve days before Lynceus diſcerned the iſland Πευκηεσσαν. It is remarkable, that in oppoſition to all the mythologiſts, the author makes this iſland in the Atlantic to have been the reſidence of Ceres, and the place from which Proſerpine was carried off by Pluto. With equal peculiarity he makes another iſland in the ſame ſea, which he calls λυκαιον χερσον; and which Camden, by a ſtrange error, thought to be the ſame as the former, though three days ſail from the habitation of Circe. The geographical miſtakes of this author are worthy of notice, becauſe the man who aſpired to write in the celebrated name of Orpheus, is not likely to have been the moſt ignorant of his contemporaries.

About 450 years before Chriſt, Herodotus, the father of hiſtory, flouriſhed. Greece was then ſo deſtitute of knowledge, that, like many of his countrymen who poſſeſſed activity and energy of intellect, he travelled to Tyre, Egypt, and Aſſyria, in ſearch of the information which theſe countries in his days almoſt excluſively poſſeſſed. His compoſition ſeems to indicate that he made geographical ſubjects a principal object of inquiry; and he ſought for it at thoſe places where it was moſt likely to be obtained. The ſituation of Greece, which on its eaſtern ſide lies parallel with Aſia Minor, and had frequent intercourſe with Egypt, Phœnicia, Sicily, and that part of the Italian peninſula which now compoſes the kingdom of Naples, introduced him to an acquaintance with the three continents. It is therefore, if any where, in his works, that we may reaſonably expect to find the moſt accurate collection of the facts which were then known concerning the population of Europe, and of the Britiſh iſlands.

But when we take up the hiſtory of Herodotus, which gained the Olympic laurel, we perceive that no regions were at that time known, (with only one exception, which we ſhall hereafter notice,) except thoſe which military horrors had explored. He is accurate about the tribes or nations that ſwarmed round the weſtern ſhores of the Euxine from the modern Conſtantinople to the ſea of Aſoph, becauſe Darius had proſecuted a wild expedition againſt the Scythians who dwelt there. But the hiſtorian fails where the Perſian deſpot was checked; or, if he indulges ſome haſty excurſions beyond, it is only to repeat tales ſo abſurd, that the credit of his whole hiſtory has been impeached from his Scythic reveries. In other parts of the world, wherever the nations warred whoſe tranſactions he records, he ſeems anxious to be minute and faithful; but every other country which the glitter of arms had not revealed, he did not condeſcend, becauſe he was unable, to deſcribe.

It is, perhaps, from this circumſtance, that when we turn from Greece, and the adjacent kingdoms, and extend with national partiality our view weſtward over the regions, now divided into Spain, France, Germany, the Northern empire, and the Britiſh iſlands, we find the hiſtorian lamenting, but ingenuouſly confeſſing, the penury of his information.

"I have nothing certain to relate concerning the weſtern boundaries of Europe. I know as little of the iſlands called Caſſiterides, from the tin which is thence imported among us; and though I have diligently inquired, yet have I never ſeen any man who by his own experience could inform me of the nature of that ſea which bounds the extremities of Europe; however, it is certain that amber and tin come from its remoteſt parts."

The ignorance of Herodotus muſt have been the ignorance of his age; for it ſeems to have by no means proceeded from his neglect of inquiry. "Europe has not been fully diſcovered by any man; and we have no account whether it be bounded on the north and eaſt ſide by the ſea."

About 120 years after Herodotus, the preceptor of Alexander flouriſhed, who reigned for ſo many ages in Europe the monarch of metaphyſics. A treatiſe has been preſerved to us, which is uſually attributed to him; but to which his right has been diſputed by men whoſe erudition is formidable enough to leave the queſtion undecided, even by thoſe whom their arguments may not convince. If the circumſtance that aſſerts the claim of Ariſtotle appeared unſatisfactory to the two Scaligers, to Caſaubon, Salmaſius, Menage, Voſſius, and others, we cannot but be, at leaſt, doubtful on the ſubject. By theſe gentlemen it has been given to Theophraſtus, or to Anaximenes of Lampſachus, or to the ſtoic Poſidonius. But whether the book "De Mundo" be the compoſition of Ariſtotle, or of ſome of his contemporaries, or of his immediate ſucceſſors, or even of later writers, it is, under every opinion, a proper ſubject for our preſent conſideration. It ſeems to be a phyſiological account of the univerſe; but it alſo contains a very rapid and conciſe ſurvey of the geography of the world. If it was written in the age of Ariſtotle, it will ſhew how little the geographers of thoſe times knew. If it be of later date, it will prove that lapſe of time gave no increaſe of knowledge.

After a ſingular conjecture, which Columbus has ſince happily demonſtrated to be juſt, that beyond the Atlantic there were other continents, ſome larger, ſome ſmaller than our own, he deſcribes the coaſts which the ocean, as he thought, waſhed; and after conducting the ſea from the weſtward through the ſtreights of Gibraltar to the Propontis, he ſtates its progreſs from the eaſtern regions. He tells us, that it comes towards the Gallic gulph, and thence to the columns of Hercules.

"In this ſea are two iſlands, called βρετανικαι, αλβιον και Ιέρνη, larger than thoſe we named above. They are directly above the Celts."

Theſe curious paſſages deſerve a moment's conſideration. Of Europe this geographer knew that the northern parts were inhabited by the Scythians, and the weſtern by the Celts; and that beyond the Celts were two iſlands called Bretanikai, whoſe names were Albion and Hierna.

This is the earlieſt author in which the Britiſh iſlands are explicitly named.

That the Britiſh iſlands were known to the ancient world long before the time of Cæſar, may be inferred from the paſſage in Polybius, which mentions them. This author lived about 200 years before the Chriſtian era. He enjoyed the confidence of Scipio and Lelius; and when he determined to write hiſtory, he made many journies to the parts which he intended to deſcribe.

In the latter part of his third book, he promiſed to write concerning the βρεττανικων νησων, the Britiſh iſlands, and the making of tin. Unfortunately for our curioſity, this treatiſe has not reached us. It is certain that he compoſed it, becauſe Strabo mentions his diſcuſſions concerning Britain. Three other Grecians alſo wrote concerning Britain. Theſe were Pytheas, Dicæarchus, and the celebrated Eratoſthenes, who all lived anterior to Polybius, and whoſe opinions about our iſland Polybius compared and diſputed.

Thus we find that Britain was an iſland which had obtained much notice among the Grecians. We may alſo perceive, from ſome intimations of the claſſical writers, that the Britiſh iſlands had been diſcovered and viſited by the Phœnicians and Carthaginians.

There ſeems to be no reaſon to doubt that the Caſſiterides were another name for the Britiſh iſlands. Pliny ſays, that Midacritus firſt brought tin from theſe iſlands; and Strabo acquaints us that the Phœnicians had been long accuſtomed to viſit the Caſſiterides from Spain for the ſake of traffic; but concealing their courſe from others. He gives a ſtriking inſtance of their effort to conceal the navigation to our iſlands. When the Romans followed a Phœnician ſhip bound thither, for the expreſs purpoſe of diſcovering the market, the maſter ran his ſhip aſhore, and deſtroyed it, rather than let them trace his courſe; and he was indemnified by his countrymen for the loſs out of the public treaſury. But the Romans, by frequent attempts, at laſt obtained the knowledge which they ſought.

Bochart derives Bretanike, the Greek name for Britain, from the Phœnician or Hebrew words ברת־אנך, Barat-anac, the land of tin. Caſſiteros, the Greek for tin, from which the iſlands were called Caſſiterides, he alſo compares, with much ingenuity, with the Chaldee Kiſtaræ and Kiſtira, by which the Targums of Jonathan and Jeruſalem render the Greek word κασσιτερος.

It was the invaſion of Cæſar, about 54 years before Chriſt, which brought the Romans firſt acquainted with the natives of Britain. Cæſar, ambitious of attaining the higheſt diſtinction in the Roman ſtate, applied himſelf to warfare, as the ſureſt means of raiſing an exalted reputation, and of creating a ſolid power. With this view he attacked, and conquered the Gauls; and in proſecution of the ſame purpoſe he invaded Britain.

Not being well acquainted with the harbours of the iſland, he ſent C. Voluſenus in a veſſel to explore them. The natives, at firſt alarmed at his preparations and threats, ſent overtures of peace, Cæſar received them civilly, but perſiſted in his invaſion. After five days abſence, Voluſenus arrived at Cæſar's ſtation, and reported his obſervations. Cæſar embarked two legions of foot in about eighty tranſports; and with theſe, and eighteen more for the reſt of his army, he ſailed towards Britain.

He arrived at a part inconvenient for landing from its mountainous aſpect, and beheld the rocks covered with the armed inhabitants. He remained five hours at anchor, waiting for the arrival of his whole force; and when the wind and tide ſerved, he ſailed out about eight miles farther to a plain and open ſhore.

The Britons ſent their horſe and chariots to oppoſe his landing, and all their forces followed. A ſevere conteſt enſued. The Roman veſſels were too large for the ſhallow ſea, and their ſoldiers were obliged to leap into the waves in unknown places, and with heavy armour, and to conflict with the active natives, who were well acquainted with the coaſt, and zealous in their oppoſition. At laſt the Roman gallies brought their engines to bear againſt the Britons. Their appearance and effect checked the brave ſavages, and the ſtandard-bearer of the tenth legion, at that critical moment, ruſhing with his eagle towards the enemy, the Romans followed with new courage, and, after a deſperate ſtruggle, compelled the Britons to retire.

This defeat occaſioned new propoſals of pacification, which were broken, and the ſtruggle recommenced. The Britons were repulſed again, but Cæſar choſe to abandon all further efforts to conquer the iſland, and returned to the continent.

In the following year he invaded the iſland again. The natives vigorouſly oppoſed him under the command of Caſſivellaun. They experienced defeats, but their reſiſtance was too fierce for the Romans to ſupport, and Cæſar again withdrew from the iſland, having ſhewn the iſland to the Romans, (ſays Tacitus,) but not having conquered it.

The Britons remained unmoleſted by any attacks from the Romans till the reign of Claudius, at which period, unfortunately for their independence, but perhaps happily for their civilization, they were invaded by Aulus Plautius. Divided by civil feuds, and no longer oppoſing to the Romans that union of will and power by which they had baffled the genius of Cæſar; the ſeparate exertions of their various tribes were generally diſaſtrous, and the ſtruggle ended in the complete conqueſt of the iſland. The events of this conflict are chiefly recorded at great length by Tacitus, and are too familiarly known to us to be recited here. In the third and fourth centuries Britain gave ſome diſturbance to the Roman empire, by the turbulence of that part of the Roman army which was ſtationed within it. At various intervals they made ſome of their favourite officers emperors, who contended for the purple with the other competitors. In theſe centuries Britain was much diſtreſſed by the incurſions of the Picts and Scots on the north and weſt, and by the Franks and Saxons from the ſea. At laſt the barbarians preſſed ſo vigorouſly on the Roman empire, that the Roman forces were compelled to abandon Britain in 409, and the iſland for a ſhort time recovered its independence, to loſe it again on the triumphant invaſions of the Saxons. See Saxons.

Britain, *New*, in *Geography*, an appellation which has been appropriated, by ſome geographers, to the moſt northern regions towards Hudſon's bay, and the coaſt of Labrador, and comprehending the whole tract of country that lies north of Canada, commonly called the Eſquimaux country, including Labrador, New North and South Wales; ſaid to be 850 miles long and 750 broad. This is in general a mountainous, frozen, and barren country; abounding with lakes, rivers, and bays, that furniſh plenty of fiſh. The fiſhery and the fur-trade are the only products of this country that render it valuable. It is very thinly inhabited by a people reſembling the Laplanders, and the other nations in the north-weſtern parts of Europe, from whence their anceſtors probably migrated. But the name of New Britain is not admitted in French or Engliſh maps. See Hudson's *Bay*, and Labrador.

Britain, *New*, an iſland, or rather a group of iſlands, in the Pacific ocean, being a part of that extenſive tract denominated AUSTRALASIA. It was firſt explored and named by Dampier, who paſſed a ſtrait called after his name, between this territory and Papua, or New Guinea. In 1767 capt. Carteret navigated a channel that lies between New Britain and New Ireland; and he called its north point Cape Stephens, its eaſt point Cape Orford, and a bay about the middle of its eaſtern coaſt Port Montague. This land was ſeen by Roggewein's ſquadron in 1722; and by M. de Bougainville in 1768. Dampier, who viſited the bay ſince called Port Montague in 1700, found the land mountainous and woody, but interſperſed with fertile vales and beautiful ſtreams. The country ſeemed very populous, the natives reſembling thoſe of Papua, and navigating their canoes with great ſkill. The chief product ſeemed to be cocoa nuts, but there were yams, and other roots, particularly ginger; and the ſea and rivers ſwarmed with fiſh. In the main land, and adjacent iſles, there are ſeveral volcanoes. A Spaniſh frigate, called the Princeſſa, ſailed from Manilla, towards the cloſe of the year 1780, for San Blas in California; and having, in her way thither, fallen in with ſome of the iſlands which form the northern part of the group called New Britain, ſhe diſcovered, on the 20th of January 1781, nine ſmall iſlands, covered with palm trees, ſurrounded by a ſand bank, and forming within themſelves a lagoon, or pond of ſtill water, and agreeing, in every other reſpect, with the deſcription which is given by Valentin of Ontong Java, diſcovered by Le Maire and Schouten in 1616. The latitude of the ſouthern part of this cluſter of iſlands was obſerved to be 4° 53′ S. New Britain lies between 4° and 6° 50′ S. lat. and 148° 20′ and 151° 20′ E. long.

BRITANNIC PLAGUE, in *Medicine*. See SWEATING-SICKNESS.

BRITANNICA, in *Botany*. See RUMEX *Aquaticus*, or HYDROLAPATHUM.

BRITANNICO, JOHN, in *Biography*, an eminent Italian ſcholar of the 15th century, was born in the Breſcian territory, of a family originally from Great Britain; and having ſtudied at Padua about the year 1470, kept ſchool at Breſcia, and diſtinguiſhed himſelf by ſeveral learned annotations on various claſſic authors, particularly Juvenal, Horace, Perſius, and Statius in his Achilleid. He alſo wrote grammatical and other tracts, and an eulogy on Bartholomew Cajetano. He is ſuppoſed not to have long ſurvived the year 1518, and did not live to publiſh his notes upon Pliny's Natural Hiſtory.

BRITANNICUS *Codex Eraſmi*, in *Biblical Hiſtory*, a MS. copy of the New Teſtament, which is one of the two MSS. (the *Codex Ravianus* being the other) that contain the diſputed paſſage of the three that bear record in heaven, 1 John, v. 7. This MS. is probably the ſame with that denominated Montfortianus and Dublinenſis, noted 61 in the firſt part of Wetſtein's N. T. in the ſecond 40, and in the third 34. It is of the 12mo ſize, contains the whole N. T. is written on a thick glazed paper, and not on vellum, in a modern hand, and is probably of the 16th century. Mill relates, that it belonged originally to one Froy, a Franciſcan friar, who poſſeſſed it either about or before the middle of the 16th century; a few years previous to which period, that is, between 1519 and 1522, it was known to Eraſmus by the name of "Codex Britannicus." From Froy it came into the poſſeſſion of Thomas Clement, probably a doctor of philoſophy and medicine in England; from him it came into the hands of William Chare, a learned Greek ſcholar; after Chare, it was poſſeſſed by Dr. Thomas Montfort, and from him took its name, becauſe it belonged to him when it was collated for the London Polyglot; and ſince the time of Uſher, who had it after Montfort, it has been preſerved in the library of Trinity-college in Dublin, where it is noted G. 97; and hence it is ſometimes called Dublinenſis. As Eraſmus, in the two firſt editions of his Greek Teſtament, omitted 1 John, v. 7. but in the later editions inſerted it, becauſe he had found it, as he relates, in a Codex Britannicus, it has been concluded, with a very great degree of probability, that the Montfortianus is the ſame as the Britannicus of Eraſmus; becauſe, though every MS. in Great Britain has been carefully ſearched, this is the only one which contains the paſſage in queſtion. In proof of this it is ſtrongly urged, that the text of the third edition of Eraſmus, in 1522, differs in this interpolated paſſage from all other editions, except thoſe which were immediately copied from it, and at the ſame time agrees word for word with the Codex Montfortianus. Although no critic would aſcribe a high antiquity to the Cod. Montf. we have no reaſon to ſuſpect that it is a mere tranſcript from the Complutenſian Polyglot, which is ſaid to be the caſe with reſpect to the Codex Ravianus. For the difference is ſtrongly marked in numerous paſſages, and even the text in queſtion, for which this MS. is famous, is not the ſame as in that Polyglot. Eraſmus deſcribes the Codex Britannicus as a Latinizing MS.; and Wetſtein entertains the ſame opinion with regard to the Montfortianus, of which the paſſage in queſtion, 1 John, v. 7. affords the ſtrongeſt proof; for in the Cod. Montf. it not only differs from the uſual text, but is written in ſuch Greek as manifeſtly betrays a tranſlation from the Latin. For the ſatisfaction of thoſe who may not have acceſs to other means of information, we ſhall give it below, with all the abbreviations, as it is given by Travis, in his letters to Gibbon, p. 153.

Οτϊ τρεϊς εϊσϊν οϊ μαρτῦ
ρουντ᾽ εν τω ουνω, ϖηρ, λογος, καϊ πνα αγϊον
καϊ οϋτοϊ οϊ τρεϊς εν εϊσϊ
Καϊ τρεϊς εϊσϊν οϊ μαρτῦ
ρουντ᾽ εν τῃ γῃ, ϖνα, υδωρ καϊ αϊμα.

Here the article is omitted before the words expreſſive of Father, Son, and Holy Ghoſt, becauſe there is no article in the Latin, and it occurred not to the tranſlator, that the uſual Greek was ο πατηρ, ο λογος, το ϖνευμα. He has alſo εν τη γη, which is falſe Greek, for επι της γης, becauſe he found in the Latin, in terra. He has likewiſe omitted και οι τρεις εις το εν εισιν, which is wanting in many Latin MSS. becauſe the Lateran council, held in 1215, had rejected it through polemical motives. The omiſſion of this clauſe at the end of the 8th verſe proves, not only that the writer of the Codex Montfortianus copied from the Vulgate, becauſe no ancient Greek MS. omits the clauſe in that place, but that he copied even from modern tranſcripts of the Vulgate, becauſe this final clauſe is found in all the MSS. of the Vulgate, written before the 13th century. It is further alleged, that πνευμα, in the 6th verſe, is altered to χριστος, becauſe chriſtus is the reading of the Vulgate, though it is not found in any Greek MS. Beſides, in this MS. the Latin arrangement is obſerved with regard to the diviſion of the text into chapters, though at the ſame time the κεφαλαια of Euſebius are noted. This Latin arrangement was introduced by Hugo de S. Caro, in the 12th century, and is that of our printed Bibles; but though obſerved in the modern MSS. of the Vulgate, it was in general not admitted into the Greek MSS. which adhered to the κεφαλαια of Euſebius. Its admiſſion, therefore, into the Codex Montf. not only ſhews what influence the Vulgate has had in this MS. but proves, at the ſame time, independently of other arguments, that the Codex Montf. is very modern. For no Greek MS. is known, in which the text is divided into our preſent chapters, that was written before the 15th century; when the Greeks, who fled from their own country into the weſt of Europe, became tranſcribers for the members of the Latin church, and of courſe adopted the Latin diviſions. Moreover, the dots over the ι and υ, which have been urged in favour of the antiquity of this MS. on the authority of Montfaucon, who, in his

“Palæographia,” had ſaid that theſe dots were in uſe a thouſand years ago, are likewiſe uſed in the moſt modern MSS. (ſee the ſame Palæographia, p. 324. 333.); and therefore, ſo far from being a proof of antiquity, they are uſed as an argument to prove, that the Cod. Montf. is very modern. No one MS. written in ſmall letters, among the ſpecimens produced by Montfaucon, before the 12th century, has theſe dots. As theſe letters, ι and υ, are always dotted in the Cod. Montf., but not always in the MSS. of the 13th and 14th centuries, and ſtill leſs often in thoſe of the 12th century, we may infer that the Codex Montfortianus is at leaſt as modern as the 15th century. Michaelis's Int. to the N. T. by Marſh, vol. ii.

BRITANY, or Bretagne, in *Geography*, was, before the revolution, a conſiderable province of France, with the title of a duchy, reunited to the crown by Francis I. in 1532. It derived its name from the Britons, by whom it was chiefly inhabited, when they were driven from their own country by the Saxons, and ſought refuge in that part of Gaul called *Armorica*, which ſee. This province forms a kind of peninſula, bounded on the north, weſt, and ſouth by the ſea, and on the eaſt by Maine and Anjou. Its mean length is eſtimated at 57 leagues, and its breadth at about 33: its extent of coaſt was computed at about 150 leagues, containing a conſiderable number of bays and good ports. Its navigable rivers are the Loire and the Vilaine, united with the Drance by means of a canal between Rennes and Dijon. The other rivers are the Ardre, the Iſle, the Men, the Borneau, the Claye, and the Aden, which diſcharge themſelves into the ocean. The climate is temperate; and the ſoil, which is generally gravel or gravelly ſand, with low ridges of granite, is diverſified with hills and plains; and extenſive heaths, reſembling Cornwall in its appearance, in ſome places covered with foreſts of wood, and in others well cultivated, and producing wheat, hemp, flax, &c. Numerous herds of cattle are bred and fatted in the paſtures; game and fiſh are plentiful; cider is the ordinary drink of the inhabitants, and ſome parts produce wines and brandy. In ſome diſtricts of this province there are mineral ſprings, and mines of iron, lead, and coal. The character of the Britons is rough and choleric; but they are brave, good ſoldiers, and excellent ſeamen. The commerce of this province is conſiderable, and conſiſts of a variety of articles, recited under its principal towns. By the new arrangement, Bretagne forms the departments of the Ille and Vilaine, the North-coaſts, Finiſterre, Morbihan, and Lower Loire.

BRITE, in *Agriculture*, a term applied to hops, when they are over-ripe or ſhatter; in which caſe they are ſaid to *brite*.

BRITISH America, in *Geography*. See America.

British *Coin*. See Coin.

British *Conſtitution*. See Constitution.

British *Crown*. See Crown.

British *Iſlands*, in *Geography*, are thoſe which are adjacent to the Britiſh coaſts, and ſubject to the crown of Great Britain. Of theſe a geographical deſcription, and other particulars relating to them, will be found under their reſpective names. We ſhall here only obſerve, that ſome of them, as the iſle of Wight, of Portland, of Thanet, &c. are compriſed in ſome neighbouring county, and are therefore to be looked upon, in a legal point of view, as annexed to the mother iſland, and part of the kingdom of England. As to others that require more particular conſideration, ſee *Iſle* of Man, Alderney, &c.

British *Language*. The language of the ancient Britons, when they were firſt invaded by the Romans, was a dialect of the Celtic; which had been the language of all the nations of Europe deſcended from Gomer, and ſtill continued to be ſpoken by the people of Gaul, and ſeveral other countries. This is undeniably evident (ſays Dr. Henry, Hiſt. vol. ii. p. 336.) from the nature and reaſon of things; from the teſtimony of ancient authors; from the names of rivers, lakes, mountains, &c. in Britain being ſignificant and deſcriptive in the Celtic tongue; and from the remains of that moſt ancient and venerable language in ſome parts of Britain, as well as in ſome countries on the continent. See Wales.

BRITO, Bernard de, in *Biography*, a Portugueſe hiſtorian and elegant writer, was born at Almeida in 1569, and having entered into the order of Ciſtercians, was ſent to purſue his ſtudies in Italy. On his return he was appointed principal hiſtoriographer for Portugal, and was the firſt writer who undertook a general hiſtory of that country; of which, under the title of “Monarchia Luſitana,” he publiſhed one volume in 1597, and a ſecond in 1609. The work was continued by fathers Antony and Francis Brandano to ſeven volumes folio; the laſt of which was printed at Liſbon in 1612. Brito alſo wrote “Eulogies of the Kings of Portugal, with their Portraits;” “Ancient Geography of Portugal;” and “Chronicle of the Ciſtercian Order.” He died in 1617. Nouv. Dict. Hiſt.

BRITOLAGÆ, in *Ancient Geography*, a people who, according to Ptolemy, inhabited Lower Mœſia, towards the mouth of the Danube.

BRITTEN, in *Geography*, an iſland in the Frozen ocean, near the ſouth-weſt coaſt of Nova-Zembla. N. lat. 71° 6′. E. long. 55° 14′.

BRITTLENESS, in *Natural Philoſophy*, that quality of bodies by which they are ſoon and eaſily broken by preſſure or percuſſion. It ſtands oppoſed to tenacity.

Brittle bodies are extremely hard; the leaſt percuſſion exerts a force on them equivalent to the greateſt preſſure, and may conſequently eaſily break them. This effect is particularly remarkable in glaſs ſuddenly cooled, the brittleneſs of which is thereby much increaſed. Tin, though in itſelf tough, gives a brittleneſs to all the other metals, when mixed therewith. The brittleneſs of glaſs ſeems to ariſe from the heterogeneity of the parts whereof it is compoſed, ſalt and ſand, which can never bind intimately together.

In timber, brittleneſs ſeems to be connected with durableneſs; the more brittle any ſort of wood is, the more laſting it is found. Thus it is oak is of ſo long duration, while beech and birch, as being tough, preſently rot, and are of little ſervice for building.

Brittleness *of the hoof*, in horſes. See Hoof.

BRITTON, Thomas, in *Biography*, the muſical ſmall-coal man. This was an ingenious, innoxious, and humble man, of a profeſſion which no longer ſubſiſts. Not only the uſe, but even the name of ſmall-coal is hardly known at preſent. Dr. Johnſon defines it: “Small-coal, little wood coals, uſed to light fires;” and illuſtrates the word from the Spectator, and Gay.

“A ſmall-coal man, by waking one of theſe diſtreſſed gentlemen, ſaved him from ten years impriſonment.” Spectator.

> “When ſmall-coal murmurs in the hoarſer throat,
> From ſmutty dangers guard thy threatened coat.”
> Gay's Trivia.

In our own memory, ſmall-coal was daily cried about the ſtreets, and of general uſe in the capital at leaſt, in kindling fires.

Britton was a great favourite of Hearne, the antiquary, whom he much reſembled in his fondneſs for old things, and who has given a long account of him in the appendix to “Homingi Chartularium Eccleſiæ Wigornienſis,” and informs us, that Britton was born at or near Higham Ferrers, in Northamptonſhire, from which place he went to London, where he bound himſelf apprentice to a ſmall-coal man. After he had ſerved his full time of ſeven years, his maſter gave him a ſum of money not to ſet up. Upon this, Tom went into Northamptonſhire again, and after he had ſpent his money, he returned, and ſet up a ſmall-coal trade, though his maſter was ſtill living, taking a ſtable in Clerkenwell, which he turned into a houſe. This ſeems the only diſhonourable action with which Tom could ever be charged.

Some time after he had been ſettled in buſineſs here, he became acquainted with Dr. Garaniere, his neighbour, an eminent chemiſt, who admitting him into his laboratory, Tom, with the doctor's conſent and his own obſervation, ſoon became a notable chemiſt, contrived, and built himſelf a moving laboratory, in which, according to Hearne, "he performed with little expence and trouble, ſuch things as had never been done before."

Beſides his great ſkill in chemiſtry, he became a practical, and, as was thought, a theoretical muſician. Tradition only informs us, that he was very fond of muſic, and that he was able to perform on the viol da gamba at his own concerts, which he at firſt eſtabliſhed gratis in his miſerable houſe, which was an old mean building, the ground-floor of which was a repoſitory for his ſmall-coal; over this was his concert-room, long, low, and narrow, to which there was no other aſcent than by a pair of ſtairs on the outſide, ſo perpendicular and narrow, as ſcarcely to be mounted without crawling.

Hearne allows him to have been a very diligent collector of old books of all kinds, which, in his courſes through the town crying his ſmall-coal, he had a good opportunity of doing at ſtalls, where he uſed to ſtop and ſelect for purchaſe whatever was ancient, particularly on his two favourite ſubjects of chemiſtry and muſic. On the former, it has naturally been ſuggeſted, that he had picked up books on Roſycrucian myſteries, and not impoſſible, but that he may have waſted ſome of his ſmall-coals in the great ſecrets of alchymy in the tranſmutation of metals.

With reſpect to muſic, he collected all the elementary books in Engliſh that were then extant: ſuch as Morley's introduction, Simpſon's diviſion violiſt, Playford, Butler, Bath, and Mace; nine books of inſtruction for the pſalmody, flute, and mock trumpet. But beſides his vaſt collection of printed muſic, the catalogue of which fills eight pages in 4to. of ſir J. Hawkins's hiſt. of muſic, he ſeems to have been ſuch an indefatigable copyiſt, that he is ſaid to have tranſcribed with his own hand, very neatly and accurately, a collection of muſic which ſold after his deceaſe for near 100l.

Mr. Walpole, in his anecdotes, ſays, that "Woolaſton the painter, who was a good performer on the violin and flute, had played at the concert held at the houſe of that extraordinary perſon, Thomas Britton the ſmall-coal man, whoſe picture he twice drew, one of which was purchaſed by ſir Hans Sloane, and is now in the Britiſh muſeum: there is a mezzotinto from it. T. Britton, who made much noiſe in his time, conſidering his low ſtation and trade, was a collector of all ſorts of curioſities, particularly drawings, prints, books, manuſcripts on uncommon ſubjects, as myſtic divinity, the philoſopher's ſtone, judicial aſtrology, and magic; and muſical inſtruments, both in and out of vogue. Various were the opinions concerning him: ſome thought his muſical aſſembly only a cover for ſeditious meetings; others, for magical purpoſes. He was taken for an atheiſt, a preſbyterian, a jeſuit. But Woolaſton the painter, and the ſon of a gentleman, who had likewiſe been a member of that club, averred it as their opinions, that Britton was a plain, ſimple, honeſt man, who only meant to amuſe himſelf. The ſubſcription was but ten ſhillings a year; Britton found the inſtruments, and they had coffee at a penny a diſh. Sir Hans Sloane bought many of his books and MSS. now in the muſeum, when they were ſold by auction at Tom's coffee-houſe near Ludgate."

We have in early life converſed with members of this concert, who ſpoke of him in the ſame manner. So late as the middle of the laſt century, mezzotinto prints of him were in all the print ſhops, particularly an excellent one by Smith, under which, and almoſt all the prints of Britton, were the following verſes by Hughes, who frequently performed on the violin at the concerts of this ingenious ſmall-coal man.

> "Though mean thy rank, yet in thy humble cell
> Did gentle peace and arts, unpurchaſed, dwell;
> Well pleaſed Apollo thither led his train,
> And muſic warbled in her ſweeteſt ſtrain.
> Cyllenius ſo, as fables tell, and Jove,
> Came willing gueſts to poor Philemon's grove.
> Let uſeleſs pomp behold, and bluſh to find,
> So low a ſtation, ſuch a liberal mind."

In moſt of the prints, he was repreſented with his ſack of ſmall-coal on his ſhoulder, and his meaſure of retail in his hand.

In the Guardian, N° 144, Steele, ſpeaking of the variety of original and odd characters, which our free government produces, ſays: "We have a ſmall-coal man, who beginning with two plain notes, which made up his daily cry, has made himſelf maſter of the whole compaſs of the gammut, and has frequent concerts of muſic at his own houſe, for the entertainment of himſelf and friends."

But the aſſertion of ſir John Hawkins, that Britton was the firſt who had a meeting that correſponded with the idea of a concert, is not correct: in the time of Charles I. and during the uſurpation, at Oxford, meetings for the performance of *Fancies* in ſix and ſeven parts, which preceded ſonatas and concerts, were very common. And in Charles the Second's time, Baniſter, father and ſon, had concerts, firſt at taverns and public houſes, and afterwards at York buildings.

It is, perhaps, not a matter worthy of diſpute; but we imagine, that it would be difficult to prove that Handel ever played at the ſmall-coal man's concert. Handel was proud, and never had much reſpect for Engliſh compoſers. He had been careſſed and patronized by princes and nobles ſo long, that he would as ſoon have gone into a coal pit to play at a concert, as to the hovel of our vender of ſmall-coal.

About the commencement of the laſt century, a paſſion prevailed among ſeveral perſons of diſtinction, of collecting old books and MSS.: and it was their Saturday's amuſement during winter, to ramble through various quarters of the town in purſuit of theſe treaſures. The earls of Oxford, Pembroke, Sunderland, and Winchelſea, and the duke of Devonſhire, were of this party, and Mr. Bagford and other collectors aſſiſted them in their reſearches. Britton appears to have been employed by them; and as he was a very modeſt, decent, and unpreſuming man, he was a ſharer in their converſation, when they met after their morning's walk, at a bookſeller's ſhop in Ave-Maria lane. Britton uſed to pitch his coal ſack on a bulk at the door, and dreſſed in his blue frock, to ſtep in and ſpend an hour with the company. But it was not only by a few literary lords that his acquaintance was cultivated; his humble roof was frequented by aſſemblies of the fair and the gay; and his fondneſs for muſic cauſed him to be known by many dilettanti and profeſſors, who formed themſelves into a club at his houſe, where capital pieces were played by ſome of the firſt profeſſional artiſts, and other practitioners; and here Dubourg, when a child, played, ſtanding upon a joint-ſtool, the firſt ſolo that he ever executed in public.

We cannot terminate this article better than from Dr. Aikin's account of Britton. (Gen. Biog.) The circumſtances of his death were as extraordinary as thoſe of his life, if the ſtory is to be credited. A ventriloquiſt was introduced into his company by an acquaintance who was fond of miſchievous jeſts. This man, in a voice, ſeemingly coming from a diſtance, announced to poor Britton his approaching end, and bid him prepare for it, by repeating the Lord's prayer on his knees. Britton, whoſe myſtical and magical books, had probably made him credulous, obeyed the injunction; went home, took to his bed, and actually died in a few days. This was in September 1714. He was buried with a very reſpectful attendance in Clerkenwell church-yard.

BRITUIN, in *Geography*, a cape on the weſt coaſt of Nova Zembla. N. lat. 74° 40°. E. long. 52° 14'.

BRIVA *Iſaræ*, in *Ancient Geography*, a place of Gaul, on the Iſara or Oiſe, a little north of its confluence with the Sequana or Seine.

BRIVAS, a place of Gaul, belonging to the Averni, upon the Elaver or Allier, a little north of Condate: famous as the burial place of St. Julian, near which the emperor Avitus was interred in 456. See Brioude.

BRIVATESPORTUS, or Gesobrivate, *le Croiſic*, a place of Gaul, at the mouth of the Loire, near its union with the river Herius or Vilaine, according to Ptolemy.

BRIUEGA, or Brioca, in *Geography*, a ſmall town of Spain, in Caſtile, ſeated on the Tajuna, having a caſtle. It trades in wool and ſtuffs. In 1710, general Stanhope, commander of the Engliſh forces, was obliged to ſurrender himſelf and his men priſoners of war at this place.

BRIVES, a town of France, and principal place of a diſtrict, in the department of Correze, ſituate in a fertile valley on the Correze; 4 leagues S. W. of Tulle. The place contains 5762, and the canton 13,685 inhabitants: the territory comprehends 195 kiliometres, and 11 communes. This is a conſiderable place, lively, and very populous. The ſurrounding country produces wine, and nut oil, and abounds in wood. The town has ſome manufactures, and is adorned by many neat churches. N. lat. 45° 10'. E. long. 1° 40'.

BRIVESAC, a town of France, in the department of the Correze; 6 leagues E. of Brives.

BRIVIO, Giovanni, in *Biography*, an Italian ſinging maſter, and compoſer of Milan, where he opened a ſinging-ſchool in 1730. The celebrated Salimbeni, Appianini, and Mancini, were his ſcholars; as was Giulia Fraſi, who was ſo long a favourite ſinger in England, and who, though only a ſecond rate performer at the Opera, was many years the beſt female ſinger at our concerts, and in Handel's Oratorios.

Brivio, as a compoſer, had conſiderable merit, and furniſhed the lyric theatres of Italy with ſeveral ſucceſsful operas.

Brivio, in *Geography*, a town of Italy, in the Milaneſe, on the road from Bergamo to Como.

BRIX, a town of France, in the department of the Channel; 5 miles W. of Valognes.

BRIXA, *Le.* See Lebrixa.

BRIXELLUM, in *Ancient Geography*, a town of Gallia Ciſpadana; now Bersello, which ſee.

BRIXEN, *Biſhopric of*, in *Geography*, a diſtrict of the Tyrol, in Germany, is ſituated among the Rhætian Alps, and is very fruitful, eſpecially in wine. The prelate has a revenue of about 30,000 crowns per annum, and is a prince of the empire and ſtate of the circle of Auſtria: though in eccleſiaſtical matters, he is ſuffragan to the archbiſhop of Saltzburg. He has a vote and a ſeat in the diet of the empire, and furniſhes his contingent of taxes and impoſts. The religion of the dioceſe is Roman catholic; but among the peaſants there are ſome Lutherans: the capital is Brixen.

Brixen, the capital of the preceding biſhopric, ſeated on the river Eyſach, at ſome diſtance ſouth of the Brenner mountains. It is ſurrounded with hills and vineyards, and is a well-built populous town; the houſes being adorned with piazzas, and painted on the outſide. It has many public buildings, excluſive of the cathedral, which are handſome, and ſeveral ſpacious ſquares; the mineral waters in its vicinity cauſe it to be much frequented. In 1080, a council was held here by the emperor Henry IV. which depoſed pope Gregory VII. This town was taken by the French in March 1796. N lat. 46° 35'. E. long. 11° 50'.

BRIXENSTADT, a town of Germany, in the circle of Franconia, and principality of Anſpach, affording an aſylum for involuntary homicides; 16 miles E. N. E. of Wurzburg.

BRIXIA, in *Ancient Geography*, a town of Regio Tranſpadana, belonging to the Cenomani, ſeated on the Mela; now Brescia, which ſee.

Brixta, a river of Suſiana, which diſcharges itſelf into the Perſic gulf, and which rendered the coaſt dangerous, according to Pliny, by the quantity of mud depoſited by it.

BRIXTON Bay, in *Geography*, lies on the weſt ſide of the iſle of Wight, and is an open bay to the north-weſt from the ſouth point of this iſland. The ground is rocky, and in ſwelling ſeas or winds in ſhore, it does not afford a deſirable retreat nor a ſafe anchorage.

BRIZA, *Quaking graſs*, in *Botany*, (βριζω, to nod,) Linn. 84. Reich. 90. Schreb. i 15. Gærtn. 6. Tab. 1. Juſſ. 32. La Marck, Tab. 45. Smith Flor. Brit. 34. Claſs, *triandria digynia*. Nat. Ord. *Gramina*. Gen. Char. *Cal.* glume many-flowered, two-valved, ſpreading, blunt, collecting the flowers into a ſubcordate, two-rowed ſpikelet. *Cor.* two-valved; the lower valve the ſize and figure of the calyx, the upper one very ſmall, flat, roundiſh, encloſing the other. *Nect.* two-leaved; folioles linear, crenulate. *Stam.* filaments three, capillary, oblong. *Piſt.* germ, roundiſh, ſpreading. *Stigmas*, plumoſe. *Peric.* none; the corolla unchanged contains the ſeed, and when ripe, opens and drops it. *Seed*, one, adhering to the corolla, compreſſed. Eſſ. Char. *Cal.* bivalved, many-flowered; little ſpikes two-rowed. *Cor.* two-valved, ventricoſe, with cordate obtuſe valves; *ſeed* adhering to the corolla, depreſſed.

La Marck obſerves, that Briza is too nearly allied to Poa, to make a good diſtinct genus. He has, however, kept them ſeparate, but judging that what has been called a multivalve calyx in Uniola, its principal difference from Briza, is nothing more than two or three abortive florets, he has aboliſhed the genus, and deſcribed its ſpecies under Briza. In agreement with the greater number of authors, we have thought it beſt to preſerve the original diſtribution. Species 1. B. *minor.* Lin. (Eng. Bot. 1316,) *aſpera*, Knap. (Gram. Brit. 61.) "Spikelets triangular, ſeven-flowered; calyx longer than the florets, ſtipule very long, lanceolate." Dr. Smith. *Root* fibrous, ſmall, annual. *Culm* erect, about ſeven inches high, round, roughiſh, with minute ſpines pointing downwards, leafy, often branched at the baſe. *Leaves* ſheathing, erect, lanceolate, acute, flat, of a pleaſant green, ſtriated, rough at their margin. *Sheath* ſtriated, ſmooth. *Stipule* lanceolate, very long, embracing the ſtem, decurrent, adhering to the leaf above, very tender. *Panicle* ſpreading widely; branches growing two together, branchlets dichotomous, divaricated, capillary, rough, green. *Spikelets* pendulous, trembling, deltoid, ſmooth, beautifully variegated with white and green, with about ſeven flowers. *Calyx-glumes* nearly equal, concave, very obtuſe, ſtriated, membranaceous at the margin, longer than the florets. *Florets* alternate, gradually ſmaller; inner glumes very ſmall, emarginate. Dr. Smith deſcribes the culm as ſmooth, but in ſpecimens ſent us from the weſt of England, it has a ſlight roughneſs, juſt ſenſible to the touch, and viſible with a ſtrong magnifier. We have, therefore, followed Mr. Knap in this part of the deſcription. The greater length of the calyx is moſt obſervable when the panicle has juſt burſt from its ſheath. At a more advanced period the diſtinction nearly diſappears. It is a rare plant in England, peculiar to the ſouthern counties, and chiefly found in Cornwall. 2. B. *media*, Linn. common quaking graſs, cow-quakes, ſhakers, ladies-hair, bird's eyes. Eng. Bot. 340. Knap Gram. Brit. 60. "Spikelets ovate, ſeven-flowered, calyx ſhorter than the florets, ſtipule very ſhort, obtuſe." Dr. Smith. *Root* perennial, fibrous, elongated. *Culm* erect, round, leafy, very ſmooth. *Leaves* acute, flat, ſtriated, a little rough. *Sheaths*, very long, ſtriated, ſmooth. *Stipule* very ſhort, obtuſe, ſcarcely decurrent, not adhering to the leaf above. *Panicle* widely ſpreading, many-flowered, branches growing by twos, branchlets as in the *minor*, but brown, not green. *Spikelets* pendulous, trembling, ovate, or a little heart-ſhaped, ſmooth, ſhining, variegated with white and brown. *Calyx glumes* nearly equal, concave, obtuſe, ſcarcely ſtriated, ſcarious at their margin. *Florets* as in the minor. Dr. Smith. Common in the dryiſh meadows of Europe, and other parts of Europe. It has no peculiar excellence, and has never been cultivated ſeparately. 3. B. *virens*, Linn. "Spikelets ovate, ſeven-flowered: calyx equal to the florets." Very like the preceding, but the leaves are twice as broad. *Root* annual. *Stipule* acute, decurrent, adhering to the leaf above. *Panicle* fuller, green, more branched; branchlets much divaricated, occaſioned by callous knots depreſſing them at their baſe. *Flowers* rather ſmaller, readily falling off when ſhaken. Native of the Levant, Spain, &c. Introduced into England, 1787, by Mr. Zier. 4. B. *geniculata*. Willd. "Spikelets ovate, calyx ſhorter than the flowers, culm geniculate." Thunb. Cape of Good Hope. 5. B. *Capenſis*. (Poa Brizeides, Linn. Sup.) "Spikelets ovate, ten-flowered, panicle cloſe. Thunb." Pedicles ſimple. Cape of Good Hope. 6. B. *maxima*. Linn. "Spikelets cordate; florets ſeventeen." *Root* annual. *Leaves* broad. *Culm* about a foot and half high. *Spikelets* very few, very large, ſhining, ſcarious, variegated with green and white. *Peduncles* ſimple. Italy, Portugal, Cape of Good Hope, India. 7. B. *eragroſtis*. Linn. "Panicle oblong; ſpikelets lanceolate, many-flowered." La Marck. *Root* annual. *Culm* from five to ſeven inches high, decumbent near the bottom. La Marck obſerves, that it is nearly allied to Poa eragroſtis, and Willdenow doubts whether it be more than a variety of it; but Villars aſſerts that it may always be diſtinguiſhed by the outer valve of the corolla, which is concave, pellucid, with a nerve running along the middle, and two along the edge. South of Europe. 8. B. *monſpeſſulana*. Allion. "Spike nodding, ſimple; ſpikelets alternate, peduncled, ſubſolitary, ovate; calyx five-flowered." Martyn's Miller.

BRIZACA, in *Ancient Geography*, a town of Aſia, in Armenia Major. Ptolemy.

BRIZANA, a river of Aſia, in Perſia Propria. Its mouth was dangerous, according to Arrian, on account of the banks and rocks with which it abounded. Ptolemy calls this river Briſoana.

BRIZE, in *Agriculture*, a word that ſignifies ſuch lands as have remained long without tillage.

Brize-*vents*, or Briſe-*vents*, a kind of ſhelters uſed by gardeners, who have not walls on the north ſide, to keep the cold winds from damaging their melon-beds.

Brize-vents are encloſures ſix or ſeven feet high, and an inch thick, made of ſtraw, ſupported by ſtakes fixed into the ground, and props acroſs both inſide and outſide, faſtened together with willow twigs, or iron-wire.

BRIZEMBOURG, in *Geography*, a town of France, in the department of the Lower Charente, and diſtrict of St. Jean d'Angely; 2½ leagues S. of St. Jean d'Angely.

BRIZEN, a town of Germany, in the circle of Upper Saxony, and Middle Mark of Brandenburg; 4 leagues N. of Wittenberg.

BRIZIO, or Briccio, Franceſco, in *Biography*, a painter of architecture and landſcape, was born at Bologna in 1574, and educated firſt in the ſchool of Paſſerotti, and afterwards under Ludovico Caracci. Having applied with great diligence to the ſtudy of the principles of perſpective and architecture, he acquired a ſtyle in his compoſitions of ſuch diſtinguiſhed excellence, that his pictures were much admired, not only for the truth of the perſpective, and the beauty of the colouring, but alſo for the grandeur of his ideas, the majeſtic ſtyle of the architecture, the elegance of the ornaments, and the noble taſte of landſcape, which he introduced to ſet off his buildings. He was alſo an engraver, and is ſaid to have aſſiſted Agoſtino Caracci in the plates which he engraved; we have alſo ſome etchings by this maſter. Of his prints we may mention his "Holy Family," from Correggio; "St. Roch," from Parmigiano; the "Flight into Egypt," from Ludovico Caracci; and "Chriſt and the Woman of Samaria," from Agoſtino Caracci. He died in 1623. Pilkington. Strutt.

BROACH, Brocha, in *Middle Age Writers*, denotes an awl or bodkin. Among us broach is chiefly uſed for a ſteel inſtrument ſerving to open holes in metals. It is ſometimes alſo applied to a ſtick on which thread or yarn is wound; and, in the North, to a ſort of wooden needles uſed in knitting certain coarſe things.

See an account of the broach uſed in weaving tapeſtry, under Tapestry.

In ſome part of England, a ſpit is called a broach and hence alſo to broach a barrel, is to tap it. The ancient lords received from their tenants a fee or tribute, called *pertuſagium* for the liberty of broaching a kag of ale.

The term *broach*, or *broche*, is alſo uſed in Scotland to denote a certain utenſil uſed by the Highlanders for faſtening their veſt, and reſembling the "fibula" of the Romans. This broach is commonly of ſilver, of a round figure, and furniſhed with a tongue, croſſing its diameter, and ſerving to faſten the folds of the garment: ſome have two tongues, one on each ſide of a croſs bar in the middle. Ancient broaches of elegant workmanſhip, and richly ornamented, are preſerved in ſeveral families; ſome of which are inſcribed with names, to which particular virtues were aſcribed, and others furniſhed with receptacles for relics, ſuppoſed to defend from harm: ſo that they ſeem to have been uſed not only in dreſs, but for the purpoſe of amulets.

Broach, in *Geography*. See Baroach.

Broach *to*, is when a ſhip ſailing large ſuddenly flies up to the wind, in conſequence of the difficulty of ſteering, or of bad ſteerage, &c. ſo that the ſails are all taken aback.

BROAD-Arrow, in *Heraldry*, differs from the *pheon* by having the inſide of its barbs plain.

Broad *Bank*, in *Geography*, a bank on the coaſt of Flanders, the ſouth end of which is about 4 or 5 leagues N. E. by N. from Calais cliff. On the weſt ſide between this and Rattle-bank is a channel of 18 or 19 fathoms.

Broad *Bay*, a bay of America, in the diſtrict of Maine, lying on the line of Lincoln and Hancock counties, bounded by Pemaquid point on the weſt, and Pleaſant point on the eaſt.

Broad *Bay*, on the coaſt of Wales. See St. Bride's *Bay*.

Broad-*caſt Huſbandry*, in *Agriculture*, that ſort of arable cultivation in which the ſeed is put into the ſoil by the hand without the aid of machinery. In this way the ſeeds are ſcattered over the ſurface of the ground, without being confined in regular rows, as is the caſe in the drill method, which is moſtly oppoſed to it. The putting of the ſeed into the earth in this way ſeems better ſuited to the ſtony and more ſtiff kinds of land, than that by means of machines, as they muſt conſtantly be liable to be put out of order, and of courſe to depoſit the ſeed in an irregular manner. See Husbandry.

Broad-*caſt Sowing*, that mode of putting grain, turnips, pulſe, clover, graſſes, &c. into the earth, by diſperſing them over the ſurface by the hand. See Sowing.

Broad *Fourteens*, in *Geography*, the name of a ſand which lies 5 or 6 leagues N. E. from the Texel, extending by a ſmall tail N. from the Texel, and N. W. by N. from Flyer Vlieland iſland towards the ſouth. Upon this ſand are generally 14 fathoms of water, and between it and the land from 18 to 19, and more northerly 20 fathoms.

Broad *Haven*, a conſiderable harbour of the county of Mayo, Ireland, lying between Urris and Binwy heads. It is very extenſive, has good ground, and water of ſufficient depth for any ſhip; but is ſo much expoſed to northerly winds, that there is not room for more than two large ſhips in well ſheltered anchorage. Small veſſels, however, may go farther up, and lie very ſafe on ſoft ſand, with three or four feet water under them at low water. The weſtern ſhore of this bay is formed by the peninſula of the Mullet, ſometimes erroneouſly repreſented as an iſland. There are at preſent only a few fiſhing villages on the coaſt of this harbour. About two miles N. by E. of Binwy head are three or four very remarkable rocks, called *the Stags of Broadhaven*. Lon. between 9° 40′, and 9° 49′ W. Lat. 54° 19′ N.

Broad *piece*, in *Coinage*, a denomination given to certain gold pieces broader than a guinea; particularly Caroluſes and Jacobuſes.

Broad *River*, in *Geography*, an arm of the ſea, extends along the weſt and north-weſt ſides of Beaufort or Port Royal iſland, on the coaſt of South Carolina, and receives Cooſa river from the north-weſt, which may be alſo called an arm of the ſea. Theſe two arms embrace all the iſlands between Coombahee river and Dawfuſkee ſound, with which Broad river alſo communicates. Channels between Broad river and Cooſa form the iſlands. The entrance through Broad river to Beaufort harbour, which is one of the beſt in the ſtate, lies between Hilton's head and St. Phillip's point.

Broad *River*, or *Cherakee-haw*, a water of Savannah river, from the Georgia ſide, which empties into the Savannah at Peterſburg.

Broad *River*, in South Carolina, riſes by three branches from the N. W. viz. the Ennoree, Tiger, and Packolet, which unite about 40 miles above the mouth of the Saluda river; and this, with Broad river, forms Congaree river. Broad river may be rendered navigable 30 miles in North Carolina.

Broad-*Sand*, lies on the weſt ſide of the buoys of the channel in the Zuyder ſea, within the Texel.

Broad *ſide*, in the *Sea-Language*, a diſcharge of all the guns on one ſide of a ſhip at the ſame time.

A broad-ſide is a kind of volley of cannon, and ought never to be given at a diſtance from the enemy above muſket-ſhot at point-blank.

Broad *Sound*, in *Geography*, is the opening from the S.W. into the roads and harbours of the Scilly iſlands. In this ſound there is good anchorage, when St. Mary's iſland on the E. S. E. and Samſon iſland to the W. N. W. and the S. point of Treſco iſland on the N. are nearly at the ſame diſtance of about a mile.—Alſo, a ſound in the N.W. point of France, called by the French "Paſſage de Liroiſe," lying between Point de Sant and the iſland of Uſhant, and extending to ſea about 5 leagues from St. Matthew's point.—Alſo, a ſound on the coaſt of Norway, between which and the north part of Stadland are Flowack iſlands.—Alſo, the ſound which is the entrance into Boſton harbour from the N.E. in a direct line for Nick's Mate iſland.—Alſo, a ſound in the South Pacific ocean, on the eaſt coaſt of New Holland, within the bay of Inlets, having cape Palmerſton for its N.W. entrance. It is ſeparated from Thirſty ſound by an iſland lying in the direction of S. S. E. and S. called Long iſland. S. lat. 21° 30′ to 21° 50′. E. long. 149° 20′.

Broad-*ſtairs Pier*, lies within the bight of the point between the north Foreland and Ramſgate, and nearly at weſt from the Foreland.

Broad-*ſtone*, in *Building*, a ſpecies of free-ſtone, thus denominated becauſe it is raiſed broad and thin out of the quarries; or not exceeding two or three inches in thickneſs; chiefly uſed for paving.

Broad *wheeled Waggon*. See Waggon.

Broad-*worm*, in *Zoology*, ſynonymous with *lumbricus latus* of old writers. See Tænia, and Tape-worm.

BROADALBIN, in *Geography*, a townſhip of America, in Montgomery county, New York; containing, by the ſtate-cenſus of 1796, 277 inhabitants, who are electors.

BROADFIELD, a poſt town in Weſtmoreland county, Virginia; 96 miles from Waſhington.

BROADKILL, a poſt town in Suſſex county, Delaware; 166 miles from Waſhington.

BROADLEY, a town of Poland, in the principality of Belez: 48 miles E. of Belez.

BROBACH, a town of Germany, in the circle of the Lower Rhine, and electorate of Treves; 15 miles S. E. of Treves.

BROCADE, in *Commerce*, a ſort of ſtuff, or cloth of gold, ſilver, or ſilk, raiſed and enriched with flowers, foliages, or other figures, according to the fancy of the manfacturer.

Formerly, the term was reſtrained to cloths woven either wholly of gold, both of woof and warp, or of ſilver, or of both together; but by degrees it came likewiſe to paſs for ſuch as had ſilk intermixed, to fill up and terminate the flowers of gold and ſilver. At preſent, any ſtuff of ſilk, ſatin, or even ſimple taffety, when wrought and enriched with the flowers, &c. obtains the denomination of brocade.

In the manufacture of brocades, the flatted gilt wire is ſpun in threads of yellow ſilk, approaching as nearly as poſſible to the colour of gold itſelf. The wire, winding off from a bobin, twiſts about the thread as it ſpins round, and by means of curious machinery, a number of threads are thus twiſted at once by the turning of one wheel. The principal art conſiſts in ſo regulating the motion, that the ſeveral circumvolutions of the flatted wire in each thread may juſt touch one another, and ſeem, as it were, one continued covering. At Milan, it is ſaid, there is made a ſort of flatted wire, gilt only on one ſide, which is wound upon the thread, ſo that only the gilt ſide appears; the preparation of this wire is kept a ſecret, and has been attempted in other places with little ſucceſs. There is alſo a gilt copper wire, made in the ſame manner as the gilt ſilver. Savary obſerves, that this kind of wire, called falſe gold, is prepared chiefly at Nuremberg; and that the ordinances of France require it to be ſpun, for its diſtinction from the gilt ſilver, on flaxen or hempen threads. The Chineſe, inſtead of flatted gilt wire, uſe ſlips of gilt paper, which they both interweave in their ſtuffs, and twiſt upon ſilk threads; but whatever be the pretended beauty of the ſtuffs of this kind of manufacture, it is obvious that they muſt want durability: accordingly, the Chineſe themſelves, as we learn from Du Halde, ſenſible of this imperfection, ſcarcely uſe them any otherwiſe than in tapeſtries, and ſuch other ornaments as are not intended to be much worn or expoſed to moiſture.

The Venetians have carried on a large trade, to the Levant, in a kind of brocade called *damaſquète*, which, though it has only about half the quantity of gold or ſilver as that made among us, looks far more beautiful. The flatted wire is neither wound cloſe together on the ſilk threads, nor the threads ſtruck cloſe in the weaving; yet, by paſſing the ſtuff betwixt rolls, the diſpoſition and management of which is kept a ſecret, the tiſſue or flower is made to appear one entire brilliant plate of gold or ſilver. The French miniſtry judged this manufacture important enough to deſerve their attention; and accordingly, for contriving the machinery, they engaged the ingenious M. Vaucanſon, known throughout Europe for his curious pieces of mechaniſm, who, in the memoirs of the academy for the year 1757, gives an account of his ſucceſs, and of the eſtabliſhment of ſuch a manufacture at Lyons.

The lower roll is made of wood, thirty-two inches in length and fourteen in diameter; the upper one of copper, thirty-ſix inches long and eight in diameter: this laſt is hollow, and open at one end, for introducing iron heaters. For making the rolls cylindrical, he has a particular kind of lathe, wherein the cutting tool, which the moſt dexterous hand could not guide in a ſtraight line through ſuch a length as thirty-ſix inches, is made to ſlide, by means of a ſcrew, on two large ſteel rulers, perfectly ſtraight, and capable of being moved at pleaſure, nearer, and always exactly parallel, to the axis of the roll.

He firſt diſpoſed the rolls nearly as in the common flatting mill. In this diſpoſition, ten men were ſcarcely ſufficient for turning them with force enough to duly extend the gilding; and the collars, in which the axis of the rolls turned at each end, wore or gulled ſo faſt, that the preſſure continually diminiſhed, inſomuch that a piece of ſtuff of ten ells had the gilding ſenſibly leſs extended on the laſt part than on the firſt. He endeavoured to obviate this inconvenience by ſcrewing the rolls cloſer and cloſer in proportion as the ſtuff paſſed through, or as the wearing of the collars occaſioned more play between them; but this method produced an imperfection in the ſtuff, every turn of the ſcrew making a ſenſible bar acroſs it. To leſſen the attrition, each end of the axes, inſtead of a collar, was made to turn between three iron cylinders, called friction-wheels: but even this did not anſwer fully, for now another ſource of unequal preſſure was diſcovered. The wooden roll, being compreſſible, had its diameter ſenſibly diminiſhed: it likewiſe loſt its roundneſs, ſo that the preſſure varied in different points of its revolution. On trying different kinds both of European and Indian woods, all the hard ones ſplit, the ſoft ones warped without ſplitting, and, of more than twenty rolls, there was not one which continued round for twenty-four hours even without being worked in the machine.

Theſe failures put him upon contriving another method of preſſing the rolls together, ſo that the force ſhould always accommodate itſelf to whatever inequalities might happen. The axis of the copper roll being made to turn between friction wheels as before, that of the wooden one is preſſed upwards by a lever at each end furniſhed with a half collar for receiving the end of the axis. Each lever has the end of its ſhort arm ſupported on the frame of the machine, and the long arm is drawn upwards by an iron rod communicating with the end of the ſhort arm of another lever placed horizontally: to the long arm of this laſt lever is hung a weight, and the levers are ſo proportioned, that a weight of 30 pounds preſſes the rolls together with a force equivalent to 17,536 pounds, which was found to be the proper force for the ſufficient extenſion of the gilding. By this contrivance four men can turn the rolls with more eaſe than ten can turn thoſe which are kept together by ſcrews; and the ſame weight acting uniformly in every part, the preſſure continues always equal, though the wooden roll ſhould even become oval, and though the ſtuff be of unequal thickneſs.

A piece of cloth, of about two ells, is ſowed to the begining and end of the ſtuff, to keep it out to its width when it enters and parts from the rolls, which could not be done by the hands for fear of burning or bruiſing them: as it would take too much time to ſew theſe cloths to every ſmall piece of an ell or two, a number of theſe is ſewed together. The ſtuff is rolled upon a cylinder, which is placed behind the machine, and its axis preſſed down by ſprings to keep the ſtuff tight as it comes off. Four iron bars, made red-hot, are introduced into the copper roll, which in half an hour acquires the proper degree of heat, or nearly ſuch a one as is uſed for the ironing of linen: the wooden roll is then laid in its place, and the machine ſet to work. If more than thirty ells are to be paſſed at once, the wooden roll muſt be changed for another, for it will not bear a longer continuance of the heat without danger of ſplitting, and therefore the manufacturer ſhould be provided with ſeveral of theſe rolls, that when one is removed, another may be ready to ſupply its room: as ſoon as taken off from the machine, it ſhould be wrapt in cloth and laid in a moiſt place.

The principal inconvenience attending the uſe of this machine is, that the heat neceſſary for extending the gilding, though it improves the brightneſs of white and yellow ſilks, is injurious to ſome colours, as crimſon and green. A double preſſure will not ſupply the place of heat: and the only method of preventing this injury, or rendering it as ſlight as poſſible, appeared to be to paſs the ſtuff through with great celerity.

Rich brocades may be cleaned, and the luſtre of them recovered, by waſhing them with a ſoft bruſh dipped in warm ſpirit of wine.

Neither alkaline liquors nor ſoap ſhould be uſed for this purpoſe; becauſe the former, while they clean the gold, corrode the ſilk, and change or diſcharge its colour, and the latter alſo alters the ſhade, and even the ſpecies of certain colours. But ſpirit of wine may be uſed without any danger of its injuring either the colour or the quality of the ſubject, and, in many caſes, it proves as effectual for reſtoring the luſtre of the gold, as the corroſive detergents.

Spirit of wine ſeems to be the only material adapted to this intention; however, this is not proper in all caſes: for if the baſe metal, with which the gold of the covering was alloyed, has been corroded by the air, the particles of the gold may thus be diſunited; and the ſilver underneath, tarniſhed to a yellow hue, may continue a tolerable colour to the white; but in ſuch caſes the removal of the tarniſh would be prejudicial to the colour. See Lewis's Com. Philoſophico-Technicum, p. 62. 226.

BROCADE-SHELL, in *Conchology*, a trivial name given ſometimes to CONUS GEOGRAPHICUS. Linn. In a more general ſenſe, the epithet brocade, ſynonymous with the French *brocard*, is applied to various other objects of natural hiſtory, whoſe diſpoſition of colours, and markings, bear a fancied reſemblance to that ſort of ſtuff, ſilk, cloth, and which is commonly underſtood by the word brocade. Brocard among the French, and brocade with us, is not, therefore, the language of naturaliſts, but of dealers, and unſcientific collectors.

BROCARDICS, BROCARDICA, denote maxims or principles in *Law;* ſuch as thoſe publiſhed by Azo, under the title of *Brocardica Juris*.

Voſſius derives the word from the Greek ϖροταρχια, q. d. *firſt elements*. Others, with more probability, from *Burchard*, or *Brochard*, biſhop of Worms, who made a collection of canons, called from hence *Brocardica;* and as this work abounded much in ſentences and proverbs, the appellation brocardica became hence extended to every thing.

BROCATELL, called by the French *brocadel*, an ordinary kind of ſtuff made of cotton, or coarſe ſilk, in imitation of brocade; chiefly uſed for tapeſtry and other furniture. That manufactured at Venice is the moſt eſteemed.

BROCATELLO, a name given by lapidaries to a calcareous ſtone or marble, compoſed of fragments of four colours, white, grey, yellow, and red.

BROCCO, in *Geography*, a town of Naples, in the county of Lavora, 5 miles W. of Capua.

BROCCOLI, in *Botany* and *Gardening*. See BRASSICA OLERACEA.

BROCHOS, in *Surgery*, is a term of doubtful ſignification. It has been conſidered by ſome as a Greek name for the *laqueus*, or nooſe; and by others, as denoting bandages in general. Caſtellus informs us, that this word relates to certain chirurgical inſtruments; and he refers to the authority of Galen and Oribaſius. It has alſo been conſidered as expreſſive of a privation of voice, or aphonia. Perſons having a very large and prominent upper lip, have been denominated *brochi*: although Dr. Turton, in his Medical Gloſſary, ſays, that *brochus* ſignifies one who has "the chin and nether lip ſticking out."

BROCHUS, in *Ancient Geography*, a town of Phœnicia, ſeated near a marſh, between Libanus and Antilibanus. Polybius.

BROCK, among *Sportſmen*, ſometimes denotes a badger, otherwiſe called a grey *brock*.

BROCK, and BROCKET, are alſo uſed to denote a hart of the third year.

BROCKDROP, in *Geography*, a town of Germany in the circle of Lower Saxony, and duchy of Holſtein; 6 miles W. of Krempe.

BROCKEL, or BRAKEL, a town of Germany, in the circle of Weſtphalia, and county of Verden; 5 miles E. of Rotenburg.

BROCKEN. See HARTZ.

BROCKLESBY, RICHARD, in *Biography*, who attained to conſiderable eminence, and acquired a ſplendid fortune by the practice of medicine in London, was of a reſpectable family of Cork, in Ireland, but was born at Minehead in Somerſetſhire, where his mother was on a viſit to one of her relations at the time of his birth. This happened on the 11th of Auguſt, 1722. His parents were quakers; but it does not appear that they were ſolicitous to initiate him in the principles of that ſect. At an early age he was ſent to a famed academy at Ballytore, in the north of Ireland. There he formed an intimacy with Edmund Burke, which was improved into the moſt cordial friendſhip when they met together afterwards in London. Having completed his ſchool education, he went to Edinburgh, and after attending the lectures of the profeſſors in the different branches of medicine there, he proceeded to Leyden, and took his degree of doctor, under the celebrated Gaubius, in June, 1745, giving, for his inaugural theſis, a diſſertation "De Saliva ſana et morboſa." The following year he came to London, and ſettled in Broad-ſtreet: and as the income allowed him by his father was not large, and he found that ſum not much increaſed, for the firſt few years, by the profits of his profeſſion, he determined to regulate his expences in ſuch a manner, as to ſecure him from the miſery of dependence. "Never ſuffering himſelf," as he was uſed to ſay, "to have a want that was not accommodable to his fortune." The ſame year he publiſhed an Eſſay concerning the Mortality of the Horned Cattle, which contributed to extend his name and character. In 1751 he was admitted a licentiate in the Royal College of Phyſicians, in London. In 1754 he received an honorary degree of doctor in medicine, from the univerſity of Dublin, and the following year he was admitted by the univerſity of Cambridge, ad eundem. He then became a candidate, and in June, 1756, was elected a fellow of the College of Phyſicians. As his practice was now much increaſed, and by the prudence of his conduct, and the ſuavity of his manners, he had conciliated to himſelf the friendſhip of his profeſſional brethren, he was, by their recommendation, appointed phyſician to the army by Lord Barrington. In this capacity he went to Germany, and continued there, until a few months before the concluſion of the war, in 1763. The following year he publiſhed the reſult of his obſervations and practice, under the title of "Economical and Medical Obſervations, from 1738 to 1763, tending to the Improvement of Medical Hoſpitals." 8vo. He now returned to London, and ſettled in Norfolk-ſtreet, in the Strand. His fortune was by this time increaſed by an eſtate of 600l. per annum, which devolved to him on the death of his father; and the duke of Richmond, and five other noble perſonages, agreed to give him penſions of 100l. per annum each, as a recompence for attending their families. This, with his half-pay from the army, made up a handſome income; and as he poſſeſſed that aldermanly virtue, as dean Swift calls it, diſcretion, he was enabled to keep a carriage, and to live with ſome degree of ſplendour. Soon after he was made a fellow of the Royal Society: and not being incumbered with a family, he dedicated what time he could ſpare from attending his patients, &c. to reading, or to aſſociating with perſons eminent for literature and ſcience. On his ſuggeſtion, a profeſſorſhip in chemiſtry was added to the eſtabliſhment of the college at Woolwich; and on his recommendation the late Dr. Adair Crawford, author of an ingenious philoſophical treatiſe on heat, was appointed the firſt profeſſor. Though it has been intimated, that the doctor's habits were frugal and economical, yet there are abundant proofs he was not deficient in liberality. On being informed that Dr. Johnſon, with whom he cultivated a ſtrict intimacy, wiſhed, in the latter part of his life, to viſit the continent for the recovery of his health, but was reſtrained from going, by the narrowneſs of his circumſtances, he, in a handſome and delicate manner, made him an offer of an annuity of 100l. per annum for the remainder of his life; and on Dr. Johnſon's declining to accept the offer, he preſſed him to reſide in his houſe, as more airy and healthy than that in which he then lived. To his friend Edmund Burke he ſent 1000l. which he told him he had intended leaving him at his death, but thought it might then come to him, at a time when it would be of little uſe. The preſent was accepted, in a manner which ſhewed that the doctor was not wrong in his conjectures. In the year 1794, finding the infirmities of age increaſe faſt upon him, he gave up his half-pay in the army, and declined, excepting among his particular friends, viſiting patients. A little before this time, his patron and friend, the duke of Richmond, had appointed him phyſician-general to the royal regiment of artillery, and corps of engineers. This he retained, as giving him occaſion of going to Woolwich, and viſiting the laboratory there, to which he was attached. In the beginning of December, 1797, he went to Beaconsfield, to the houſe of Mrs. Burke, the widow of his deceaſed friend, where he continued a few days, and returned on the 11th of the month, to dine with his two nephews, Mr. Beeby and Dr. Young, the charge of whoſe education he had taken principally upon himſelf. Though much fatigued with his journey, he appeared pleaſed with the interview, and ſupported his part of the converſation with chearfulneſs. At nine he retired to reſt, but found the labour of going up ſtairs almoſt too much for him; and obſerved, "What an idle piece of ceremony this buttoning and unbuttoning is to me now." After ſitting ſome minutes in a chair to recruit himſelf, he went to bed, and in a few minutes quietly expired. His fortune, which is ſaid to have exceeded 30,000l. was left between his two nephews, a few legacies to friends and diſtant relations excepted.

As Dr. B. was of a quiet and peaceable diſpoſition, he was not likely to enter into any ſerious broil; he was, however, at one time, obliged to accept a challenge. The occaſion was this; the late doctor, afterwards Sir John Elliot, in the courſe of his attendance on a patient with Dr. B. had made uſe of means to obtain the favour of the family of the patient, which were not compatible with the character of a gentleman. Of this Dr. B. talked openly, and the expreſſions he uſed on the occaſion were reported to Dr. Elliot, with an intimation, that if he did not inſiſt on an apology from his antagoniſt, no one would, hereafter, meet or aſſociate with him. A duel was the reſult, which, however, terminated without the effuſion of blood, the ſeconds having taken care to place the combatants at ſuch a diſtance, that their balls, if they ſhould hit, would do no miſchief.

Beſides the works mentioned before, Dr. B. was author of "Oratio Harveiana," publiſhed 1760, 4to.; "An Account of a poiſonous Root lately found mixed with Gentian," Phil. Tranſ. No. 486.; "Experiments on cutting the tendons, in various animals," ibid. vol. 43.; "Caſe of a Lady labouring under Diabetes," Med. Obſ. vol. 3.; "Experiments relative to the Analyſis of Seltzer Water," ibid. vol. 4.; "Caſe of an Encyſted Tumour in the Orbit of the Eye," ibid.; and "A Diſſertation on the Muſic of the Ancients," ſuppoſed to be written in the early part of his life.

BROD. a fortified town of Sclavonia, ſeated on the Save, and famous for a victory gained over the French in 1688. N. lat. 45° 20′. E. long. 18° 36′.

Brod, *Bomiſch*, a town of Bohemia, in the circle of Kaurzim; reduced to aſhes in 1637, and ſince rebuilt; 7 miles N. W. of Kaurzim.

Brod, *Teutſch*, a town of Bohemia, in the circle of Czaſlau, on the Sazava, taken by the allies in 1741; 20 miles S. S. E. of Czaſlau.

Brod, *Ungariſh*, a town of Moravia, in the circle of Hradiſch; 8 miles S. E. of Hradiſch.

BRODEAU, John, (Lat. *Brodæus*), in *Biography*, a learned critic, was born at Tours about the beginning of the 16th century, and having ſtudied law at Bourges under Alciatus, devoted himſelf to the belles lettres. He travelled into Italy, and formed connections with Sadolet, Bembo, Manutius, and other literary characters. After his return to France, he diſtinguiſhed himſelf by ſeveral works of criticiſm, the principal of which is a collection of obſervations, corrections, explanations, &c. of ancient authors, entitled "Miſcellanea." The firſt ſix books of this work were publiſhed in the ſecond volume of Gruter's "Lampas, ſeu Fax Artium," in 1604; and the four latter books in the fourth volume of the ſame collection. In his notes on Euripides, he has been charged with plagiariſm. He was alſo verſed in mathematics, and the oriental languages, as well as claſſical literature. He died at Tours, where he was canon of St. Martin, in 1563. Gen. Dict.

BRODENFELD, in *Geography*, a town of Germany, in the circle of Upper Saxony, and territory of Vogtland; 3 miles E. of Oelſnitz.

BRODERA, a fortified town of Hindooſtan, in the country of Guzerat; ſituate on the ſmall river Dader, in the north-eaſt part of the tract lying between the rivers Tapty and Myhie, through which the great road leads from Surat to Ougein. This is a modern town in compariſon with ſeveral others, having been built by the ſon of the laſt king of Guzerat, near the ſcite of an ancient town, formerly called Radipore, but now Old Brodera, which is entirely gone to decay. It ſtands in a very fertile, though ſandy, country, has good walls and towers, and is full of artificers, who manufacture the fineſt ſtuffs of Guzerat, bafts, nicanees, cannaquins, cheloes, &c.: the cottons of Brodera are finer than thoſe of Baroach, but narrower and ſhorter. Indigo is alſo an article of trade in this place, and the vicinity ſupplies gum-lac. The Dutch factory eſtabliſhed at Brodera in 1620, was abandoned before the year 1670. N. lat. 22° 15′ 30″. E. long. 73° 11′.

BRODERIES, *Fr.* a term in *Muſic* for embroidering or gracing a melody. It is equivalent likewiſe with *doubles*, variations, *fleurtil*, an old term for flouriſhing an air. All theſe terms are uſed for the notes of muſic which the performer adds to his part in the execution, to vary a melody often repeated, to embelliſh paſſages too plain and ſimple, or to ſhine by the activity of throat or finger. Nothing manifeſts the good or bad taſte of a muſician, ſays Rouſſeau, more than the choice and application of theſe ornaments. French vocal performers were very ſparing of their *broderies* or graces in the middle of the laſt century; for if we except the celebrated Jeliote and mademoiſelle Fel, no French ſinger durſt venture to make a ſingle change in his part on the ſtage. French melody had been for ſome years growing more ſlow, and lamentable, that it was capable of no improvement by graces. The Italians are unable to execute a melody quite plain: they give full ſcope to their memory or fancy, and try who can make the greateſt number of changes; an emulation often abſurd, and carried to an offenſive exceſs. However, the accents of their melody are ſo ſtrongly marked, that there is little fear of the air being ſo diſguiſed, as not to be recognizable through all the performers' redundances.

With regard to inſtruments, a ſolo player may do what he pleaſes; but a performer in a full piece, who dares embroider his part, was never ſuffered in a good orcheſtra.

BRODETZ, in *Geography*, a town of Bohemia, in the circle of Boleſlaw, 5 miles S. of Jung Buntzlaw.

BRODIATORES, in the *Middle Age*, a kind of *librarii*, or copyiſts, who did not write the words and letters plain, but variouſly flouriſhed and decorated, after the manner of embroidery. Du-Cange Gloſſ. Lat. tom. i.

BRODNITZ, in *Geography*, a town of Pruſſia, in the biſhoprick of Culm; 30 miles E. of Culm.

BRODOW, a town of Germany, in the circle of Lower Saxony, and duchy of Holſtein; 4½ miles N. E. of Newſtadt.

BRODY, a town of Poland, in the palatinate of Lemberg; 30 miles S. of Lucko.

BRODZIEC, a town of Lithuania, in the palatinate of Minſk; 48 miles E. of Minſk.

BROECK, Crispin Vanden, in *Biography*, a painter and engraver, was a native of Antwerp, and flouriſhed about the year 1590. As a painter, he had ſome reputation in the hiſtorical line; but the prints engraved from his deſigns, which are numerous, evince him to have been a man of genius and great fertility of invention. Among the engravings that are attributed to him, is the "Circumciſion of Chriſt," in chiaroſcuro; the outline of which is etched in a bold free manner on copper; and the block of wood, which produces the lighter tints, is ſo contrived as to imitate the hatchings of white chalk upon the lights.

The daughter of this artiſt, viz. “Barbara Vanden Broeck,” learned to draw of her father, and was probably inſtructed in the art of engraving in the ſchool of the Colaerts. Her progreſs, however, was ſuch as to reflect no ſmall credit on her talents. Mr. Strutt notices the following plates of her execution; the “Laſt Judgment,” done altogether with the graver, and in the ſtyle of Martin Rota; a “Holy Family,” with St. John and ſeveral angels; and another “Holy Family,” with St John kneeling, and attendant angels, publiſhed by Hendius, A. D. 1621.

BROECKHUYSE, John, Lat. *Broukhuſius*, an elegant ſcholar and Latin poet, was born at Amſterdam in 1649. Diſliking the profeſſion of an apothecary, to which he was apprenticed, he left his maſter, and entered on board an India ſhip; and by degrees became maſter of an armed veſſel. In this ſituation he felt an inclination for letters and poetry; and, by the advice of Grævius, aplied to the ſtudy of the Latin language, of which in a few months he made himſelf complete maſter. He afterwards abandoned his ſea-faring employment, and devoted himſelf with ardour to claſſical ſtudies. Whilſt he was on board his ſhip, he wrote ſeveral pieces, one of which was entitled “Celadon, or Impatience to reviſit his Country;” and a collection of his poems was publiſhed at Utrecht in 1684, by which he acquired great reputation. As a critic, under which character he excelled, he publiſhed valuable editions of Sannazarius, Propertius, Tibullus, and Aonius Palearius. He alſo tranſlated into Latin father Rapin's “Parallel of Homer and Virgil.” He died in 1707, and a monument was erected to his memory at Amſterdam, where he was interred. A ſplendid edition of his poems in 4to. was publiſhed at Amſterdam, in 1711. Moreri. Gen. Biog.

BROECKHUYSEN, Benjamin Van, a Dutch phyſician of conſiderable learning and ingenuity, of the 17th century. After taking his degree of doctor in medicine at Leyden, he was made phyſician to the armies of the republic, and then phyſician to the fort and town of Bois le Duc. He was alſo known and eſteemed by king Charles II. of this country, when reſident in Holland.

His works are “Œconomia Corporis animalis, ſeu Cogitationes ſuccinctæ de Mente, Corpore, utriuſque Conjunctione,” Noviomagi, 1672. “Œconomia animali ad Circulationem Sanguinis breviter delineata,” Gouda, 1685, 8vo. He was a follower of the ſyſtem of Des Cartes, and maintained that the blood was heated in the heart by fire actually reſident there; and to this he attributed the impulſe it received, and which maintained and ſupported its circulation. “Rationes philoſophico-medicæ,” Haag. 1687, 4to, written in a florid and poetical ſtyle, explaining the animal œconomy on Carteſian principles. Haller. Bib. Anat. Eloy. Dict. Hiſt.

BROEK, Elias Vanden, a painter, was born and ſtudied at Antwerp in 1657, and became the diſciple of Erneſt Stuven, and ſtudied De Heem, ſays Houbraken, or of Mignon, according to Deſcamps. He painted, in a looſe, eaſy, and natural manner, all ſort of fruits, flowers, frogs, and reptiles. He deſigned and coloured every object after nature. Broek died in 1711. Pilkington.

Broek, in *Geography*, a town or rather a large village of North Holland, diſtinguiſhed by the elegant neatneſs and beauty of the houſes and ſtreets, and alſo of the inhabitants. The houſes, which are built of wood and covered with tiles, are painted and ornamented on the outſide with a variety of vivid colours, according to the fancy of the owner; and the windows are generally ſaſhed and decorated with curtains. The inſide of the houſes is alſo equally neat and embelliſhed. In the fronts of moſt of them are agreeable gardens, diverſified with gravel walks, ſhell-work, images, and little hedges, or painted rails. The ſtreets are paved with bricks, and watered by rivulets that paſs by the ſides of the houſes; and in order to their being kept clean, they are too narrow to admit of carriages, nor are cattle ſuffered to paſs through them. The ſame attention to neatneſs and ornament is manifeſt in the environs of Broek. The town is chiefly inhabited by perſons who have retired from buſineſs, or who are connected with ſome commercial houſes at Amſterdam. The females are beautiful, but ſingularly reſerved, particularly among ſtrangers. The principal articles of trade are cattle and corn. Broek is diſtant one league W. from Monikedam.

BROERS Bank, lies on the coaſt of Holland, acroſs a village of the ſame name, and the cloyſter of Ten Duyn, running W. N. W. about a league into the ſea.

BROEUCQUES, John Francis du, was born at Mons, in 1690. At a proper age he was ſent to Louvain, and in 1712 was admitted doctor in medicine; having finiſhed his ſtudies there, he returned to Mons, where he was much eſteemed for his profeſſional abilities, and continued practiſing to the time of his death, which happened ſuddenly, July 11th, 1749. He publiſhed in 1725, in 12mo. “Reflections ſur la Methode de traiter les Fievres par le Quinquina.” In this he combats, and ſucceſsfully, ſome of the prejudices ſtill remaining againſt the uſe of that medicine. “Preuves de la Neceſſité de regarder les Urines, et de l'Uſage que les Medecins on doit faire pour la Gueriſon des Maladies,” 1729.

Broeucques, Anthony Francis, one of the ſons of the former, took his degree in medicine at Louvain in 1747, and on the death of his father ſucceeded to his practice, in which he continued until 1767, the time of his death. Two ſmall uſeful works, the reſult of much practice, were publiſhed by him: “Diſcours ſur les Erreurs vulgaires, qui ſe commettent dans le Traitement des Enfans,” Mons, 1754, 12mo. “Reformation des Erreurs vulgaires ſur le Regime que la Medicine preſcrit aux Malades et aux Convaleſcenſe.” Mons, 1757, 12mo. Eloy. Dict. Hiſt.

BROGLING, a method of fiſhing for eels, otherwiſe called Sniggling.

BROGLIO, or Broil, in *Geography*, a town of Piedmont, in the county of Nice, 15 miles N. E. of Nice. N. lat. 44° 12'. E. long. 6° 42'.

BROGNE, a town and abbey of the county of Namur; 10 miles W. S. W. of Namur.

BROILING of Meats, in *Domeſtic Economy*. See Dressing *of Meats*.

BROJO Castra, in *Geography*, a town of European Turkey, in Livadia; 22 miles N. of Livadia.

BROKEN, among *Painters*, a colour is ſaid to be broken, when it is taken down or degraded by the mixture of another.

Broken *Arrow*, or *Clay-Catſka*, in *Geography*, an Indian town in the Creek country, in Weſt Florida, on the weſt ſide of Chatauche river; 12 miles below the Cuſſitah and Coweta towns, where the river is fordable.

Broken-backed, in *Sea-Language*, denotes the ſtate of a ſhip which is ſo impaired and looſened in her frame, as to droop at each end; a diſorder to which the French ſhips are moſt expoſed, on account of their length, &c.

Broken *Bay*, in *Geography*, a capacious inlet, being the æſtuary of the Hawkſbury and other rivers, on the eaſtern coaſt of New Holland, about 8 miles to the northward of Port Jackſon. S. lat. 33° 20'. E. long. 151° 27.

Broken *Iſlands*, a name given to an aſſemblage of rocky eminences, for the moſt part barren, ſituate on the coaſt of Arracan, in the Eaſt Indies, and affording ſhelter only to pirates and thieves. N. lat. 16° 30′. E. long. 94° 28′.

Broken *Knees.* Among *Horſe-Jockies*, broken knees are a mark of a ſtumbler.

Broken *Numbers*, in *Arithmetic.* See Number and Fractions.

Broken *Ray*, in *Dioptrics*, the ſame with ray of Refraction, which ſee.

Broken *Wind*, in *Veterinary Science*, a diſeaſe frequently happening to horſes. The following are the indications which mark its preſence. The breathing of the horſe becomes altered from its natural ſtate, and from an eaſy, gentle, and uniform reſpiration is changed to a painful, laborious, heaving, and violent agitation of the flanks, which riſe by ſeveral ſucceſſive undulations to a preternatural height, then ſuddenly relax and fall downwards beyond the natural extent of theſe parts; the noſtrils become dilated, and held rigid and opened to their utmoſt extent, and the face becomes every where emaciated and contracted: ſuch are the appearances in very aggravated caſes; in more recent caſes theſe appearances are leſs evident, and it is a diſeaſe that can exiſt in every degree of mildneſs or violence.

When the diſeaſe has been of long ſtanding, and little pains or care is taken with the animal, as may be more particularly obſerved in cart horſes, and horſes employed in farmers' work in the country, the abdomen becomes large and pendulous; but in more recent caſes, and in horſes otherwiſe ſituated, we have obſerved that, in the early ſtage at leaſt, the abdomen is rather contracted and is painfully held up in this diſorder.

Great thirſt attends this diſeaſe, perhaps ariſing from the increaſed action or fever which it occaſions, and this has been too often miſtaken for the cauſe of it, and has led to the moſt cruel privations.

There is no diſorder, perhaps, of the horſe, which has ſo much engaged the attention of anatomiſts and of ſpeculative ingenious men, as this, to diſcover its cauſe. It has, however, we believe, never yet been ſatisfactorily explained; at leaſt, there is no author that we are acquainted with that has formed any connected or probable account of it, unleſs perhaps very lately, and which was derived from the ſource we are about to mention.

Haller ſeems to have ſuppoſed it proceeded from a relaxed or ruptured diaphragm. Lower imagined that a relaxation or injury of the phrenic nerves might occaſion it; ſome have aſſured us, after examination, that the lungs are not at all affected in this complaint, and that its ſeat was about the larynx and air paſſages; and ſome of the writers on this ſubject have believed, that the lungs were grown too big for the cheſt, and that this was the ſource of the miſchief, and there have been many other conjectures equally abſurd. Some thought they elucidated the nature of this diſeaſe by comparing it to a conſumption, and others to an aſthma. We truſt ſomething more natural and ſatisfactory will be found in the following ſtatement of our obſervations on this ſingular diſeaſe.

In the year 1795, being engaged in the diſſection of a grey mare that was ſent to the veterinary college to be deſtroyed on account of this complaint; on opening the cheſt, the lungs appeared free from inflammation, being very white; and, as it appeared free from redneſs and increaſe of colour, the general concomitant of diſeaſe, we were led for a while to conſider the lungs as not the ſeat of the diſorder, as others had done (for ſeveral of the pupils were preſent at this diſſection). On cutting into their ſubſtance, no inflammation was perceivable; on examining them more cloſely, we obſerved a ſmall bladder or veſicle on the outſide of the lungs, in the external inveſting pleuritic coat; this was conceived by ſome who were preſent to be a tubercle, and that tubercles might be the cauſe of the broken wind. Suſpecting, however, from its appearance, that it was not ſolid, but contained air, it was punctured, and it immediately ſubſided. This inſtantly ſuggeſted to the writer of this article, that the lungs were actually in a ſtate of *emphyſema*, or that air was contained in a ſtate of extravaſation in their ſubſtance, and which not only ſeemed evidently the caſe in this inſtance, but we have ſince fully verified it by examination and diſſection of a conſiderable number of caſes of broken wind, and found that it is the conſtant appearance. This extravaſation of air in the ſubſtance of the lungs is perhaps occaſioned by a rupture of the air-cells, as ſuggeſted by Mr. Coleman at that time, unleſs it is formed in them, and thrown out by ſome morbid operation of the blood-veſſels, as ſometimes happens in the inteſtines and *vagina;* for the exact way in which this emphyſema ariſes has not been yet aſcertained. It fully explains the cauſe of the white appearance of the lungs, the membranes being ſeparated and divided by air lying between them partially admit the light, alſo the puffy appearance they make, and the crackling noiſe they give on their being handled; all admit of a ready explanation by this diſcovery, and ſo do the ſymptoms which attend the diſorder; for the common air eſcaping, from diſeaſe or a ſudden rupture of the cells, into the membranes compoſing the lungs, thereby compreſs and obliterate more or leſs the natural cavities deſtined for the reception of the air, and thus occaſion the effort we obſerve to overcome this obſtruction, and which naturally induce the appearances we have deſcribed as the ſymptoms attending this diſorder: it alſo accounts for its incurability, and the oppreſſion which a full ſtomach occaſions. As the extravaſation proceeds, the complaint gradually, or ſometimes ſuddenly, increaſes, ſo as to be inſupportable to the animal; and at length being quite uſeleſs, he is neceſſarily deſtroyed. In ſome caſes, the diſeaſe, without much increaſing, may exiſt for many years, and till the horſe dies from other diſeaſe or age. This white appearance of the lungs it is that had deceived ſo long thoſe who had been led through curioſity to examine the lungs in this complaint; it being ſo unuſual to ſee any part in a ſtate of diſeaſe more delicately white than in its healthy ſtate; and ſingular it is, that the extravaſated air ſhould not bring on the inflammation and deſtruction of theſe organs.

Horſes, in bad caſes of broken wind, are obſerved to void air in conſiderable quantities by the anus, as though the extravaſated air of the lungs was abſorbed and carried to the inteſtines; or it is probably only indigeſtion which is the cauſe of this: and the ſmiths, not unfrequently, on this account, cut through and divide the *ſphincter ani*, then the power of cloſing the rectum is loſt, and the air eſcapes without any noiſe; and they are led from hence frequently to imagine they have cured the complaint.

We are now led to conſider what the cauſe is, which in the general eſtimation of mankind leads horſes to this diſeaſe, viz. their being allowed too much water; and here, we apprehend, every obſerver of common feeling and humanity muſt be ſhocked at the recollection of what inſtances have fallen within his own obſervation of cruelty in this reſpect, and of what horſes are daily and hourly ſuffering from the moſt barbarous of all cuſtoms, the denying a ſufficiency of water to ſound horſes to prevent their becoming broken-winded. True it is, that water adminiſtered to horſes in an improper manner, eſpecially after the privation above ſpoken of, may become a cauſe of their being broken-winded; but would any one infer from this, that it is neceſſary that all horſes ſhould be kept almoſt entirely without water, expoſed to a never-ceaſing thirſt, till an opportunity of gratifying the appetite in this way occurs; and the natural and healthful beverage being too largely taken, becomes a poiſon, and induces the very miſchief which ſo much cruel and uſeleſs pains had been taken to avoid; for the horſe that is allowed to drink frequently, and as much as he likes, will never from this ſource become broken winded. No horſe on a common, expoſed to the water of the brook, which he can partake of as often as he pleaſes, will ever become broken-winded from this cauſe, unleſs he had previouſly ſuffered a privation of water, and, in his firſt exceſſes to overcome his thirſt, had injured himſelf. Let us now conſider, under what circumſtances it is advantageous to deprive a horſe for a time of his water. The traveller, who ſtarts in the morning on his journey, would be incommoded, if the horſe's ſtomach was loaded with water; it is quickly abſorbed from the ſtomach, and paſſing off in perſpiration, becomes unſightly and troubleſome: and though it may be true, that perſpiration, not too heavy, by keeping a moiſture on the ſkin, and by its evaporation, induces a coolneſs that might be refreſhing, yet to be inundated with it would be highly diſagreeable. The water ſhould, therefore, be given at an earlier hour in the morning, and ſhould have time to paſs off before the horſe is uſed on the road; and if he be deprived, in a great meaſure, of it during the day, he ſhould be the more plentifully ſupplied with it during the night-time, ſo as not to create a violent thirſt, which can only be gratified, the firſt opportunity that happens, at the expence of his health, or perhaps his exiſtence.

Sorry ſhould we have been, if, after much inquiry into the nature of this diſeaſe, we ſhould have diſcovered that the above practice of depriving horſes almoſt entirely of water, though cruel, was neceſſary; and that we muſt acquieſce, with painful ſenſations, in the uſe of this cuſtom. We are, on the contrary, convinced from experience, as well as the moſt incontrovertible reaſoning, that the practice is as deſtructive and pernicious, as it is cruel and unnatural; for we are aware, the ſuggeſtions of humanity would avail but little, where an oppoſite courſe would beſt ſerve the intereſts of mankind in regard to this animal: however, they are, fortunately for it, not incompatible: on the contrary, all the comforts he can receive will beſt inſure his life and labours.

It ſhould be recollected that the horſe is fed on the dryeſt food, as corn, beans, bran, hay, &c. and this requires, to its being well digeſted, a certain portion of moiſture, which muſt be either derived externally, or from the blood; and horſes are often expected to work hard under theſe circumſtances, to ſweat and perſpire profuſely, and digeſt their food as well, without any water; the conſequence of this is, that their dryneſs and thirſt muſt arrive at a pitch that is ſcarcely governable; and to theſe cauſes we may add, as contributing to the miſchief, the hot, crowded, low ſtables of large towns and cities, where they are often, in conſequence of ſuch treatment, ſeized with various inflammatory complaints, as affections of the limbs, eyes, brain, and lungs, and other diſeaſes. They are ſometimes miſerably allowed to wet their mouths on the road, and this is deemed ſufficient for their wants; or if they by any accident get to water, the conſequences enſue that we have above deſcribed.

With chaiſes and poſt coaches are ever ſeen the greateſt number of broken-winded horſes, becauſe the artificial and miſchievous ſyſtem purſued by the drivers of ſuch vehicles naturally lead to it. It is a practice with the brewers' dray-horſes, both in the metropolis and the country, as often as they come home, to let them go to the trough and drink their fill; among theſe, broken-winded horſes are very rare, though they have all the water they can deſire.

Wetting horſes all over with cold water, while in a profuſe ſweat, we believe not to be ſo injurious a cuſtom as would firſt appear, if the law for its application is underſtood, but, on the contrary, very beneficial and refreſhing. Thoſe who do it ſhould be appriſed of the danger of carrying it to the extent that would chill the horſe, when the worſt conſequences would often enſue: to avoid ill effects, the horſe, after this bathing, ſhould not be left long to ſtand ſtill and chill, or in any cold place, or draft of air; but while his ſkin is yet warm, (as in the caſe of a return-chaiſe,) he ſhould be put in, and drove home, till again perſpiration is fully induced upon the ſkin, when all danger would be prevented; and it would be beſt, perhaps, not to repeat it, at leaſt to the ſame extent on his arrival home: as he is then to ſtand ſtill in the ſtable, there would be ſome riſk of inflamed lungs, inflamed feet, or the gripes, from the blood being confined in the interior of the ſyſtem.

Muddy water is often conceived to be beſt for horſes, and is given them in preference by ſome grooms. A horſe, however, muſt arrive at an extraordinary degree of thirſt before he would touch it; and it is only better, as being in general warmer, having been expoſed to the air and ſun, and is certainly ſafer for horſes than water drawn from a cold ſpring or deep well; the contraſt of temperature being too great with the horſe heated by violent exerciſe.

When the cauſe of any diſeaſe is not underſtood, the theories for its explanation will be vague and unſatisfactory, and the remedies various, often oppoſite, and almoſt infinite, and ſo it has been with this complaint; for there is nothing can equal the abſurd noſtrums recommended in books of farriery, in this complaint in particular, as well as in ſome others; and the farther we go back, the more ſure and ſound is the information reſpecting it. The ideas of the Romans were coarſe and abſurd; but the Greeks appear to have had a better knowledge of it, as is ſeen by the following tranſlation given by Ruellius "*Cum in pulmonibus quid rumpi cœperit, hoc vitium* πνευμωρωξ *Graiis quaſi pulmonis rupta dixeris appellatur*;" and it is afterwards much better deſcribed, in a chapter given by Theomneſtus in the ſame work, and at conſiderable length, too much ſo to admit of being inſerted in this place. Whether, however, the term *Pulmonis rupta* did really convey to their ideas the actual cauſe of the diſorder, may be doubted by the context, any more than broken-wind to an Engliſhman, or *Chevalpouſſif* to a Frenchman. The ancients appear to have had a belief in its being cured, eſpecially before it became inveterate; the remedies they mention, however, may be fairly ſuſpected of poſſeſſing any ſuch power.

We cannot conclude this article more uſefully to the public than by cautioning them againſt a common practice, eſpecially among the lower order of horſe-dealers, of violently ſqueezing the wind-pipe and throat, to aſcertain if a horſe be broken-winded, which is often attended with the moſt miſchievous conſequences; the cough will be in proportion to the violence of the irritation uſed, and this, even in caſes of broken wind, unleſs in the laſt ſtage of it, when other ſymptoms ſufficiently denote it; ſo that, as a criterion we believe it to be of little value.

A grey poney was brought to the Veterinary College, during the profeſſorſhip of M. St. Bel in the year 1791, with great difficulty of breathing, a copious diſcharge of ſaliva from the mouth, and a running at the noſe; ſo far it appeared ſomewhat like glanders; but the glands under the jaw, and all the external parts of the throat were free from ſwelling.

The difficulty of breathing was conſiderable, and threatened ſuffocation; this induced us to ſuppoſe ſome obſtruction was the cauſe, either in the noſtrils, fauces, or larynx.

The operation of bronchotomy was had recourſe to, which immediately relieved him: preſent ſuffocation being thus prevented, our next plan was to remove the obſtacle, which we imagined might be in the noſe. The frontal bone was trepanned, and it was intended to trepan the naſal bone, but this was not executed, for the pus from the former found its way through into the noſe, and the noſe was injected every day, through this opening, with a warm decoction of herbs. As the orifice in the trachea every day became ſmaller, it was difficult to keep in the *canula*, which accidentally a few days after falling out, the horſe was ſuffocated and expired. On opening the head, there was no obſtruction any where to be found; on opening the larynx, the true cauſe was diſcovered.

The internal membrane that lines the larynx, or windpipe, was enlarged or diſtended with a fluid, in a way that prevented the admiſſion of air. This membrane was detached from the ſides of the larynx, and ſo diſtended, that the two portions met each other in the centre of the pipe, forming two hemiſpherical tumours, which acted as valves, and completely excluded the admiſſion of air. On cutting into theſe tumours, they were compoſed of cellular membranes diſtended by a ſmall portion of fluid: the furrounding parts did not bear any marks of inflammation. If theſe tumours had formed on one ſide only, they might have been attributed, perhaps, to ſome puncture, or ſome injury from bleeding, or other cauſe of this ſort; but being on both ſides of the throat, it is probable both ſides muſt have been irritated, to produce it, and nothing ſo likely as violent compreſſion of that ſort we ſee men uſe when they propoſe to try horſes for broken wind; for they endeavour to ſqueeze the pipe till both ſides meet, otherwiſe the horſe will not cough, or only ſlightly. Since this, another exactly ſimilar caſe was brought to one of the ſlaughter houſes of town, while we were caſually ſtaying there, and the horſe was ſaid to die of ſuffocation, they could not tell why. On examining the larynx, a ſimilar miſchief was diſcovered.

During the laſt ſix years, we have opened more than 10 horſes that were broken winded, and uniformly found the lungs emphyſematous: violent breathing and appearances, in every reſpect like broken-wind, attend other affections where the lungs are injured, as in large abſceſſes forming in the lungs, water thrown out in the cheſt in roarers, and even violent pain in any part of the body, will produce appearances reſembling broken wind, which again diſappear when thoſe affections are removed.

When the ſtomach is loaded, eſpecially with water, all the ſymptoms of this diſorder are more eaſily remarked, eſpecially on exerciſe; it is, therefore, one of the moſt ſure means of aſcertaining it; and on this account horſes with this complaint, are in general kept from drinking great quantities of water, which they are much diſpoſed to do, probably from the fever obſerved to attend the complaint, and alſo, perhaps from the blood in the lungs not undergoing ſo completely the changes it ought to do in that viſcus.

Some horſes are differently affected in broken wind to others; the reſpiration is quickened in ſome without much heaving, and the abdomen in ſuch is contracted and hard, inſtead of being large and pendulous. It is ſometimes attended with a cough, which is not deep, but ſhort and hard, as though the lungs reſiſted perfectly the impulſe of this exertion. On exerciſe the cough is much increaſed, after which he ſeems relieved; the head in coughing is held low, his neck ſtretched out as though he endeavoured to bring ſomething from his throat: "*quaſi oſſicula devoraſſet*:" the face has a rigid emaciated appearance, reſembling, though leſs violent, that conſtriction which attends lock jaw. The eyes are often yellow from diffuſed bile; the noſtrils dilated and rigid. The appetite is not affected by it, if any thing it is increaſed.

The writer of this article endeavoured to rupture the cells of the lungs of a ſound horſe, by inflating them, and laying weights upon them, and found that no moderate preſſure would do it; indeed when removed from the body no experiment could be very ſatisfactory, and he deſiſted from farther experiments with this deſign.

BROKER. The origin of the word is conteſted; ſome derive it from the French *broyer*, "to grind;" others from *brocarder*, "to cavil, or riggle;" others deduce broker from a trader *broken*, and that from the Saxon *broc*, "misfortune;" which is often the true reaſon of a man's breaking. In which view, a broker is a broken trader, by miſfortune; and it is ſaid that none but ſuch were formerly admitted to that employment.

Brokers are of ſeveral kinds; exchange-brokers, inſurance-brokers, ſtock-brokers, and pawn-brokers.

Brokers, *exchange*, are a ſort of negociators, who contrive, make, and conclude bargains between merchants and tradeſmen, in matters of money or merchandize, for which they have a fee or premium. See Exchange.

Theſe, in our old law-books, are called *broggers*, and in Scotland, *broccarii*, i. e. according to Skene, mediators or interceſſors in any contract, &c. See Proxeneta.

They make it their buſineſs to know the alteration of the courſe of exchange, to inform merchants how it goes, and to notify to thoſe who have money to receive or pay beyond ſea, who are proper perſons for negotiating the exchange with: and when the matter is accompliſhed, that is, when the money is paid, they have for brokage, two ſhillings per 100l. ſterling.

Theſe, by the ſtatutes of 8 and 9 William III. 6 Ann. c. 16. are to be licenſed in London by the lord-mayor and aldermen, who adminiſter an oath, and take bond for the faithful execution of their office: and any perſon acting without ſuch a licence and admiſſion, is liable to the forfeiture of 500l. and perſons employing them forfeit 50l. This is alſo the caſe at Briſtol, by ſtat. 3 Geo. II. c. 31. They are alſo to regiſter contracts, &c. under the like penalty: and not to deal for themſelves on pain of forfeiting 200l. They are likewiſe to carry about with them a ſilver medal, having the king's arms and the arms of the city, &c. and to pay 40s. a year to the chamber of the city.

In France till the middle of the 17th century, their exchange brokers were called "courtiers de change:" but by an arret of council in 1639, the name was changed for that more creditable one of "agent de change, banque, et finance;" and in the beginning of the 18th century, to render the office ſtill more honourable, the title of "king's counſellors" was added.

At Grand Cairo, and ſeveral places of the Levant, the Arabs, who do the office of exchange brokers, are called "conſuls;" the manner of whoſe negociating with the European merchants has ſomething in it ſo very particular, that we have referred it to a diſtinct article.

The exchange-brokers at Amſterdam, called "makelaers" are of two kinds; the one, like the Engliſh, called "ſworn brokers," becauſe of the oath they take before the burgomaſters; but the owners negotiate without any commiſſion, and are called "walking brokers."—The firſt are in number 395; whereof 375 are Chriſtians, and 20 Jews; the others are nearly double that number; ſo that in Amſterdam there are nearly 1000 exchange brokers.—The difference between the two conſiſts in this; that the books and perſons of the former are allowed as evidence in the courts of juſtice; whereas, in caſe of diſpute, the latter are diſowned, and their bargains diſannulled.

The fee of the ſworn exchange brokers of Amſterdam is fixed by two regulations of 1613. and 1623. with regard to matters of exchange, to eighteen ſols for 100 livres de gros, or 600 florins, i. e. three ſols for 100 florins; payable, half by the drawer, and half by the perſon who pays the money. But cuſtom has made conſiderable alterations herein.

The Jews, Armenians, and Banians, are the chief brokers throughout moſt parts of the Levant and the Indies. In Perſia, all affairs are tranſacted by a ſort of brokers whom they call "delal," i. e. "great talkers." The manner of making their contracts is very ſingular, and has been explained under the article BANIANS.

The French diſtinguiſh two kinds of brokers; one for the ſervice of merchants, the other of manufacturers, artificers, and workmen. The buſineſs of the former is to facilitate the ſale of goods in the wholeſale and mercantile way; that of the other, to procure the goods wanted for manufacturers, artificers, &c. or to ſell their goods when made. At Paris there is ſcarce a company of tradeſmen, or even mechanics, but have their brokers, who are uſually taken out of their body, and make it their ſole buſineſs to negociate in the particular kinds of goods to which ſuch company is by ſtatutes reſtrained. There are brokers for drapery, brokers for grocery, brokers for mercery, &c. There are even brokers for tanners, curriers, cutlers, and the like. Dict. of Comm.

BROKERS, *inſurance* or *policy*, are agents who tranſact the buſineſs of inſurance between the merchant or party inſured and the underwriters or inſurers. Theſe inſurance brokers, from the nature of their employment, ought to be, and indeed generally are, perſons of reſpectability and honour, in whom unlimited confidence may be repoſed. To the broker the merchant looks for the regularity of the contract, and a proper ſelection of reſponſible underwriters: and to him, alſo, the underwriters look for a fair and candid diſcloſure of all material circumſtances affecting the riſk, and for the payment of their premiums. There is uſually an open account between each broker, and every underwriter, with whom he has much dealing. In this account the broker makes himſelf debtor to the underwriter for all premiums, and takes credit for all loſſes to which the underwriter is liable, and which the broker is authoriſed to receive. Indeed, it is generally underſtood, that by the uſage of trade in London, the underwriters give credit only to the broker for their premiums, and can reſort only to him for payment; and that he alone, and not the underwriters, can recover the premiums from the inſured. This point, however, has never been ſettled by any judicial determination. But though the underwriter thus looks to the broker for his premium, and though the broker in his account with the underwriter, takes credit for the loſſes and returns of premiums, which he is authoriſed to receive from the underwriter; yet, ſuch loſſes are not to be regarded as a *debt* from the underwriter to the broker. In the caſe of the bankruptcy of a policy broker, the court of king's bench (23 Geo. III.) held, that though credit for the premiums muſt be given to the broker, becauſe the underwriters know nothing of the principals; yet, that they could not ſet off the loſſes or returns of premium due to the principals, and which *they* only could ſue for, againſt a debt due from the defendants to the bankrupt. In this caſe, the defendants had no commiſſion *del credere*. In a ſubſequent caſe, where the action was brought by the aſſignees of an underwriter againſt the factor, it was determined (26 Geo. III.) that the defendant might ſet off loſſes upon policies ſubſcribed by the bankrupt, and due to the defendant's correſpondents; but there the defendant had a commiſſion *del credere*, which, lord Mansfield ſaid, made him liable to his correſpondents for loſſes, without firſt bringing an action on the policy againſt the underwriter.

Where the merchant happens to reſide at a diſtance from the place where he means to be inſured, the policy is uſually effected by the mediation of his agent or correſpondent there, who, if he be not a broker, employs one, and gives him all neceſſary inſtructions. In order to his being an agent in ſuch a caſe, he muſt either have expreſs directions from the principal to cauſe the inſurance to be made, or elſe it muſt be a duty ariſing from the nature of his correſpondence with the principal. And no general authority which he may have in relation to a ſhip or goods, will make him an agent for the purpoſe of inſuring, on behalf of the parties intereſted. However, though one man cannot, in general, compel another againſt his conſent to become an agent for procuring an inſurance to be effected for him, there are three caſes, in which an order to inſure muſt be complied with: as, *firſt*, where an agent has effects of his principal in his hands; *ſecondly*, where he has been in the practice of making inſurances, and has given no notice to diſcontinue; and, *thirdly*, where he accepts bills of lading ſent him on condition to inſure.

To the office of agent or broker, great reſponſibility attaches; and, in the execution of it, it is the duty of each to conduct himſelf with the greateſt fidelity, punctuality, and circumſpection. For in this, as in all other caſes, where a man, either by an expreſs or implied undertaking, engages to do an act for another, and he either wholly neglects to do it, or does it improperly or unſkilfully, an action on the caſe will lie againſt him to recover a ſatisfaction for the loſs or damage reſulting from his negligence, or want of ſkill. Hence, if a merchant here accept an order from his correſpondent abroad to cauſe an inſurance to be made, but limits the broker to too ſmall a premium, in conſequence of which no inſurance can be effected; he is liable to make good the loſs to his correſpondent; for though, it is his duty to get the inſurance done at as low a premium as poſſible, yet, he has no right ſo to limit the premium, as to prevent the inſurance from being effected. And even a voluntary agent, who has no proſpect of remuneration for his trouble, is liable, provided that he takes any ſtep in the buſineſs.

It is not only the duty of the agent, in tranſacting the buſineſs of inſurances, to conduct himſelf with fidelity and punctuality towards his employer, but he is alſo bound to obſerve the ſtricteſt veracity and candour towards the inſurer: for any fraud or concealment on his part will avoid the policy, even though the inſured be altogether ignorant and innocent reſpecting it.

In an action againſt an agent, or broker, whether for negligence or unſkilfulneſs in effecting an inſurance, the plaintiff is entitled to recover to the ſame amount as he might have recovered againſt the underwriters, if the policy had been properly effected. But he can only recover what, in *point of law*, he might have recovered on the policy; and not what the indulgence or liberality of the underwriters might probably have induced them to pay. In ſuch an action, the agent may avail himſelf of every defence, ſuch as fraud, deviation, noncompliance with warranties, &c. which the underwriters might have ſet up in an action on the policy: but if the agent act in the uſual manner, it will be deemed ſufficient.

There are many reaſons why an agent or broker ought not to be an inſurer. He becomes too much intereſted to ſettle with fairneſs the rate of premium, the amount of partial loſſes, &c.; and though he ſhould not himſelf occaſion any unneceſſary delay or obſtacle to the payment of a loſs, he will not be over-anxious to remove the doubts of others: beſides, he ought not, by underwriting the policy, to deprive the parties of his unbiaſſed teſtimony, in caſe of diſpute.

If an agent or broker, meaning to appropriate the premium to himſelf, and take the chance of a ſafe arrival, repreſent to his employer that an inſurance has been effected agreeably to his inſtructions, the principal may maintain trover for the policy againſt the agent or broker; and, upon proof of a loſs, he ſhall recover to the ſame amount as he would have been entitled to recover againſt the underwriters, if a policy had been effected. Marſhall on Inſurance, vol. i. See Insurance and Policy.

Brokers, *piece*, a ſort of petty dealers in drapery, who ſell fragments or remnants of cloths, ſtuffs, ſilks, and the like, at under price.

Brokers, *ſtock*, are thoſe employed to buy and ſell ſhares in the joint ſtock of a company or corporation; and alſo, in the public funds. The negociations, &c. of theſe brokers are regulated by ſtat. 6 Geo. I. cap. 18. and 7 & 10 Geo. II. cap. 8. which, among other things, enact, that contracts in the nature of wagers, &c. incur a penalty of 500l. and by the ſale of ſtock, of which the ſeller is not poſſeſſed, and which he does not transfer, a forfeit of 100l.; and contracts for ſale of any ſtock, of which the contractors are not actually poſſeſſed, or to which they are not entitled, are void, and the parties agreeing to ſell, &c. incur a penalty of 500l.; and that brokers keep a book, in which all contracts, with their dates, and the names of the parties concerned, ſhall be entered, on pain of 50l.: theſe enactments, however, are little regarded by the gamblers in the public funds. See Stock-jobbing.

Brokers *of houſehold furniture.* See Appraisers.

Brokers, *pawn*, are perſons who keep ſhops, and let out money to neceſſitous people upon pledges, for the moſt part on exorbitant intereſt. Theſe are more properly called pawn-takers, or tally-men, ſometimes fripers, or friperers.

Of theſe is to be underſtood the ſtatute of 1 Jac. I. c. 21. by which it is enacted, that the ſale of goods, wrongfully gotten, to any broker in London, Weſtminſter, Southwark, or within two miles of London, ſhall not alter the property thereof. If a broker, having received ſuch goods, ſhall not, upon the requeſt of the right owner, truly diſcover them, how and when he came by them, and to whom they are conveyed, he ſhall forfeit the double value thereof to the ſaid owner.

But there are ſeveral excellent regulations reſpecting pawnbrokers of later date. By ſtat. 25 Geo. III. c. 48. pawnbrokers are annually to take out a licence on a 10l. ſtamp, within the bills of mortality, and 5l. in any other part of the kingdom, for each ſhop kept, under a penalty of 50l. By ſtat. 29 Geo. III. c. 57. confirmed by ſtats. 31 Geo. III. c. 52. and 33 Geo. III. c. 53, pawnbrokers are allowed the following rates of profit for intereſt and warehouſe-room. For every pledge upon which there has not been lent above 2s. 6d. one half-penny, for any time during which the ſaid pledge ſhall remain in pawn, not exceeding one month, and the ſame for every month afterwards, including the current month in which ſuch pledge ſhall be redeemed; for 5s., one penny; for 7s. 6d., one penny half-penny; for 10s., two-pence; for 12s. 6d., two-pence half-penny; for 15s., three-pence; for 17s. 6d., three-pence half-penny; for 1l., four-pence; and ſo on progreſſively and in proportion for any ſum not exceeding 40s.; and for every ſum exceeding 40s. and not exceeding 10l., at the rate of 3d. nd no more for the loan of every 20s. of ſuch money lenay the month; and ſo in proportion for any fractional ſum. A party applying for the redemption of goods pawned, within ſeven days after the expiration of any month, may redeem them without paying any thing for the ſeven days; and applying after ſeven days, and within ſixteen days, pays the profit for one month and the half of another month; but after the expiration of the firſt fourteen days, the pawnbroker may take for the whole month. He is required to make entries, and to give duplicates. Any perſon fraudulently pawning the goods of another, and convicted before a juſtice, ſhall forfeit 20s. and the value of the goods pawned, &c. to be aſcertained by the juſtice; and on failure of payment, be committed to the houſe of correction for not more than three months, nor leſs than one month, and be publicly whipped; the forfeitures being applied to the ſatisfaction of the injured party, and the defraying of coſts, and the overplus, if any, to the poor of the pariſh. Any perſon counterfeiting or altering a duplicate, may be ſeized and taken before a juſtice, who is to commit the offender to the houſe of correction for not more than three months, nor leſs than one. If a perſon ſhall offer to pawn any goods, refuſing to give a ſatisfactory account of himſelf and the goods; or if there be reaſon to ſuſpect that the goods are ſtolen; or if any perſon, not entitled, ſhall attempt to redeem goods pawned; they may be taken before a juſtice for examination: and if it appear that the goods were ſtolen or illegally obtained; or that the perſon attempting to redeem them has no title or pretence to the ſame, the juſtice is to commit him to be dealt with according to law, provided the nature of the offence ſhall authorize ſuch commitment by any other law; or otherwiſe, for not more than three months, nor leſs than one. A juſtice may grant a ſearch-warrant, and a peace-officer break open doors, and reſtore the goods, if found, to the owner. If pawn-brokers refuſe to deliver up goods pledged within one year, on tender of the money lent and intereſt, a juſtice is empowered, on conviction, to commit them till the goods be delivered up, or reaſonable ſatisfaction be obtained. Goods may be ſold by public auction after the expiration of one year; being expoſed to public view, and catalogues of them publiſhed, and two advertiſements of ſale by the pawnbroker to be inſerted in ſome newſpaper, two days at leaſt before the firſt day's ſale, under penalty of 5l. to the owner. Pawnbrokers, receiving notice from the owners of goods before the expiration of a year, are not allowed to diſpoſe of them, till after the expiration of three months from the end of the ſaid year. They are to enter an account of ſales in their books of all goods pawned for upwards of 10s; and the overplus, in caſe of ſale, ſhall, upon demand within three years, be paid to the owner, neceſſary intereſt, coſts, &c. being deducted: and refuſal to pay the overplus ſhall incur a forfeiture of treble the ſum lent, to be levied by diſtreſs. Pawnbrokers ſhall not purchaſe goods in their cuſtody, or ſuffer them to be redeemed for that purpoſe; nor lend money to any perſon appearing to be under twelve years of age, or intoxicated, or purchaſe duplicates of other pawnbrokers, or buy any goods before eight in the forenoon, and after ſeven in the evening; nor receive any goods in pawn before eight in the forenoon, or after nine at night, between Michaelmas and Lady-day; and before ſeven in the forenoon, and after ten at night, during the remainder of the year, except the evenings of Saturday, and thoſe preceding Good Friday and Chriſtmas day; nor carry on the trade on any Sunday, Good Friday, or Chriſtmas day. Pawnbrokers are to place in their ſhops, a table of rates allowed by this act; and they are required to have their Chriſtian and ſurname, and buſineſs, written over the door, under a penalty of 10l. half to the informer, and half to the poor. Pawnbrokers offend-ing againſt this act, in caſes where no penalty is provided, ſhall for every offence forfeit 5l. leviable by diſtreſs, half to the informer, and half to the poor. Complaint ſhall, in all caſes, be made within twelve months. This act does not extend to pledges for money above 10l., nor to perſons lending money upon goods at 5 per cent. intereſt.

In the cities of Italy, there are companies eſtabliſhed by authority for the letting out money in pawns, called "mounts of piety;" an honourable title, like that of the "charitable corporation," but little becoming ſuch inſtitutions; inaſmuch as the loan is not *gratis*. In ſome parts of Italy, they have likewiſe "mounts of piety" of another kind, wherein they only receive ready money, and return it again, with intereſt at ſo much per annum. At Bologna, they have ſeveral ſuch "mounts;" which are diſtinguiſhed into *frank and perpetual*; the intereſt of the former is only four per cent.; in the latter, ſeven.

BROKERAGE, the fee paid to a Broker.

BROKRY, in *Geography*, a town of Hindooſtan, in the country of Candeiſh; 8 miles S.W. of Burhaupour.

BROLO, a town of the iſland of Sicily, in the valley of Demona; 7 miles W. of Pati.

BROMBERG, a town of Poliſh Pruſſia, ſeated on the river Bro, called alſo *Bidgoſt*, which ſee.

BROME, Alexander, in *Biography*, a poet of the 17th century, was attorney of the lord mayor's court of London in the reign of Charles II., and wrote the greateſt number of the ſongs and epigrams that were publiſhed in favour of the royaliſts, and againſt the "rump," in the time of Oliver Cromwell, and during the rebellion. Theſe, with his epiſtles and epigrams, tranſlated from different authors, were printed in one volume 8vo. after the reſtoration. He alſo publiſhed a verſion of Horace, and left behind him a comedy entitled "The Cunning Lovers." He alſo publiſhed two volumes in 8vo. of the plays of Richard Brome, a dramatic writer in the reign of Charles I., who had been originally a menial ſervant to the celebrated Ben Jonſon. One of the plays of R. Brome, called "The Jovial Crew," was not long ago revived, and ſucceſsfully exhibited. He died in 1652. The editor of his plays, A. Brome, was born in 1620, and died in 1666. Biog. Dram.

Brome, in *Geography*, a town of Germany, in the principality of Luneburgh-Zell, ſeated on the Ohre, and belonging to a juriſdiction of the ſame name, which comprehends a part of the marſhy foreſt of Dromling.

Brome *graſs*, in *Botany*. See Bromus.

BROMELIA, (in memory of Olaus Bromel, a Swede, author of Lupologia, Stock. 1687, 12mo. and Chlori's Gothica, 1694, 8vo.) in *Botany*, Linn. gen. 395. Reich. 427. Schreb. 450. Claſs, *hexandria monogynia*. Nat. Ord. *coronariæ*. *Bromeliæ*. Juſſ.

Gen. Char. *Cal.* perianth three-cornered, ſuperior, permanent; ſegments three, ovate. *Cor.* either monopetalous with three deep diviſions, or of three petals, narrow, lanceolate, erect, longer than the calyx. *Nectary*, adhering to each petal above the baſe, converging. *Stam.* filaments ſix, awl-ſhaped, ſhorter than the corolla, inſerted into the receptacle. Linn. Schreb., *on the corolla or calycine glands*. Boſc., *on calycine glands produced above the germ (thence in ſome degree gynandrous ?)* Juſſ. Anthers erect, arrow-ſhaped. *Piſt.* germ inferior; ſtyle ſimple, thread-ſhaped, the length of the ſtamens; ſtigma obtuſe, trifid. *Pericarp*, a berry or capſule, one or three-celled. *Seeds*, ſomewhat oblong, obtuſe.

Eſſ. Char. *Calyx* trifid, ſuperior. *Cor.* with nectareous ſcales at the baſe.

* Flowers on a common receptacle; corolla monopetalous.

Species, 1. B. *Ananas*, pine-apple. (La Marck Ill. Pl. 223.) "Leaves ciliate-ſpinous, ſharp-pointed; ſpike comoſe." Linn. *Root* perennial, fibrous. *Root-leaves* from two to three feet long, and from two to three inches broad, channelled, often a little glaucous. *Stem* ſhort, cylindric, thick, leafy. *Spike* glomerate, denſe, ſcaly, oval or conic, crowned with a tuft of leaves, ſimilar to the root and ſtem leaves, but ſmaller. *Flowers* bluiſh, ſeſſile, ſmall, and ſcattered upon the common, thick, fleſhy receptacle. *Germ*, half buried in the ſubſtance of the receptacle, which, after the flowers fall off, increaſes in ſize, and becomes a ſucculent fruit, covered on all ſides with ſmall triangular ſcales, and reſembling the ſtrobile of the genus Pinus, whence its common Engliſh name is derived. It is a native of South America, and is ſaid to be found alſo in Africa and the Eaſt Indies. 2. B. *Karatas*. Linn. "Leaves erect, long, narrow; flowers ſeſſile, aggregate, ſubradical. *Root* perennial, fibrous, blackiſh. *Leaves* ſmooth, light-green, diſpoſed in a kind of circle, and leaving a large open ſpace in the middle. *Flowers* numerous, purple, or bluiſh, ſeſſile on the crown of the root, and forming a cloſe, orbicular, convex group. *Calyx* and *germ* covered with a ferruginous down. *Corol.* funnel-ſhaped. *Pericarp*, berry ovate, three-celled, very fleſhy, ſucculent, of an agreeable, acidulous taſte, when ripe. *Seeds* oblong. La Marck, from the MSS. of Plumier. A native of South America and the Weſt Indies. 3. B. *hemiſpherica*. La Marck. "Subcauleſcent; flowers ſeſſile, diſpoſed in a cloſe hemiſpherical group. Nearly allied to the preceding; but the leaves are more open and ſhorter; and the root, when the plant is in fructification, throws up a very ſhort ſtem. La Marck ſuppoſes that the *humilis* of Linnæus is only a variety of the *hemiſpherica*, of a ſmaller ſize, with fewer flowers, and leſs pleaſant fruit. A native of Mexico.

** Flowers upon diſtinct receptacles, with polypetalous corollas; the proper bromelias of Plumier.

4. B. *Pinguin*. Linn. "Leaves ciliate-ſpinous, ſharp-pointed; raceme terminal." (La Marck. Illuſtr. Pl. 223. Gœrt. Pl. 11. *fruit*.) Reſembling B. *ananas* in general habit. *Root* perennial. *Leaves* five or ſix feet long, according to Jacquin, more thorny than thoſe of B. *ananas*, green above, and covered with a whitiſh powder beneath; the inner ones red and ſhorter than the others. *Stem* cylindric, thick, firm, two or three feet high, pubeſcent, ſurrounded by the red interior leaves. *Scales* pale red, or whitiſh, diminiſhing in ſize as they approach the ſummit of the ſtem. *Flowers* roſe-coloured, ſeſſile, in the axils of the upper ſcales, and forming a beautiful, pyramidal ſpike. *Fruit* about the ſize of a walnut, ovate-pyramidal, obſcurely three-cornered, three-celled, covered with a thick ſuberoſe-fleſhy rind, rugged, with confluent dots, and terminated by the permanent, trifid ſtigma reſembling a tuft of ſmall leaves. The fruit is deſcribed by La Marck as a capſule, but is ſaid by Brown (Jamaic.) to have an agreeable ſweet pulp, joined with ſuch a ſharpneſs, that, if ſuffered to continue in the mouth, it will cauſe the blood to ooze from the palate and gums. A native of the Weſt Indies. Deſcription chiefly from La Marck. 5. B. *nudicaulis*. "Radical leaves dentate-ſpinous; ſtem leaves very entire." Linn. *Root* perennial, paraſitical, attaching itſelf to the trunks of large trees. *Root-leaves* two feet long, three inches broad, ſtiff, concave, ſmooth, green, pointed, and edged with ſtrong black ſpines. *Stem* cylindric, firm, thick, two or three feet high, covered with a ſhort down, which generally gives it a whitiſh colour, though it is ſometimes almoſt entirely red. *Stem-leaves* or *ſcales* oblong, very entire, part red or purple, part whitiſh. *Flowers* ſpiked, roſe-coloured, ſeſſile, not accompanied by ſcales,

whence its trival name, and by which it is ſo clearly diſtinguiſhed from the preceding, that it ought to form part of the ſpecific character. *Berries* ovate, of a bright red colour. Its leaves like thoſe of the European *dipſacus*, or teaſel, retain the water from rain and dew, and afford a delicious draught to the hunter and traveller in its native ſcorching climate. Common in the woods of the Weſt Indies, and ſent from the coaſt of Guinea to Mr. Miller. 6. B. *ſpicata*. La Marck. "Radical leaves ſhort and ſpinous; ſtem-leaves very long and very entire, without ſpines." Burm. Amer. *Root-leaves* lanceolate, ſharp-pointed, ſtriated, covered beneath with a whitiſh powder, and a little enlarged at the baſe. *Stem* or *Stems* cylindric, firm, about the thickneſs of the finger. *Stem-leaves* ſword-ſhaped, pendent. *Flowers* of a beautiful red, in a cloſe pyramidal ſpike. *Bractes* lanceolate. *Corolla* three-petalled; petals an inch and a half long, ending in a ſmall purple point. *Stamens* white, included in the corolla. Native of Martinico. 7. B. *lingulata*. Linn. "Leaves ſerrate-ſpinous, obtuſe; ſpikes alternate." Mill. *Root* perennial, fibrous. *Root-leaves*, ſome almoſt lying on the ground, others upright, pale green, concave, many of them rolled up into the ſhape of a horn, and terminated by a ſhort blunt point. *Stem* four feet high. *Stem-leaves* alternate, oblong, pointed, concave, without ſpines. *Spikes*, one terminal, the others in the axils of the ſcales, or upper leaves of the ſtem. *Flowers* ſmall, ſeſſile. *Berries* round, with a ſmall point, in ſimple racemes, of a bright coral red. *Seeds* ſmall, oblong, reddiſh. A native of the Weſt Indies. 8. B. *bracteata*. Willd. "Leaves ſerrate-ſpinous; bractes ovate-lanceolate; ſcape elongated; raceme compound; branchlets ſubdivided; flower ſeſſile." Swartz. *Root* perennial, paraſitical. *Bractes* ſcarlet, membranaceous, very entire. 9. B. *paniculigera*. Willd. "Leaves ſerrate-ſpinous; bractes lanceolate; raceme compound; branchlets ſubdivided; flower peduncled." Swartz. *Scape* more than a foot high. *Bractes* ſcarlet, alternate, membranaceous, half a foot long. *Raceme* two feet long, erect. *Peduncles* an inch long, tomentoſe. 10. B. *Chryſantha*. Willd. "Leaves ſerrate-ſpinous; bractes lanceolate, toothed; raceme ſub-compound, ſhorter than the leaves; flowers peduncled." *Raceme* a foot long, compound at the baſe. *Flowers* yellow. *Peduncles* ſmooth. *Bractes* ſhrivelling. 11. B. *Acanga*. Linn. "Panicle diffuſe; leaves ciliate-ſpinous, ſharp-pointed, recurved." Native of Brazil. This ſpecies, which appeared in the firſt edition of the Species Plantarum, was omitted in the ſecond, from a doubt whether it is ſpecifically diſtinct from B. *Karatas*; but, on farther conſideration, it was replaced by Linnæus himſelf in the Syſtema Naturæ, and has been admitted by the ſubſequent editors of the Species Plantarum, but is not noticed by La Marck.

Plumier, and the other older botaniſts, divided this genus into three; *Anana*, *Karata*, and *Bromelia*. The flowers of the *Anana*, ſays Juſſieu, are in a cloſe ſpike, on a ſcape which is leafy at top; as the ſpike ripens, it takes the form of a fleſhy, ſcaly, eſculent ſtrobile, compoſed of united berries, which are ſcarcely divided into cells, and frequently do not ripen their ſeeds. The *Karatas* have a denſe radical corymbus, and ovate berries. The *Bromelias* are looſely ſpiked or panicled on a ſcape or ſtem; and the fruit can ſcarcely be called a berry. La Marck, if he were not unwilling to increaſe the number of genera without abſolute neceſſity, would be diſpoſed to keep the *Anana* and *Karata* united, on account of their common receptacle and monopetalous corolla, and to ſeparate the reſt which have polypetalous corollas on diſtinct receptacles. The general and eſſential characters, as they ſtand in Linnæus, Schreber, Martyn, and even La Marck, will by no means include all the ſpecies; we have therefore enlarged the former, and abridged the latter, in order to make them ſufficiently comprehenſive.

Propagation, Culture, and Uſe. The Ananas, or common pine-apple, has long been cultivated in the Weſt Indies; but its fruit has only lately been brought to perfection in Europe. The firſt perſon who completely ſucceeded was Monſ. Le Cour of Leyden, in Holland, a contemporary of Mr. Miller: though it was introduced into England ſo far back as 1690 by Mr. Bentick. It is propagated, either from ſeed, or from the crown at the top of the fruit, or from the ſuckers at the ſide of the ſtem. As the method of propagating by ſeed is the ſloweſt, it is ſeldom practiſed in Europe. There are, moreover, here comparatively few plants which bear perfect ſeed, owing, as Mr. Miller conjectured, to the greater number having only ſtaminiferous flowers; and he founded his opinion on the different ſituation of the cells in the two kinds; thoſe which produce ſeed lying near the centre of the fruit, and thoſe which are abortive nearer the rind.

When the ſeed is intended to be preſerved, the ripe fruit ſhould be hung up in a warm room, till all the moiſture of its pulpy part is evaporated, and ſhould afterwards be kept in a dry place. In ſpring, when the weather begins to grow warm, the ſeed ſhould be ſown in a pot filled with good garden earth; the pot ſhould then be plunged in a hot-bed; and when the plants have acquired a certain height, they ſhould be removed into freſh pots, and treated like other tropical plants. The grand eſſential is to guard them from too much moiſture.

The Ananas, contrary to a common opinion, is thought by ſome perſons to be equally good, whether it be produced from the crown or the ſuckers. See the next article.

BROMELIA, in *Gardening*, comprehends a plant of the fine fruit kind, the B. *Ananas*, or pine-apple, and ſome other ſpecies raiſed for the purpoſe of variety.

Of the firſt there are ſeveral varieties in cultivation; but thoſe which principally deſerve the attention of the cultivator, are the queen, which is the moſt to be relied on for a certain and regular crop; the Antigua and ſugar-loaf, the fruit of which is larger; the Montſerrat, the king, and the green pine.

The white pine, called by Miller the queen pine, is the moſt common in Europe. Its fleſh is whitiſh and fibrous; and its rind, when ripe, is as yellow as that of an orange. Its ſmell is highly pleaſant, and it excels moſt of the reſt in ſize and beauty; but it falls ſhort of ſome others in flavour, edges the teeth, and makes the lips ſmart. The yellow pine edges the teeth leſs; but both are exceeded by the ſugar loaf, which is diſtinguiſhed from all the others by the purple ſtripes on the inſide of its leaves. Its fruit, when ripe, inclines to a ſtraw colour. The Montſerrat pine is now rare, in Europe, but is eſteemed one of the beſt in America. The protuberances of the fruit are longer and flatter than thoſe of the common ſort. The ſmooth pine may be a diſtinct ſpecies: its fruit having no crown of leaves, and its root and ſtem-leaves being without ſpines. There are ſeveral other varieties; but as they are continually changing, it is not neceſſary to ſpecify them.

The Karatas is chiefly propagated by ſeeds; for though it throws out ſuckers, they are ill-ſhapen, and produce unſightly plants. The ſeeds ſhould be ſown early in the ſpring, in ſmall pots filled with light rich earth, and plunged into a hot-bed of tanner's bark. When the plants are ſtrong enough, they ſhould be tranſplanted each into a ſeparate pot, and again plunged into the hot-bed, where they ſhould remain till Michaelmas, and then be removed into the ſtove, and treated like the ananas. The penguin is cultivated in preciſely the ſame manner. Neither of them will produce their fruit in England, till they are three or four years old. The latter being very ſpinous makes an impenetrable hedge, and is much uſed in the Weſt Indies for fencing paſture lands.

The other ſpecies are cultivated only for curioſity, and are raiſed from ſeeds brought from their native country, not producing any in England.

Beſides the varieties of the B. *ananas*, or pine-apple, above mentioned, there are others known to gardeners, and ſometimes introduced into cultivation.

The culture of the pine-apple is more difficult, and requires a more exact and nice attention in its management, in this climate, than that of almoſt any other plant. It is only capable of being accompliſhed ſo as to afford good fruit, by the aſſiſtance of the ſtoves of the hot-houſe, with the artificial aid of fire heat. And in order to effect the buſineſs with the greateſt eaſe and convenience, and in the moſt perfect manner, beſides the ſtove of the hot or fruiting-houſe, others are neceſſary for the purpoſe of bringing the plants forward in, till ready to ſet out in the fruiting-ſtove, which are termed nurſery-ſtoves, or pits of ſucceſſive ſtoves. And where large quantities of ſuch plants are cultivated, it is alſo uſeful to have what are termed bark-pits, formed either by deep frames of wood or of brick work ſix feet in width, with ſufficient length, five or ſix feet deep behind, and four and a half in front, having the tops glazed; for the purpoſe of making hot-beds in, for the immediate reception of the crowns and ſuckers from the parent plants, and to prevent the ſucceſſion-ſtove from being crowded too much. Where the whole culture of theſe plants is to be effected in one ſtove only, the plants muſt be raiſed and fruited together, by which practice not one half of the ſame hot-houſe can be occupied at one time with fruiting plants; beſides, the young plants are often liable to be brought forward too rapidly. All theſe different ſtoves and nurſing pits ſhould be provided with proper fires and fire-places, ſo contrived as to work ſteadily and ſave fuel as much as poſſible, as upon this the expence of the culture of theſe plants in a great meaſure depends. See Hot-house *Stove* and Bark *Pits*.

It is remarked by Mr. Nicol, that ſtoves for this uſe are variouſly conſtructed: "ſome are ſingle pitted, ſome double, and ſome even triple; ſome have flues running under, and ſome round the bark-bed." Theſe he conſiders as being very dangerous to the roots of the plants, if overheated. He alſo diſapproves of double and triple ſtoves, as being very uneaſy to work in ſtormy weather, and confining a vaſt quantity of ſtagnant unwholeſome air in dull hazy weather. A ſtove in which there is a perfect command of fire-heat, and which admits a free circulation of air in all parts, is to be preferred, and none are ſo convenient for this purpoſe as ſingle ones. The ſituation for them ſhould be dry, and the bottoms or floors raiſed above the ſurface of the ground. The common practice of having borders for vines to be trained up the rafters, Mr. Nicol conſiders as highly prejudicial to the pine plants.

Preparation of the bark beds.—The circumſtance of importance in the culture of theſe plants, is that of forming the beds in the ſtoves and pits. Theſe are differently conſtituted with different cultivators, and are deſigned for the purpoſe of plunging the pots into, with the plants in them, in order to their due growth and ſupport. Theſe beds are moſtly compoſed of tanners' bark, as being a ſubſtance that not only affords the moſt uniform and durable heat, but which is beſt ſuited to the nouriſhment and growth of the plants and fruit, as well as the moſt manageable. See Bark *bed*.

The great art in making of theſe beds, is that of producing ſuch an uniform moderate bottom heat as may not injure the roots of the plants, while it is ſufficient to promote their regular growth. The author of the "Scotch Forcing Gardener" obſerves, that his idea of "the quantity and quality of bottom heat that is required by the pine," is different from that generally entertained. He never wiſhes the plants, except in ſtriking ſuckers, to ſtand in a bottom heat higher than that of blood heat, and that too of a mild moiſt nature. If the watch ſtick to the depth of the bottom of the pot feels juſt a little warm to the hand, or when applied to the cheek, when the body is of a comfortable temperature, it is ſufficient; and he thinks it conſiſtent with reaſon, that the bottom and ſuperficial heat ſhould correſpond at all times. In order more effectually to attain this end, and that the roots may ſuſtain no injury, he has recourſe to the following rules in forming, turning, and trenching the beds. He never ſifts the tan in the pit, or adds above an eighth part of new, which, if neceſſary, he gives place to by ſkimming off a little of the ſurface of the old. The new tan is never ſuffered to lie within a foot of the ſurface, by which means the pots are inſtantly plunged in the old. He lays the half of whatever quantity of new tan is added in the bottom of the trench, and divides the other equally to within a foot of the ſurface of the beds. In trenching he throws the ſides to the middle, and the middle to the ſides, that there may be an equal mixture of the old tan. Thus the beds are rendered of a mild and equal temperature from the firſt, and continue much the ſame for three or four months, and after the firſt filling they are attended with very little expence for new tan. It is obvious, therefore, that, in filling the pit of a new pinery, it ſhould either be done ſeveral months before the plants are placed in, or the tan ſhould be well ſweated and waſted, by previous turning in an open ſhed, &c. And in other caſes, it is adviſeable not to plunge the pots above half their depth for the firſt two or three months after filling. In adding new tan, it ſhould invariably be thrown up in a heap for eight or ten days before uſing, in order to drip and ſweeten, and ſhould never be applied freſh from the tan yard, as it is wet and apt to heat violently, as well as cake in the beds. It is remarked, that ſome object to tan, as being expenſive and troubleſome in working with; but if this method is practiſed, theſe inconveniences will be inconſiderable; and as the plants require frequent ſhifting, the trouble of ſtirring up the bark-beds at ſuch times is but trifling; the addition of new tan being ſometimes unneceſſary. He is convinced that there is no ingredient which can be ſubſtituted for tan, that will equally anſwer the purpoſe in the pinery, and of courſe recommends the uſe of it in preference to all others, where it can be eaſily procured; and more or leſs of it is always neceſſary. He conſiders oak leaves as the next beſt material, but they cannot be had in many places. Where they are uſed, he adviſes that at leaſt eighteen inches of well reduced tan be laid on the ſurface to plunge the pots in; after theſe, a mixture of ſtable dung and tree leaves of any kind. But they ſhould be well fermented before they are uſed, and at leaſt two feet of reduced tan laid on the ſurface for the reception of the plants. It is ſuppoſed by ſome, that the reaſon of pines being planted in pots inſtead of the ſurface of the beds, is the want of permanent heat in them, as they may be removed with more facility in the time of renewing the bark, &c.; but Mr. Nicol has a different opinion of the matter, ſo that, if the heat of the beds were ever ſo permanent, he would grow them in pots. As all the different plants of any kind do not grow alike in their native climates, much leſs the pine in an artificial one, there is a neceſſity for having, at leaſt, two compartments, and growing the plants in pots, that they may be removed and claſſed according to circumſtances, with the greater eaſe and ſafety. Beſides, many ſorts of plants, in any ſituation, do much better in pots than otherwiſe; of theſe are all of the ſucculent tribe, amongſt which is the pine. There would alſo ſeem another reaſon, which is the looſe incoherent nature of tan not affording a proper medium for the growth and ſupport of ſuch luxuriant plants.

The uſual periods of forming and renovating or refreſhing theſe beds are the beginning of the autumn, as September, October, and the following month, that the heat may be well kept up during the winter, and in the ſpring, as about the beginning of April; a forking up being given in the interval between theſe periods. The pits in theſe caſes ſhould be conſtantly well filled up, to allow for the ſettling that always takes place.

Mould proper for potting the Plants —The moſt ſuitable ſort of earthy material for the culture of the pine-apple plant is that of the firm vegetable kind, or ſome compoſition in which it is a principal ingredient; a large proportion of which ſhould always be provided in a proper ſtate for the purpoſe. The moſt beneficial kind is that which is obtained from the decayed leaves of the oak, or a mixture of it with that from thoſe of aſh, elm, beech, ſycamore, &c. This mould is prepared by collecting them as they fall in the autumn, and placing them in a heap, throwing a very little light mould over them, to prevent their blowing away. They ſhould remain in this ſtate during the winter, and till the beginning of May, when they ſhould be turned over and mixed well together. In this way, by the ſpring following, they will be reduced into a mould proper for uſe. This ſhould, however, be ſifted before it is employed, in order to remove pieces of ſtick or other improper matters. A compoſt of turfy vegetable mould with rich garden ſoil and well rotted ſtable dung from a hot-bed, in the proportion of one-third of the latter, which have remained together for a conſiderable time, is likewiſe recommended by ſome. Brown, ſtrong, loamy earth, when reduced by long expoſure to the air, is another uſeful material; and pigeons' dung that has been at leaſt two years in an heap, and frequently turned and expoſed to the influence of the weather, may be employed: alſo ſhell marle, and ſea or river gravel, which has been ſifted and kept in a dry place, having the ſize of large peas, &c. may ſometimes be employed. The proportions in which they are adviſed to be made uſe of for different purpoſes in the culture of theſe plants by Mr. Nicol, are theſe: "For crowns and ſuckers entire vegetable mould, with a little gravel at bottom, to ſtrike in; afterwards three-fourths vegetable mould, and one-fourth loam, mixed with about a twentieth part of gravel, and a little entire gravel at bottom, till a year old. For year old plants, till ſhifted into fruiting pots, one half vegetable mould, one half loam, to which add about a twentieth part of gravel, and as much ſhell marle with a little gravel at bottom, as above. For fruiting in, one half loam, a fourth vegetable mould, a fourth pigeons' dung, to which add gravel and marle, as above, and lay two inches of entire gravel at bottom."

Raiſing the Plants.—This is the next point of material conſequence in the cultivation of theſe plants, and which is effected either by the crowns produced on the tops of the fruit, the offsets, or ſuckers from between the leaves, and the roots of the old plant. The laſt ſhould never be employed when it can be avoided; of the other two, ſuckers are preferred by ſome, while crowns have the advantage, according to others; but Mr. Nicol juſtly remarks, that if the former have the ſuperiority in being the ſtronger plants, they have likewiſe the diſadvantage of running to fruit more unſeaſonably than the latter. The crowns are procured by twiſting them off the fruit when it is made uſe of, and the ſuckers by breaking down the leaf immediately beneath them, and moving them gently both ways till they come off, which ſhould not be attempted till the under parts appear of a browniſh colour, and ripe, as under other circumſtances they are liable to break in the middle and be ſpoiled. When taken off, they ſhould each of them be cleared of a few of the lower outward leaves about the bottom where they are to form roots, by rubbing them off; ſome alſo pare the under parts of the ſtumps ſmooth with a knife. They are then laid or hung up in a dry place four or five days, or more, that the over moiſture and wounds of the ſtumps, or thick parts of the plants, may be dried up and ſufficiently healed over before they are planted, and the danger of their rotting be prevented. The author of the "Scotch Forcing Gardener," however obſerves, "that if they are perfectly ripe, and the old plants have had no water for a week or two before they were taken off (which they ought not), nothing of this kind is neceſſary." Each plant frequently affords many ſuckers, but rarely more than one crown. The crowns are uſually gathered one by one as the fruit is uſed, and ſtuck into a bark-bed till the whole crop of them, as well as the ſuckers, can be potted together. The plants, after being thus prepared and collected, muſt be placed, according to their ſizes, ſingly in pots three or four inches in diameter, and five or ſix deep, provided for the purpoſe, and filled with entire vegetable mould, as directed above, having the bottoms previouſly laid with clean gravel, of the ſize of horſe beans, to the thickneſs of an inch or ſomething more: ſome, however, only adviſe pieces of ſlate or tile to be put over the holes in the pots. The firſt is probably the beſt method, as preventing the water moſt effectually from ſtagnating about the roots of the plants.

In planting they ſhould be put neither too ſhallow, nor to too great a depth, but have the mould pretty cloſely preſſed round them.

The nurſing pit ſhould be prepared for their reception by having new tan to the extent of a fifth or ſixth part added, but none ſuffered to lie within ten or twelve inches of the ſurface. In theſe beds, when of a due heat, the pots ſhould be plunged up to their brims, in regular order, at the diſtance of two or three inches pot from pot each way, keeping them perfectly level, and the largeſt towards the back parts. Some adviſe a ſlight watering to be immediately given, but others think that neither the crowns nor ſuckers ſhould have any for the firſt fortnight after planting, nor any over-head the firſt winter, leſt they ſhould be injured in their hearts by the damp which it occaſions.

As the plants thus raiſed only produce fruit in the ſecond, or more generally, in the third year's growth, commonly with ſuckers and crowns for future increaſe, and become afterwards of no uſe but as ſtocks for ſupplying a few more ſuckers, there is obviouſly a neceſſity for raiſing freſh ſupplies of plants annually.

Culture in the raiſing Stove.—The management of the plants the firſt year, or while they remain in the nurſery-ſtoves and pits, requires much attention to keep them in a regular and healthy growth by preſerving a continued proper degree of heat in the beds, and a judicious application of water with a ſuitable admiſſion of free air. Mr. Nicol obſerves, that where the plants have been ſtruck in the beginning of September, the beds will moſtly continue of a kindly heat till about the beginning of November, but ſhould then be wrought over, introducing about an eighth part of new tan by trenching it in. But though the plants will in general have made good roots by this period, they do not in common ſtand in need of being freſh potted; ſuch only as are in any degree matted being put into other pots of the next ſize to thoſe in which they are growing. The matted part being ſimply taken off, they ſhould be replaced with the bulb as entire as poſſible. They are then to be plunged in the beds, as in the former caſe, quite up to the brims of the pots, and ſhould remain till the beginning of April; at which period the beds ſhould be again wrought over, as directed above, and the plants have the mould wholly ſhaken from the roots, after which they ſhould be replaced in the ſame pots with freſh mould, and replunged in the beds. In this caſe the roots being freſh ſhould never be diſturbed, the parts that are decayed in the ſtumps or other places being merely removed.

As the heat of the beds, without the aid of fire, will not be ſufficient during theſe periods for the healthy growth of theſe plants, it will be requiſite to have recourſe to that of the artificial kinds. This ſhould be applied about the beginning of October, or the following month, according to the ſtate of the ſeaſon. In the application of this heat great care ſhould be had to keep it ſo moderate as not to force the plants forwards too much, and render them in danger of fruiting unſeaſonably, while it is ſufficient for their perfect growth. The former is ſhewn by their drawing up with long leaves and white hearts; and the latter, by the want of the proper healthy aſpect. To accompliſh this in the moſt certain manner, Mr. Nicol recommends working the ſtoves ſo as to keep the thermometer as near as poſſible to 65°, at ſeven or eight o'clock in the morning and nine at night, until about the firſt of March, and then to increaſe it gradually to 70°, at which it ſhould be maintained ſo long as artificial heat may be required. When the weather is very ſevere, it is likewiſe neceſſary to cover and defend the glaſſes in the night time, as well as occaſionally in the day, with canvas for the purpoſe, cloths fixed with rollers and pullies, or large garden mats. At the above period the plants uſually begin to grow in a vigorous and rapid manner, and require potting again about the firſt or middle of May, at which time the bed ſhould be ſtirred up to about half its depth, and, if neceſſary, a very little new tan worked in. The plants ſhould be put into pots about ſix inches in diameter on the inſide in the tops on a medium according to their ſizes, with the balls entire; and if any of them are matted, that part ſhould be diſplaced, plunging them to the brims at the diſtance of about fifteen inches from centre to centre of the plants in the largeſt kind, and a foot in the ſmaller kinds, giving a ſlight watering at the time. Another potting becomes neceſſary about the beginning of Auguſt; and where there are three compartments the plants ſhould now be removed into the ſucceſſion-houſe, the bark-beds being worked over to the bottom. The plants muſt be put into pots of eight inches diameter, plunging them to the brims at the diſtance of ſixteen inches on a medium, and ſettling them with a gentle watering. At theſe periods a more free admiſſion of freſh air becomes neceſſary, eſpecially when the weather is mild and favourable. Where other houſes or ſucceſſion-ſtoves are employed in the culture of theſe plants, they may at this time be removed into them, in order to be more conveniently managed in their growth the ſecond year.

Culture in the Succeſſion Stoves, or Pits. In the ſecond year's growth it will be neceſſary, towards the middle of November, to work the bark-beds over to laſt during the winter; but the plants need not be ſhifted, the decayed leaves about their bottoms being only twiſted off, and a little freſh mould laid on the ſurface of the pots, where it may be requiſite, replunging the pots to the brims as before. Some adviſe the leaves of the plants to be tied up while they are potting or removing them, in order to keep them from being bruiſed; but the writer juſt mentioned diſapproves of the practice, as he finds they are generally much more bruiſed in tying than when left looſe. The method which he follows, is to have a perſon ſtanding oppoſite to him in the time of potting, which is performed on a ſtage about a yard high, whoſe buſineſs is to hold up the leaves in a looſe, though regular manner, between the arms, and prepare and hand the pots. In this manner he has often been able to ſhift an hundred one-year old plants in two hours. In conveying the plants through the doors of the ſtoves, the perſon ſhould proceed with the back foremoſt, by which means the leaves are ſaved from injury, as the pot goes firſt, and the leaves are drawn backwards after it.

About the beginning of March the plants again require ſhifting, and the bark-beds ſhould then be trenched over as before. The plants at this time muſt be ſhaken out, and replaced in the ſame pots, in new mould, cutting off any of the decayed roots, or the ends of the ſtumps, twiſting off a few of the bottom leaves, plunging them as before in the beds, and giving them a ſlight watering. Towards the firſt of June, the plants ſhould again be ſhifted. The bark-beds being wrought over to about half their depths, and a little freſh tan added when neceſſary, the plants, with their balls entire, ſhould then be placed in pots of about ten inches diameter, plunging them, at the diſtance of eighteen inches from centre to centre, into the beds, and ſettling them with a little water.

In regard to potting, it is remarked by the ſame author, that at all times a few of the bottom leaves ſhould be twiſted off each plant, that freſh roots may be made more readily to furniſh the ſurface, which tends to keep them more ſteady in the pots. The fire heat in theſe caſes ſhould be begun about the ſame period as before, according to Mr. Nicol, and kept to about 60 degrees of the thermometer till the beginning of March, and then gradually increaſed to 65° for the remainder of the ſeaſon. The plants ſhould be refreſhed occaſionally with a little water, according as the earth in the pots becomes dry, or as the ſtate of the weather demands. They ſhould likewiſe have a more free admiſſion of freſh air, whenever the ſeaſon will admit of it without danger.

Culture in the fruiting-ſtove or hot-houſe. The plants raiſed in the nurſery pits, and continued in their growth in the ſucceſſion-ſtoves, having attained a proper ſize and ſtrength, ſhould, towards the latter end of Auguſt, or the beginning of the following month, be placed in the pots in which they are to fruit, in the ſame manner as before, and depoſited in the ſtoves of the hot-houſe, which ſhould have the bark-beds prepared for their reception, by trenching them over to the bottoms, and adding about a tenth part of new tan in a proper ſtate of preparation for the purpoſe, being well blended, and made ſo as to fill up the pits well. The pots in which the plants are now put, ſhould be about a foot in diameter; which ſhould be plunged in the beds to the brims, a gentle watering being immediately given. In potting the plants, Mr. Nicol in theſe caſes adviſes the uſe of a ſmall ſtick to trundle the mould down between the balls and the ſides of the pot, ſo as to leave no cavities, a circumſtance which ſhould be attended to, as being of great utility. The management in this ſtate differs but little from that of the preceding; the chief circumſtance to be regarded, is that of keeping up the heat in as regular a manner as poſſible, with the addition of a due quantity of refreſhing moiſture, and free air. The beds ſhould, about the middle of November, be ſtirred up to half their depth, and a little tan added; but the plants muſt not be ſhifted at this period, only requiring to be re-plunged to the brims again in the beds for the winter. It is the common practice at this time to add a large quantity of new tan, in order to keep up a ſtrong bottom heat through this ſeaſon; than which Mr. Nicol thinks nothing can be more erroneous. He has already remarked, that the bottom and ſuperficial heat ought to correſpond at all times; and if the houſe is to be brought to 60° only for the winter, it follows, he ſuppoſes, that a very moderate bottom heat is ſufficient. The temperature of the houſe being ſo much reduced in winter, is, he concludes, to prevent the plants from ſtarting too ſoon into fruit; and their doing ſo is frequently more in conſequence of too much bottom heat, than irregularity in the temperature of the ſtove. In the beginning of February, which is the beſt ſhewing ſeaſon, the bark-beds will require trenching, which is the only time of the year that the above author adviſes a deviation from the rules given above. From this time the houſe, in his opinion, ſhould be brought as high as 70°, and the bottom heat keep pace with the artificial, for which new tan, to the extent of a ſixth part, ſhould be added. Such of the plants, he obſerves, as are not ſhewn, are healthy at the root, and ſtand erect and firm in the pots, ſhould have a little freſh mould laid on the ſurface by the removal of about two inches of the old. But thoſe that are already ſhewn, and thoſe that are anywiſe unhealthy, or appear ſtunted, ſhould be ſhaken out entirely, and replaced with freſh mould in the ſame pots; but none of the roots, unleſs waſted, ſhould be cut away, or removed. This, ſo far as it reſpects the plants that are ſhewn, he preſumes has not been hitherto recommended; he is conſequently happy in being enabled to do it with confidence, as it has ever been a matter to be regretted, that pines, from the want of ſun and air in the winter months, are apt to be ſtunted, and ſhew their fruit too ſoon; and that fruit ſo ſhewn, ſeldom comes to any conſiderable ſize or flavour; the plants ſo ſtunted, being unable to nouriſh the fruit, and theſe, from the want of ſunſhine in the early months, coming far ſhort in flavour of that matured at a later period. It is added, that the experiment was tried on a dozen of plants, the half of which were in, and the other half paſt, the flower at this time of the year; the reſult was, that they were kept back a full month by the operation; thoſe that were paſt the flower equalled, and thoſe that were only in flower exceeded any of the others of their own forwardneſs at the time of ſhifting. Being encouraged by this ſucceſs, he treated his whole ſtock of fruiting plants in the ſame manner in the following ſeaſons, and they were kept back to a better ſeaſon, and ſwelled their fruit to as good a ſize as thoſe that ſhewed in February. Towards the beginning or middle of May, the bark-beds ſhould be again trenched to the bottom, a tenth part of new tan added, and the plants re-plunged in the beds in the ſame manner as in the preceding caſes, nothing further being neceſſary. Though it is not poſſible to apply the heat conſtantly with that degree of exactneſs that has been recommended, it is of great importance to approach it as near as can be conveniently done, which, by proper attention to the thermometers employed for the purpoſe, may in a great degree be accompliſhed, eſpecially where the perſon who manages the fires, has likewiſe the command of the houſe, which ſhould always be the caſe.

Several ſorts of fuel are employed, but coal or cinders make the moſt regular and durable fires, where they can be obtained. Ground tan heat may alſo be employed where the fire-places are properly conſtructed for the purpoſe. See Hot-house.

With regard to the admiſſion of air, the author of "The Scotch Forcing Gardener" recommends very large portions in the fruiting-houſe while the fruit is ripening, as it is, he thinks, not only eſſential to the flavouring of it, but highly conducive to the ripening and hardening of the ſuckers, which is alſo a point of importance. Though it is the practice of ſome to ſhade their plants from the ſun, the above author ſuppoſes they can never have too much of its influence. It is adviſed, that in winter even froſty air ſhould be admitted in a moderate degree at the top of the houſe, and in freſh weather, at this ſeaſon, to the extent, that the thermometer may not be more than 5° above the fire-heat medium, being continued till the middle of March; after which, and for the whole ſeaſon, not more than 10°. It is obſerved that in winter fires are frequently made in the morning, ſolely for the purpoſe of admitting air, and at the ſame time keeping up the temperature of the houſe, and that although the pine, from its nature, does not appear to quickly feel the effects of bad management, there are few plants in reality do it more ſo, and too due an attention to the temperature of the houſe, eſpecially in winter, cannot be paid, the want of which is ſure to throw the plants into fruit in an untimely ſeaſon.

In reſpect to the application of water in the culture of theſe plants, it is adviſed to be given very ſparingly in dull weather, particularly in the winter ſeaſon, from about the beginning of October to the firſt or middle of March, once in eight or ten days is generally ſufficient, in a ſmall proportion; but from that period plentiful waterings are requiſite, in conſiderable quantities at a time, moſtly once in three or four days. Watering much over head in winter, except in clear weather, is not adviſed; but in the ſummer months it is recommended, as a good practice, to firſt give the quantity requiſite to the root from the ſpout of a watering pan, and then a ſufficient quantity to wet every part of the leaves from the roſe; the reaſon of which is, that the different kinds of pines are formed to require very different quantities of water: the queen requiring more than the king; the Antigua, or brown ſugar loaf, and the Montſerrat and green or ſtript ſugar loaf, a medium between the two, in plants of an equal ſtate of health and ſize.

With the fruiting plants, very large quantities are required from the time they are out of flower, till they begin to colour; but which ſhould then be gradually withheld, and towards its maturity totally, as this increaſes the flavour of the fruit, and perfects the ripening of the ſuckers.

Steaming is conſidered as not only uſeleſs to the health of the pine, but, in dull hazy weather, prejudicial; of courſe, when there are grapes in the hot-houſe, it ſhould be regulated ſo as to ſuit them.

Water well impregnated with air ſhould be uſed at all times, which ſhould be applied about eight in the morning, and from four to five in the afternoon. In the watering of theſe plants, a tin pipe is recommended as uſeful and convenient, for the more ready conducting the water in the quantity intended to any particular plants of the bark-beds. It ſhould be ſix feet long, an inch and half in diameter at the upper end, and at the other about half an inch, and be formed of two or three ſeparate pieces to lengthen or ſhorten at pleaſure. At the longeſt end a kind of funnel ſhould either be fixed, or ſo contrived as to take off and on occaſionally, to receive the water from the watering pot. By this means water is capable of being conveyed to the plants ſeparately, in any proportion, to the hearts of them, without wetting the bark-beds more than is neceſſary to moiſten the earth in the pots, &c. It is particularly applicable in winter as well as in the ſpring, during the bloom of the fruiting plants. In winter it may ſometimes be proper to have ſome conveniences in the ſtove to preſerve water in, that it may be raiſed in its heat a little previous to watering the plants with it.

Some have attempted the culture of the pine-apple without the aſſiſtance of hot-houſes, or ſtoves conſtructed for the purpoſe, ſimply by common deep garden frames, and dung hot-beds, aided by occaſional linings, in order to promote and keep up a regular degree of heat; but this is a very imperfect method, and ſeldom attended with much ſucceſs.

The injuries to which theſe plants are chiefly expoſed during their growth, are brown and white ſcaly inſects, of the *coccus* tribe, and the ant. But as the laſt is ſeldom ſeen, if the former be not preſent, Mr. Nicol concludes that their preſence is in conſequence of that of the inſects on which they ſeem to feed. And the brown ſcaly inſect is conceived to be no further injurious, than by diſcolouring the plants; but the white ſcaled, or bug, is of the moſt miſchievous nature to the plants, as, where it abounds, they never ſucceed well. In order to remove them, Mr. Nicol found the following method anſwer perfectly, in a caſe where the plants were greatly affected. Having prepared a ſtrong heat for the plants in the bark bed of the nurſing pits, he ſhook out and cut every fibre from their roots, whereby they were rendered the ſame as ſuckers at firſt, not excepting thoſe that were in fruit, ſome of which were juſt in flower, dipped them into a liquor prepared by boiling two pounds of ſoft ſoap and flower of ſulphur, with one pound of roll tobacco, and two ounces of nux vomica, in eight gallons of water to ſix; put them into pots of ſix inches diameter, and plunged them to the brims; kept up a fire heat to about 75°, gave them but little air, ſhading them in ſun-ſhine, and afterwards gave them plentiful waterings over head with the ſame mixture, reduced to about half its former ſtrength. He continued this treatment for two whole months; at the end of which he again ſhook out their roots, and waſhed the whole plants in pure water, put them into freſh pots of eight inches diameter, and re-plunged them into a kindly heat in another nurſing pit, treating them in all reſpects as any other plants. He never ſaw a veſtige of the bug afterwards; a few of thoſe plants that were ſhewn, however, died, but the others, he obſerved, produced ſuch fruit as might be expected from plants of ſuch ſizes of any other kind.

Time of Maturation, and cutting of the Fruit. The common ſeaſon for the ripening of this ſort of fruit is from June till September; but from Auguſt to the end of the latter month is the principal period of their attaining to the greateſt perfection. Mr. Nicol remarks, that ſome kinds put forth ſuckers at the baſe of the fruit, which ſhould be rubbed off as they appear; others put forth ſuckers from the root; and as theſe are not proper to be taken into the ſtock, they ſhould alſo be twiſted off, or otherwiſe deſtroyed, as they appear. It is added, that if a plant were to be diveſted of all its ſuckers, the fruit would open to a much larger ſize in conſequence; but as this waſte ultimately tends to the extirpation of the whole ſtock, it is by no means adviſable. It is proper, however, to reduce the number of ſuckers on the plant to two or three at moſt, which ſhould be done in the May ſhifting; and as the ſuckers are about half grown at the time, the cultivator is enabled to chooſe the beſt, and at the ſame time to eaſily deſtroy the others, by breaking out their hearts. Where the increaſe of the ſtock is the object, all ſuckers, even at the root, ſhould be encouraged in their growth. As ſome of the kinds alſo grow on long footſtalks, which are apt to bend down as the fruit gets heavy, they ſhould be ſupported by ſmall ſtakes, or other means, as when the fruit falls over the ſtalk, it is liable to be bruiſed, and the nouriſhment of the fruit retarded.

This ſort of fruit loſes much of its flavour, when ſuffered to grow till fully ripe; where not prevented, it ſhould therefore always be cut by the time it has attained a greeniſh yellow colour, and either left in the heart of the old plants, or laid on the wall-plate, &c. in the ſtove for a few days, after it has been ſeparated from the ſtem.

The ſign of the fruit having attained perfection in moſt kinds, is that of their aſſuming a fine golden colour, with a delightfully fragrant ſmell; at which time it ſhould always be removed. The method of performing which, is by having ſeveral niches of the ſtems with it, and alſo the crown of leaves at the top. It is eaten in the higheſt perfection ſoon after being cut; but when required, it may be preſerved for ſeveral weeks, by putting the ſtem into a bottle of pure water, renewed every two or three days, and placed in a well-dried room of above 60° of heat.

The cultivation of the other ſpecies may be performed either by ſowing the ſeeds obtained from abroad, in the autumn or ſpring months, in pots plunged in the hot-beds of the ſtove, or by means of ſuckers, in the manner of the pine-apple plants. They muſt be kept conſtantly in the ſtove, where they afford much variety, when properly managed, in aſſemblage with other plants of the ſame ſort.

BROMFIELD, William, in *Biography*, who, in a long courſe of practice, attained to the higheſt degree of reputation in his profeſſion, was born in London, in the year 1712, and was initiated in the practice of ſurgery, under Mr., afterwards ſerjeant, Ranby. With ſuch a preceptor, and with a mind ſuſceptible of information, he early found himſelf capable of practiſing on his own account. In the year 1741 he began to give lectures in anatomy and ſurgery, and ſoon found his theatre crowded with pupils. Two or three years after, in conjunction with the reverend Mr. Madan, he formed the plan of the Lock hoſpital, for the ſole reception of that unfortunate claſs of patients, who are affected with the venereal diſeaſe. By a ſtrong and forcible appeal to the humanity of the public, and by ſhewing the advantages that ultimately might redound to them, from the improvements that might be expected to be made, in ſuch an aſylum, in the method of treating that frightful diſeaſe; a ſubſcription was raiſed ſufficient to enable the projectors of it to erect the preſent ſpacious and handſome building, but not for its maintenance, which is ſtill effected by voluntary contributions. To this hoſpital Mr. Bromfield was made ſurgeon, an office he filled with advantage to the patients and credit to himſelf for many years. With a view of contributing to its ſucceſs, he altered an old comedy, "The City Match," written in 1639, by Jaſpar Maine, and procured it to be acted at Drury-lane theatre, in the year 1755, for the benefit of the hoſpital. He was alſo, very early after its being inſtituted, elected one of the ſurgeons to St. George's hoſpital. In the year 1761, he was appointed in the ſuite of the noble perſons, who were ſent to bring over the princeſs of Mecklenburgh, our preſent queen, and was ſoon after appointed ſurgeon to her majeſty's houſehold. In the year 1751, he ſent to the Royal Society a caſe of a woman who had a fœtus in her abdomen nine years, which is printed in their tranſactions for the ſame year. In 1757, he publiſhed an account of the Engliſh night ſhades, the internal uſe of which had been recommended in ſcrophulous caſes; but they had failed in producing the expected benefit with him. Under their uſe, the ulcers became worſe; they occaſioned thirſt, dimneſs of ſight, and, if not cautiouſly given, death. In 1759, he gave "A Narrative of a Phyſical Tranſaction with Mr. Aylet, Surgeon, at Windſor." This is a controverſial piece, and the author clears himſelf from the imputation of having treated his antagoniſt improperly. In 1767, he publiſhed, "Thoughts concerning the preſent peculiar Method of treating perſons inoculated for the Small-Pox." This relates to the Suttons, who were now in the zenith of their reputation. He thinks their practice of expoſing their patients to the open air in the midſt of winter, of repelling the eruption, and checking or preventing the ſuppurative proceſs, too bold, and hazardous. On the whole, however, he acknowledges, they were deſerving of commendation, for the improvements they had introduced, in the treatment, both of the inoculated, and natural ſmall-pox. His next work, the moſt conſiderable one, written by him, was "Chirurgical Caſes and Obſervations," publiſhed in 1773 in 2 vols. 8vo. Though there are much judicious practice, and many valuable obſervations contained in theſe volumes, yet they did not anſwer the expectations of the public, or correſpond to the fame and credit the author had obtained; accordingly in the following year they were attacked by an anonymous writer, ſaid to be Mr. Juſtamond, in a pamphlet, entitled, "Notes on Chirurgical Caſes and Obſervations, by a Profeſſor of Surgery." The ſtrictures contained in theſe notes are keen and ingenious, and, though evidently the produce of ill-humour, yet ſeem to have had the effect of preventing ſo general a diffuſion of the caſes, as the character of the author would otherwiſe have procured them. They have never been reprinted. About this time the author took a ſpacious manſion in Chelſea Park, which he enlarged, altered, and furniſhed in an elegant ſtyle. It is now occupied by ſir Henry Wilſon. Hither he retired, after doing his buſineſs, which he began gradually to contract into a narrower circle. With that view, a few years after, he gave up his ſituation as ſurgeon to the Lock hoſpital. His other appointments he kept to the time of his death, which happened on the 24th of November, 1792, in the 80th year of his age. The above are all the memorials we have been able to collect of this ingenious gentleman, of whom no life has been before written.

BROMIO, in *Geography*, a torrent of Swiſſerland, in the canton of Bellinzone, which takes its riſe in mount Uccallo, or the Vogelſberg, near Splugen, and joins the Teſino in the Levantine valley.

BROMISCUS, in *Ancient Geography*, a town in Macedonia, ſituate, according to Thucydides, in the gulf where the lake of Bolbé diſcharged itſelf into the ſea.

BROMIUS, in *Entomology*, a ſpecies of TABANUS, having a purple band through the eyes, and the body cinereous. Linn. Fn. Sv. Frequent in Germany, and ſome other parts of Europe. Degeer calls this Tabanus maculatus.

BROMLEY, in *Geography*, a market town in the county of Kent, England. The manor of Bromley was given by king Edgar, in 700, to the biſhop of Rocheſter, who, in conſequence, had a palace erected here, and the biſhops of that ſee appear to have made it their ſeat till the preſent time. Near the palace is a ſpring, which has been found to poſſeſs the ſame qualities as the water at Tunbridge Wells. In monkiſh times this was held in high eſtimation, and a chapel was erected near it for the uſe of pilgrims. A college, or hoſpital, was erected at Bromley, by Dr. Warner, biſhop of Rocheſter, in the reign of Charles II. for twenty poor clergymen's widows. This is ſaid to have been the firſt endowment of the kind in England. In conſequence of a bequeſt from the reverend Mr. Hetherington, of 2000l. and of biſhop Pearce, who left 5000l. more, the truſtees have been enabled to augment the annual allowance to the widows from 20l. to 30l. and the chaplains from 30l. to 60l. By another bequeſt from a Mrs. Betenſon, ten additional houſes have been erected, and endowed. Bromley is ſituated on the river Ravenſbourn, at the diſtance of 10 miles S.E. from London. Here are a weekly market on Thurſday, and two fairs annually. The town conſiſts of 424 houſes, and 2700 inhabitants. Wilſon's Hiſtory of Bromley, 12mo.

BROMLEY, a townſhip of America, in Bennington county, Vermont, about 32 miles north-eaſterly from Bennington, containing 71 inhabitants. Alſo, a town in Somerſet county, New Jerſey, about 20 miles N.W. of Brunſwick.

BROMLEY, or ABBOTS BROMLEY, a ſmall market town of Staffordſhire, in England. The adjunct *abbots* was given to it in conſequence of its abbey, which is now entirely deſtroyed. This town conſiſts of one ſtreet, near the centre of which is the town-hall, where the court leet and court-baron of the earl of Uxbridge are annually held. Bromley ſtands in a fine open fertile country, diſtant 129 miles N.W. from London, and 11 from the city of Litchfield. Here are a weekly market on Tueſdays, and three annual fairs. The town contains 202 houſes, and 808 inhabitants.

Near Bromley is Blithfield, the ſeat of lord Bagot; and at two miles diſtance is How-croſs, the ſeat of the earl of Shrewſbury. The foreſt of Needwood, conſidered the great ornament of Staffordſhire, is 3 miles from this place.

BROMPTON. See CHATHAM.

BROMSEBRO, a town of Sweden, in the province of Smaland, which has a large bridge over the river that here diſcharges itſelf into the ſea. A ſmall iſland lies in the middle of the river, on which two ſtones are erected for boundaries. This place is famous for a congreſs, held in 1541, and again in 1572, for ſettling ſome diſputes concerning the arms of the three northern crowns; and alſo, for a treaty of peace, concluded in 1645, between Sweden and Denmark. It is 4 leagues from Chriſtianople.

BROMSGROVE, a town of Worceſterſhire, in England, is noted for its manufactures of worſted, linen cloths, fiſh hooks, needles, nails, &c. It had formerly a manufactory for broad and narrow cloths, but this is removed into Glouceſterſhire. In the reign of Edward I. Bromſgrove ſent two members to parliament, and it has had many privileges conferred on it by different monarchs. Edward VI. founded a grammar ſchool here, which was additionally endowed by ſir Thomas Cooks. The church and town are large and handſome, and the former, from its high ſituation, is approached by a flight of fifty ſteps. It is ornamented with ſome painted glaſs, and contains ſeveral fine monuments. Among theſe is one for judge Lyttleton, 1600; biſhop Hall of Briſtol, 1710; ſir Humphrey Stafford, who was killed in Cade's rebellion; ſir John Talbot, of Grafton; and another aſcribed to a daughter of Henry VII. This pariſh contains twelve manors, and its houſes amounted, in 1801, to 1178, and its inhabitants to 5998, of which 1208 were engaged in manufactures and trade. Bromſgrove is 116 miles N.W. from London, and 12 from the city of Worceſter.

About one mile and a half diſtant is Grafton manor, the ancient ſeat of the earl of Shrewſbury. Hewell-Grange, the ſeat of the earl of Plymouth, is at 4 miles diſtance. Dodford priory is within two miles of Bromſgrove. Naſh's Hiſtory of Worceſterſhire.

BROMUS, in *Botany*, (Βρωμα, *food*,) Linn. 89. Reich. 95. Schreb. 120. Juſſ. 32. Willd. 140. La Marck, Illuſt. 119. pl. 46. Smith Flor. Brit. 38. Claſs, *triandria digynia*. Nat. Ord. *gramina*, graſſes.

Gen. Char. *Cal.* glume, many-flowered, two-valved, ſpreading, collecting the florets into an oblong two-rowed ſpikelet; valves ovate-oblong, acuminate, awnleſs; the lower one ſmalleſt. *Cor.* two-valved; the outer valve the ſize and form of the calyx, concave, obtuſe, bifid, putting out a ſtraight awn generally below its apex; inner one lanceolate, ſmall, awnleſs. *Nect.* two-leaved; leaflets ovate, acute, gibbous at the baſe. *Stam.* filaments three, capillary, ſhorter than the corolla; anthers oblong. *Piſt.* germ top-ſhaped; ſtyles two, ſhort, reflex, villous. *Stigmas* ſimple. *Pericarp.* the corolla cloſely ſhut, adhering to the ſeed, not dehiſcent. *Seed* ſingle, oblong, covered, convex on one ſide, furrowed on the other.

Eſſ. Char. *Cal.* two valved; ſpikelets many-flowered, oblong, two-rowed; (the awn below the apex of the outer glume of the corolla, Linn.) inner glume fringed with ſtrong, diſtant, briſtly hairs, Dr. Smith.

The genus Bromus is entirely artificial, and there are no natural boundaries between it and feſtuca that have been hitherto aſcertained. It was originally aſſumed by Linnæus, that a terminal ſtraight awn ſhould determine a plant to be a feſtuca; but in practice this diſtinction has not been ſtrictly obſerved, and great confuſion has accordingly ariſen in the diſtribution of ſpecies. Dr. Smith's new character will prove a happy one, if it ſhall be found to prevail in all the foreign ſpecies, which have the general habit of Bromus; but we fear it will ſometimes fail. It is already ſufficiently evident, that the poſition of the dorſal awn, and the fringe of the glume, cannot both be admitted into the eſſential character of the genus.

Sp. 1. B. *ſecalinus*, Linn. (Eng. Bot. pl. 1171. Knap. p. 79.) *Polymorphus*, Scopoli, Hudſon, Withering. "Panicle ſpreading; peduncles nearly ſimple; ſpikelets ovate, compreſſed, ten flowered, florets diſtinct, roundiſh." Dr. Smith. Smooth rye brome-graſs. *Root*, annual. *Stem*, about three feet high, ſimple, round, ſmooth, and leafy. *Leaves*, broadiſh, flat, ribbed, rough at the edge and underneath, cloathed above with ſhort, ſoft hairs; ſheaths furrowed but not rough. *Stipule*, very ſhort. *Panicle*, when young, erect, with lanceolate, cloſed ſpikelets; when mature, pendent, with the ſpikelets ſo expanded that the rachis is viſible between them. *Calyxes* unequal, awnleſs; glumes elliptic., ſmooth, three-nerved, membranaceous at the edges. *Florets* roundiſh, ſmooth, rarely downy, ovate, flat; outer glume marked with ſeven ſlight ribs, with a rough and rather ſhort awn; inner glume toothed rather than fringed. Dr. Smith. Knap. Native of England, in Norfolk frequent. 2. B. *multiflorus*, Weigel. Gmelin. Willd. (Knap. Tab. 80.) Conſidered by Linnæus, a variety of ſecalinus. "Panicle ſpreading; peduncles ſeldom with more than one ſpikelet; ſpikelets, ovate-lanceolate compreſſed, fifteen-flowered; florets ſubimbricate, roundiſh." Dr. Smith. *Root*, annual. *Stem*, ſmooth. *Lower leaves*, naked beneath, a little hairy at the edges above. *Upper leaves*, pubeſcent, with a ſhort woollineſs beneath, hairy above; all rough at the edge; ſheath ſmooth. *Stipule*, very ſhort, lacerated, ſcarcely hairy. *Panicle*, as in the former. *Spikelets*, ovate-lanceolate, rather compreſſed, imbricate, and finally rather remote. *Glumes* generally ſlightly pubeſcent, rarely ſmooth. Dr. Smith. 3. B. *mollis*, Linn. ſaid by La Marck, in Encyc. Meth. to be only a variety of B. *ſecalinus*, but the error is corrected in the Illuſt. (Curtis &. Eng. Bot. 1078. Knap. 77.) "Panicle erect, cloſe, compound. Spikelets, ovate. Florets, imbricated, depreſſed, ribbed, downy." Dr. Smith. *Root*, annual, of a few ſimple fibres. *Stem*, erect, about two feet high, ſimple, ſtriated, generally ſmooth; joints ſwelling, often thickly clothed with hairs. *Leaves* and their ſheaths thickly covered with a ſoft hoary pubeſcence. *Stipules*, bluntly jointed. *Panicle*, two or three inches long, erect, at firſt cloſe, afterwards a little expanding; branches half-whorled, the upper ſimple, the lower more or leſs ſubdivided, angular, pubeſcent. *Spikelets*, nearly upright, ovate, acute, rather tumid. *Florets*, from ſeven to ten, cloſely imbricated, elliptical, concave, and depreſſed. *Calyx* of two unequal glumes, ſcarious at their edges, keeled, villous, marked with ſeven or nine ſtrong green ribs. *Cor.* glumes ſimilar to thoſe of the calyx, the external one bearing a rough awn about its own length, a little below its ſummit; inner one membranaceous, without nerves, with a thick green fringed edge. Its compound denſe panicle, and its ſtrongly ribbed, depreſſed, cloſely imbricated glumes, at once diſtinguiſh it from the two former. The B. *nanus* of Weigel is only a ſtarved dwarf variety. Dr. Smith. It is a common plant in meadows; and in ſome parts of the north of England, conſtitutes a principal part of their herbage, but chiefly in fields lately laid down, and owing perhaps not to its being preferred on account of its own excellence, but to the largeneſs of its ſeeds, which are more eaſily gathered, and conſequently more profitable to the collector. Mr. Knapp informs us, that in the ſouthern part of Scotland it is cultivated by itſelf like ray-graſs in England. 4. B. *racemoſus*, Linn. *Polymorphus*, Hudſon, &c. (Eng. Bot. 1079. Knap. 78.) "Panicle, nearly erect, ſpreading, ſimple; ſpikelets ovate, of about ſix imbricated, depreſſed, ribbed, ſmooth florets." Dr. Smith. It agrees in general habit with the preceding, but is more ſlender; its glumes are perfectly ſmooth and ſhining, and their ribs leſs prominent. 5. B. *pectinatus*, Willd. "Panicle, ſpreading; ſpikelets, ovate, ſmooth, inner valve of the corolla fringed, awnleſs." Thunberg. A native of the Cape of Good Hope. 6. B. *lanceolatus*, Willd. "Panicle, erect, ſpreading; ſpikelets, lanceolate, ſmooth, a little compreſſed; awns, at the time of flowering, ſtraight; at the ripening of the ſeed, bent." Roth. *Root*, annual. A native of dry ſituations about the Caſpian ſea. 7. B. *alopecurus*, Willd. "Panicle, cloſe, erect; ſpikelets round, awns divaricated." Vahl. *Spikelets*, nearly ſeſſile, ſpirally twiſted at the bottom. 8. B. *ſquarroſus*, Linn. "Panicle nodding; peduncles ſimple; ſpikelets ovate, twelve-flowered; florets imbricated, depreſſed; awns divaricated." Dr. Smith. *Root*, annual. *Stem*, a foot high, ſimple, ſmooth, ſtriated, leafy. *Leaves* and ſheaths pubeſcent, with a very ſhort deflexed down. *Panicle* with few flowers. *Peduncles*, ſimple, compreſſed, thickening upwards. *Spikelets*, very large, ovate, ſwelling, poliſhed, cloſely imbricated. *Calyx* unequal, nerved, awnleſs. *Corol.* outer glume but little larger than the calyx, many-nerved, bipartite at the ſummit: awns awl-ſhaped, rugged, the length of the glumes; inner glume much leſs, ciliated with a few diſtant briſtles. *Seed*, elliptic, adhering to the corolla, villous at the ſummit. Native of France, Germany, Siberia, &c. Its claim to be admitted into the Britiſh Flora reſts entirely on the authority of Hudſon, who probably miſtook for it ſome variety of B. *ſecalinus*. 9. B. *japonicus*, Willd. "Panicle, ſpreading, branched; ſpikelets oblong, ſmooth; awns divaricated." Thunb. *Root*, annual. A native of Japan. 10. B. *bifidus*, Willd. "Panicle, erect, branched; ſpikelets ovate, with about three flowers; glumes bifid, ſetaceous; awn divaricated." Thunb. *Spikelets*, ſmall, ſmooth. *Glume*, terminated by two awl-ſhaped points of nearly its own length. *Awn* jointed, reflexed. 11. B. *purgans*, Linn. "Panicle nodding, curled; leaves naked on both ſides; ſheaths hairy; glumes villous." *Root*, perennial. *Stem*, a foot and half high, ſtrong. *Leaves*, the breadth of a reed, keeled, green. *Sheaths* with reverſed hairs. *Spikelets*, from eight to fourteen, flowered, oblong. Gathered in Canada by Kalm. 12. B. *catharticus*, Willd. "Panicle, ſpreading, erect, nearly ſimple; ſpikelets, broadly lanceolate, ſtriated, rough; awns ſhort, ſtraight." Vahl. *Root*, perennial, ſcaly. *Sheaths* naked

Spikelets, broader than thoſe of the preceding, acute. A native of Chili, whoſe inhabitants uſe a decoction of its root as a purgative. 13. B. *brizoides*, La Marck, Ill. “ Panicle, erect; ſpikelets, ovate, ſmooth; glumes furniſhed with broad membranaceous auricles.” Native of Mont-Video. Commerſon. 14. B. *inermis*, Reich. “ Panicle, erect; ſpikelets, roundiſh, awl-ſhaped, naked, nearly awnleſs.” Pollich. *Root*, perennial, extremely creeping. *Stem*, a foot and half high, ſtriated, ſmooth. *Leaves* broad, acuminate, ſmooth, dark green; mid-rib whitiſh, rough. *Panicle*, at firſt cloſe and upright, afterwards widely ſpreading, and nodding a little at the top. *Pedicells* ſeveral together, lower ones very long, upper ones very ſhort, often quite ſimple. *Spikelets* containing from ſeven to ten florets. *Glumes of the calyx* unequal, lanceolate, concave, blunt, ſmooth, greeniſh, with broad, ſilvery, thin, membranaceous edges; larger glume with one green nerve, ſmaller with three. *Glumes of the corolla* unequal; *larger* with ſeven green raiſed ſtreaks, awn ſhort, frequently wanting; *ſmaller*, flat, membranaceous, narrower, the edges rolled back, and ſurrounded by two green rough ſtreaks. Martyn quoted from Krocker Flora Sileſiaca. La Marck in his Illuſt. has directed the deſcription in Encyc. Meth. to be expunged. Native of Germany and Swiſſerland. 15. B. *aſper*, Linn. Sup. *ramoſus*, Syſt. Veg. Ed. 13. but not Mantiſſa; *nemoralis*, Hudſon; *hirſutus*, Curtis; *dumetorum*, La Marck. (Curtis faſc. 2. Pl. 8. Eng. Bot. 1172. Knap. 85.) “ Panicle drooping, branched; florets lanceolate, almoſt cylindrical, but ſlightly ribbed; leaves uniform, lower ones hairy.” Dr. Smith. *Root* annual or biennial. *Stem* often ſix feet high, erect; ſmooth in the upper part. *Leaves* ſpreading, broad, of a full green, ribbed, rough, clothed with long ſpreading hairs, all nearly of equal breadth; *ſheaths* rough, with deflexed hairs. *Spikelets* linear-oblong, pendulous, often browniſh, a little downy. *Calyx-glumes* very unequal. *Florets* about nine, roughiſh on the keel; awn rough, ſhorter than the glumes; inner glume cloſely fringed; its membranaceous edges bent in. *Anthers* ſaffron-coloured. Moiſt woods and hedges in England, Germany, Swiſſerland. 16. B. *erectus*, Hudſon, Ed. 1. *pratenſis*, La Marck. (Eng. Bot. 471. Knap. 86.) “ Panicle, erect, a little branched; florets lanceolate, roundiſh, radical leaves narrow, ciliate, with white ſcattered hairs.” Dr. Smith. *Root* perennial, black, downy. *Stem* about three feet high, erect, ſtiff and ſtraight, ſimple, rarely pubeſcent. *Leaves* linear-lanceolate, ſtriated, rough. *Sheaths* ſtriated, ſmooth. *Panicle* nearly ſimple. *Spikelets* linear-oblong, compreſſed, erect, often of a purple hue, either ſmooth or downy. *Calyx-glumes* lanceolate, acute, keeled; the inner one larger, three-nerved. *Florets* from five to nine, imbricated, lanceolate, a little compreſſed, ſomewhat angular, keeled, ſlightly nerved, rough at the keel; awns about the length of the keel, barely dorſal, ſtraight, rough: inner glume rather downy than pectinated. Approaching to feſtuca, in which genus Dr. Smith would have been inclined to place it, if it had not ſo cloſe an affinity with B. *aſper*, an indubitable bromus. Sandy or chalky ſoil in England and France. 17. B. *littoreus*, Willd. “ Panicle nearly erect, rough; ſpikelets oblong, from four to ſix flowered, ſmooth, nearly awnleſs.” Retz. Native of Sweden, Pomerania, Swiſſerland. 18. B. *ciliatus*, Linn. “ Panicle drooping; leaves ſlightly hairy on both ſides, as alſo the ſheaths; glumes ciliated.” *Root* perennial. *Stem* ſlender. *Spikelets* oblong, compreſſed, eight-flowered. *Calyx-glumes* naked, *Corol-glumes* lanceolate, very hairy at their edges, but not on the back. Native of Canada. 18. B. *ſterilis*, Linn. (Curtis Faſ. 1. Pl. 9. Eng. Bot. 1030. Knap. 84.) “ Panicle drooping, moſtly ſimple; florets lanceolate, ribbed, furrowed, leaves downy.” Dr. Smith. *Root* annual, ſmall; fibres capillary. *Stem* a foot and half high, ſlender, ſtriated, leafy to the top. *Leaves* ſpreading, flat, rather flaccid, narrow, ſharpiſh, ribbed, rough at the edges. *Sheaths* cylindric, ribbed, with ſoft deflexed hairs. *Stipule* oblong, torn. *Panicle* large, ſlender, ſpreading, rough. *Spikelets* lanceolate, pendulous, browniſh green, afterwards dark purple, from ſix to eight-flowered. *Calyx glumes* very unequal, the larger one angular, ribbed. *Corol glumes* with 7 or 9 nerves, the two near the edge the greateſt, furrowed, and a little downy between the ribs: the inner glume pectinated with diſtant briſtles. *Styles* growing laterally out of the germen. A native of uncultivated places in England and other parts of Europe. 19. B. *arvenſis*, Linn. (Eng. Bot. 920. Knap. 82.) “ Panicle ſpreading; peduncles branched; ſpikelets lanceolate, about eight-flowered; florets elliptical, imbricated, depreſſed, ſmoothiſh.” Dr. Smith. *Root* annual, ſmall. *Stem* two or three feet high, leafy, ſtriated, ſmooth. *Leaves* ſtriated, a little downy on each ſide, rough at the edges. *Sheaths* thickly cloſed with ſoft hairs pointing downwards. *Stipule* very ſhort. *Panicle* rather erect, many-flowered; branches whorled, ſpreading, rough. *Spikelets* acute; at firſt erect, afterwards drooping; remarkable for a gloſſy appearance, ſcarcely obſervable in other bromi. *Calyx-glumes* very unequal, acute, ribbed, membranaceous at the edge. *Glumes of the corolla*, the outer one rough at the keel, membranaceous at the edge; inner one ſmaller, without nerves, obtuſe, pectinated at the edge. *Seed* villous at the ſummit. A native of England, and other parts of Europe, ſometimes in corn fields, but as frequently in cultivated places. 20. B. *ſpiculi tenuata*, Knapp. (Pl. 81.) “ Panicle branched and drooping; branches ſupporting one or ſeveral ſpikelets; ſpikelets acutely lanceolate; florets ſmooth.” Allied to the preceding. *Stem* from one to three feet high. In its more luxuriant ſtate, branches very long; upright when young, flexile and pendent in maturity. *Spikelets* about eight-flowered. *Calyx* ſmooth, four-ribbed, ſerrated on the keel. *Corolla* ſmooth, but with ſome ſmall ſpines on the back. When the panicle firſt riſes from the ſheathing of the upper leaf, the lower ſtage of branches is generally, though not univerſally, ſupported by two caducous bractes, perhaps peculiar to this ſpecies. Found by Mr. Knapp ſparingly at Seaton, on the coaſt of Durham. 21. B. *geniculatus*, Linn. Man. “ Panicle erect; florets diſtant; peduncles angular; ſtem procumbent at the knot.” *Root* annual. *Stems* ſcarcely four inches high, decumbent to the laſt knot. *Panicle* ſpreading. *Pedicells* not at all attenuated, but compreſſed, obſcurely three-ſided, but with only two ſharp angles, rough. *Spikelets* oblong, four-flowered. *Florets* rough, ſcarcely downy. *Awn* ſtraight, the length of the floret. Native of Portugal. 22. B. *tectorum*, Linn. “ Panicle drooping; ſpikelets linear.” *Root* annual, or at moſt biennial. *Stems* about a foot high, after flowering lying on the ground. *Leaves* narrow, flat, pubeſcent on the lower ſide, white-villoſe on the upper, ciliate towards the baſe; lower ſheaths villous. *Peduncles* capillary. *Spikelets* about five-flowered. *Awn* ſtraight, very ſlender, the length of the glume. Native of the continent of Europe, on walls and dry hills. 23. B. *giganteus*, Linn. *ſtrigoſus*, La Marck, Illuſt. (Curtis Faſ. 5. Pl. 7, Knap. 87.) “ Panicle drooping, branched, with about four florets in the ſpikelet.” Knap. *Root* perennial. *Stem* from four to ſeven feet high, ſmooth and ſhining, ſtriated, leafy. *Leaves* rather erect, acuminate, a foot long, broad, flat, ribbed, rough on both ſides and at the edges; ſheaths long, ſtriated, perfectly ſmooth. *Stipule* ſhort, claſping the ſtem, purpliſh. *Panicle* elongated, branched, many-flowered, the rachis and branches rough. *Spikelets* alternate, ovate-lanceolate, ſmooth, drooping. *Calyx-glumes* unequal, acuminate, ſmooth, keeled; the inner one broad, or with three ribs. *Outer glume of the corolla* ſmooth, ovate-lanceolate, ſcarcely keeled, with five ribs at the ſummit; *awn* terminal, two or three times longer than the floret, capillary, white, ſometimes a little bent; inner glume the length and nearly the breadth of the other, its edge rough, but not ciliated. Dr. Smith, who on that account places it under the genus feſtuca. Mr. Knapp ſays the inner valve of the corolla is minutely fringed, and in his figure, the awn is decidedly dorſal, but neither of theſe particulars is confirmed by our ſpecimens gathered in Yorkſhire. We have, nevertheleſs, continued it among the bromi, induced rather by the general habit of the plant, than by any other conſideration. A native of woods and moiſt hedges in the temperate parts of Europe. 24. B. *rubens*, Linn. "Panicle faſciculated, ſpikelets nearly ſeſſile, villous, awns erect." The *ſcoparius* of Linnæus is ſuſpected by La Marck, and determined by Cavanilles, to be only a variety. *Root* annual. *Stem* from ſeven to ten inches high, a little bent at its lower knots. *Leaves* ſmooth, ſhort, and ſtriated. *Spikelets* ſometimes ſmooth, ſometimes green, often blood-red, but generally paler: awns ſometimes upright, ſometimes divaricated on the ſame plant. Native of Spain. 25. B. *rigens*, Linn. Mant. "Panicle ſpiked; ſpikelets nearly ſeſſile, erect, downy, with about four florets." *Stems* ſix or ſeven inches high, leafy. *Leaves* ribbed, ſlightly hairy on the upper ſurface; ſheaths covering the whole culm. *Spikelets* ſcattered, tenacious. *Awns* nearly erect, the length of the ſpikelet. A native of Portugal, Vandel. 26. B. *triflorus*, Linn. "Panicle ſpreading, with about three flowers." *Stem* near two feet high. *Leaves* with ſhort hairs. *Panicle* ſix or ſeven inches long. *Spikelets* oblong, pointed. La Marck. Native of Germany and Denmark. 27. B. *diandrus*, Curtis; *madritenſis*, Linnæus; *muralis*, Hudſon, 2d Ed. *ciliatus*, 1ſt Ed. *dilatatus*, La Marck; (Curtis Flor. Lond. Faſc. 1. Pl. 9. Eng. Bot. 1006. Knap. 83.) "Panicle upright, ſpreading, ſcarcely ſubdivided; florets lanceolate, ribbed; furrowed with only two ſtamens." Dr. Smith. *Root* annual. *Stems* a foot and a half high, erect, ſtiff, ſlender, ſtriated, ſmooth. *Leaves* often entirely ſmooth; ſheaths ribbed, a little keeled, generally ſmooth, but ſometimes with hairs pointing downward. *Stipule* ſhort. *Panicle* ſcarcely three inches long, erect. *Spikelets* linear-lanceolate, erect, rough, often browniſh. *Florets* diandrous, ſlightly ribbed, the two principal ribs ſtanding peculiarly cloſe to each other. Found by Dr. Withering in Portugal, and by ſir Joſeph Banks at the foot of St. Vincent's rock near Briſtol. It is probably the ſame plant with the B. *rigidus* of Willdenow, who does not appear to have known that the madritenſis of Linnæus is diandrous. 28. B. *ſtipioides*, Linn. Mant.; *incraſſatus*, La Marck. Encyc. Method. "Panicle erect, ovate-pyramidal, ſpikelets ſmooth, about four-flowered, pedicells flattened, and enlarged above." La Marck. *Root* annual. *Stem* ſix or ſeven inches high, ſlender. *Leaves* narrow, ſmooth. *Panicle* upright, rather cloſe, oblong. *Spikelets* ſmooth, greeniſh, or tinged with purple violet. *Florets* three or four, each ſupported by a pedicell, broader and flat towards the top. *Awns* ſtraight and perfectly terminal. A native of Italy and Spain; deſcribed by La Marck from a living plant. 29. B. *ramoſus*, Linn. "Stem much branched; ſpikelets ſeſſile; leaves involute-ſubulate." *Root* perennial, creeping, hard, jointed, producing at different intervals tufts of leaves and ſtems. *Stems* a foot and a half high, ſlender, ſmooth, leafy; throwing out toward the bottom ſhort, alternate generally barren branches. *Leaves* ſhort, glaucous, rolled up. *Spikelets* from three to five, from eight to ten-flowered; awns ſhort, terminal, reſembling thoſe of B. *pinnatus*. La Marck. On the ſhores of the Levant and Portugal. 30. B. *pinnatus*, Linn. "Spike ſimple, erect, two-rowed; ſpikelets ſeſſile, roundiſh; awns ſhorter than the glume: leaves almoſt naked." Dr. Smith. *Root* perennial, a little creeping. *Stem*, a foot and half, or two feet high, erect, ſimple, round, leafy, very ſmooth, ſtraight, and rigid, ſcarcely tapering. *Leaves* ſomewhat erect, lanceolate, acuminate, rather rigid, ſtriated, nerved, rough, often naked, rarely hairy on the upper ſurface. *Sheaths* ſmooth and poliſhed, (Dr. Smith,) *generally hairy* (La Marck and Knapp, with whom our own ſpecimens agree.) *Stipule* ſhort, obtuſe, ciliated. *Spikelets* from ſix to ten, downy, often curved. *Calyx glumes* rather elliptical, ſomewhat awned, many-nerved. *Florets* twelve or more, cloſely imbricated, nerved, and hairy, chiefly towards the ſummit; awn terminal, ſhorter than the glume, ſometimes very ſhort, rough; inner glume ciliated with great briſtles. Native of a dry, calcareous ſoil in many parts of Europe. In England, not uncommon in Yorkſhire, Oxfordſhire, and Kent. 31. B. *ſylvaticus*, Pollich; *gracilis*, Weigel and Willdenow. "Spike ſimple, drooping, leaning one way; ſpikelets ſeſſile, roundiſh; awn longer than the glume; leaves hairy." *Root* fibrous, tufted, perennial. *Stems* two feet high, round, leafy, tapering, very ſlender, and a little drooping in the upper part. *Leaves* ſpreading, flat, pointed, a little rigid, rough, ribbed, more or leſs hairy, bright green. *Sheaths* ſtraight, cloſe, hairy. *Stipule* ſhort, blunt, torn. *Spike* ſimple, drooping, zig-zag. *Spikelets* ſix or ſeven, alternate, ſeſſile, cylindrical, linear-lanceolate, generally downy. *Glumes of the calyx* unequal, with ſhort awns. *Florets* from ſix to nine, imbricated, in the upper part ſtrongly ribbed and rough; awn terminal, rough, generally much longer than the glume: inner glume fringed like the preceding; ſuppoſed by ſome to be only a variety of B. *pinnata*; but they cannot be confounded by any one who is acquainted with their native habits and places of growth. Frequent in copſes and thickets, eſpecially in a gravelly ſoil. 32. B. *criſtatus*, Linn. "Spikelets imbricated in two rows, ſeſſile, depreſſed." *Root* perennial. *Stem* about half a foot high, downy, leafy, lower ſheaths villous. *Spikelets* about 20, downy, four-flowered. *Awn* terminal. La Marck. A native of Siberia and Tartary. 33. B. *diſtachyos*, Linn.; *platyſtachyos*, La Marck. Illuſt. "Spikelets three or four, erect, compreſſed, rigid, ſeſſile; glumes ciliated." *Root* annual. *Stem* from ſix to ten inches high, leafy, a little bent at the knots. *Leaves* rather ſhort, ſoft, and ciliated at their edges. *Spikelets* large, alternate, from two to five. *Florets* eight or nine. *Awns* long, ſtraight, terminal; the external glume ciliated. La Marck. A native of the ſouthern provinces of France.

The laſt ſix ſpecies have the terminal awn of feſtuca. Hudſon and Knapp have accordingly referred the pinnatus, and ſylvaticus to that genus, in their arrangement of Britiſh graſſes; but Dr. Smith, partly on account of their general habit, but chiefly of their ciliated interior coroll glume, has continued them among the bromi. The laſt five have the inflorescence of triticum.

Bromus *glomeratus*, Scopoli. See Dactylis.

Bromus *capillaris*. See Cynosurus.

Bromus, in *Entomology*, a ſpecies of Sphinx (*Zygaena*), deſcribed by Fabricius as a native of Surinam. It is ferruginous, with hyaline wings, and the margin entirely black.

BROMYARD, in *Geography*, is a market town of Herefordſhire, England, ſituated in a valley, in a part of the county which abounds with orchards. It is irregularly built, and badly paved. Many of the houſes are ſmall timber ſtructures, and the market houſe is in a very ſhattered ſtate. The church, an ancient edifice, is now undergoing conſiderable repairs. Bromyard contains 242 houſes, and 983 inhabitants. It has a ſmall weekly market on Tueſdays, and four annual fairs. It is 125 miles W. from London.

BRON, a town in France, in the department of the Eure and Loire, and chief place of a canton, in the diſtrict of Chateaudun, 2½ leagues N. W. of Chateaudun; the place contains 1918, and the canton 10,611 inhabitants; the territory includes 267 kiliometres, and 121 communes.

BRONCHANT, in *Heraldry*, a term uſed by the French heralds to denote the ſituation of any beaſt, when placed on a field ſtrewed with fleur-de-lis.

BRONCHIA, or BRONCHIÆ, in *Anatomy*, the two primary diviſions of the trachea or wind-pipe, which convey the air to the lungs. See LUNGS.

BRONCHIAL *Arteries* ariſe from the deſcending aorta, and accompany the bronchiæ into the lungs. See the deſcription of the ARTERIES and LUNGS.

BRONCHIAL *glands*, abſorbent glands ſituated at the root of the lungs. See the deſcription of the ABSORBENT *veſſels* and *lungs*.

BRONCHIAL *Veins* are thoſe which accompany the bronchial arteries. See the deſcription of the VEINS and LUNGS.

BRONCHOCELE, in *Surgery*, an appellation uſually given to a ſwelling ſeated on the fore-part of the throat, and well known in England by the popular name of a *Derbyſhire neck*, or monſtrous craw. The word *bronchocele* is derived from βρογχος, *the wind-pipe*, and κηλη, *a tumour*. This diſeaſe was familiar to ſome of the ancients, and is deſcribed by Celſus (De Re Medica, lib. vii. cap. 13.), although his account of its nature and treatment is very imperfect. The moſt common ſituation of this ſwelling is the ſides of the *thyroid gland*, and in a great many caſes it ſeems to conſiſt of a general enlargement of that organ; but not unfrequently the gland becomes ſub-divided into various diſtinct fleſhy portions, connected cloſely to each other by cellular membranes.

The form and contents of this tumour will be found very different in different ſubjects; for the moſt part, however, it it is roundiſh during the firſt years of its exiſtence, and moderately compreſſible, endowed with little ſenſibility, highly vaſcular in its texture, not readily going into ſuppuration, and leaving the external ſkin of its natural colour. Some authors have ſaid, that the bronchocele conſiſts of a honey-like matter; others, that it contains little portions of bone and hair; others, that it is inflated by air; and ſome, that it is diſtended by a watery, ſerous, or puriform fluid, &c. Probably moſt of theſe opinions may be occaſionally true; but our own experience inclines us to believe, that in the greater number of caſes the ſwelling is truly ſarcomatous, or fleſhy. This diſeaſe ſhould be diſtinguiſhed from aneuriſm of the carotid or thyroid artery; from ſcrofulous enlargements of the lymphatic glands; and from an extenſion of the membrane lining the trachea, which ſometimes forms a real hernia, by protruding between its annular cartilages. See ANEURISM, SCROFULA, and HERNIA.

Although bronchocele is found in many countries, it exiſts with peculiar frequency at the bottom of mountains, where much wet and heat prevail; from which circumſtance, it has been ſuppoſed by ſome people to be chiefly confined to the ſub-alpine regions. "Le goître eſt une tumeur indolent de la glande thyroïde, qui ſurvient principalement aux habitans des vallées placées au pied des Alpes ſecondaires; et que je nommées, pour cette raiſon, *ſub-ſub-alpines*." Traité du Goître et du Crétiniſme par F. E. Foderé, Paris, An. viii.

Who has not heard of the ſwelled throat of the Alps? an ancient poet inquires,

"Quis tumidum guttur miratur in Alpibus?"

The French name, *goître*, or *gouêtre*, is evidently a corruption of the Latin word *guttur*, the throat; and although M. Louis has maintained, that the bronchocele and the goître ought not to be miſtaken for each other; theſe two names are now ſo univerſally applied to a ſimilar affection, that it would be vain to attempt any correction of the ſuppoſed error. Vide Encyclopedie, Art. *Goëtre*, compoſed by M. Louis. In another place he ſays again, "Il ne faut pas confondre, comme on fait aſſez communement, la *bronchocele* avec une autre tumeur du cou qu'on nomme *goître*." Art. *Bronchocele*, ibid. He would confine the term bronchocele to an hernia of the wind-pipe, which, in his opinion, may be cured by compreſſing the tumour with a ſuitable bandage and cuſhion.

Upon the diſorder which conſtitutes the ſubject of the preſent article, we know not any author who has written ſo amply and experimentally as M. Foderé, who had many opportunities of obſerving the bronchocele in all its ſtages, where it prevailed as an endemic diſeaſe.

This affection more frequently attacks females than males, children than adults, and relaxed or delicate conſtitutions than thoſe which are rigid and vigorous; but it will ſometimes affect perſons of apparently good conſtitutions, and of either ſex, on their going to reſide in the low vallies beneath the Alps, the Pyrenées, the Apennines, &c. where it is endemial and hereditary. Scrofula and rickets ſeem to make the greateſt ravages among people who are liable to bronchocele: but M. Foderé is poſitive that the latter diſeaſe, nevertheleſs, differs materially from the two former; and that the *goître* is purely a local complaint of the neck, unattended with the leaſt danger, except it occaſion violent mechanical preſſure by the enormous bulk of the ſwelling. Vide chap. v. § 19, to 24. Traité du Goître et du Crétiniſme.

The remote phyſical cauſes which have been aſſigned for this diſeaſe, are various and unſatisfactory: viz. the drinking of hard, cold, or ſnow-water; the uſe of alimentary ſubſtances not ſufficiently nutritious; the repulſion of ſome cutaneous diſorder; the abuſe of vinous or ſpirituous liquors, &c. Theories, which have been founded on any of theſe ſuppoſed cauſes, are too hypothetical, and are contradicted by numerous facts; beſides which, the bronchocele will be found to prevail where none of theſe cauſes exiſt in a ſtriking degree, as ſeveral writers have ſufficiently proved. The diſeaſe, however, is known to predominate moſt in countries affected by great humidity of the atmoſphere, joined with exceſſive heat; it augments in the ſpring-time, and diminiſhes in the autumn; it is leſs prevalent in a cold and dry winter, than during a ſeaſon of dampneſs and moderate warmth; it is even ſaid to be influenced in its progreſs, wherever it is endemial, in exact proportion to the degree of moiſture indicated by the hygrometer. Theſe facts are eſtabliſhed by the obſervation of Meſſrs. Foderé and Villars, after numerous and varied experiments.

We cannot, moreover, acquieſce in the explanation which has been offered reſpecting the proximate cauſe of this diſeaſe, or the phenomena of which it conſiſts. The thyroid gland, ſome writers tell us, contains a viſcid humour, which continually lubricates the larynx and trachea by its exudation; and it is the ſtagnation or detention of this mucus in the capſules of the gland, ſay they, which forms the diſorder in queſtion. But, we aſk, have the uſes of the thyroid gland been aſcertained? Has its minute ſtructure been developed? Has there been any muciferous ducts or outlets detected? Is it really a ſecreting organ? Further, we are told, that the humid air is imbibed by the cellular texture of this gland; that it thereby becomes expanded, or tumefied; that its ſecretory ducts are thus obſtructed; and that bronchocele conſiſts altogether in this laxity or atonic ſtate of the organ. But, ſurely, all this is hypothetical; for, even ſuppoſing the imbibition of moiſt air to take place (which, however, remains to be proved), would it not be received into the abſorbent veſſels, and tranſmitted to the thoracic duct? And, why ſhould it be imagined, that the thyroid gland imbibes the moiſt atmoſpherical air, more than other parts of the body which are equally expoſed?

Upon the whole, we ſee no reaſon for adopting the above opinion, however reſpectably it has been ſupported; and we do not feel competent to offer any explanation ourſelves of the proximate cauſe of this diſeaſe. Perhaps ſome light will be thrown on the inquiry when we are better informed as to the economy and natural uſe of the thyroid gland; but, for the preſent, we are without *data*, or ſuitable analogies, to afford a legitimate concluſion. We proceed, therefore, to the means which have been employed for the prevention and cure of this complaint; a ſubject on which much has been ſaid and written, although not to the entire ſatisfaction of practitioners or patients in general.

As to preventive meaſures, they muſt chiefly conſiſt of ſuch as tend to meliorate the ſoil and air of thoſe places wherein the bronchocele is endemial. If it be a fact that marſhy lands, an humid atmoſphere, deep and woody vales, ſurrounded by lofty hills which intercept the ſalubrious breezes, are among the phyſical cauſes of this diſeaſe, the prevention muſt partly depend upon the removal or avoidance of ſuch cauſes; and this ſhould be eſpecially attended to by perſons who are naturally of a delicate or ſoft fibre, and are therefore prediſpoſed to debilitating complaints.

The curative means are either medical or ſurgical. The internal remedies, which have acquired the greateſt reputation, are burnt ſponge, ſoap, ſulphurated kali, prepared natron, and artificial ſoda-water. It has been adviſed to exhibit a doſe of calomel and neutral ſalts once a week, during the uſe of the other medicines; likewiſe to keep the neck warm; to reſide in a dry pure atmoſphere; and to ſwallow the above-named remedies very ſlowly, which is particularly inſiſted on if the patient take theſe medicines in a ſolid form. Authors have alſo alleged, that benefit is ſometimes derived from the external application of mercurial ointment, bliſtering plaſter, ſoap liniment, camphorated oil, dry frictions, moderate compreſſion, and electrical ſparks. But of all theſe means, the burnt ſponge made into lozenges, has received the higheſt encomiums. For our own part, we have been diſappointed in our expectations from theſe lozenges; although many practitioners conſider them as almoſt infallible, if properly adminiſtered and perſevered in. The following is the formula recommended by Mr. Ring:

Take of Burnt ſponge, two ounces;
Powdered gum Arabic, two drams;
Powdered cinnamon, half a dram;
Simple ſyrup, enough to form the whole into a maſs, which is to be divided into forty-eight troches. Care muſt be taken that no more ſyrup be uſed than is abſolutely neceſſary to make the dry ingredients properly cohere; for which reaſon, it muſt be added ſlowly, and the maſs muſt be well beaten. The lozenges are to be dried before a fire, on a plate which has been ſlightly oiled, to prevent them from ſticking; and they muſt be kept in a bottle or gallipot, tied over with a bladder.

One of theſe tablets is to be exhibited three times a day, for a conſiderable time. Some practitioners, indeed, have given ſo much as ſix or eight drams of the burnt ſponge daily, without any inconvenience; and, too often, without any benefit to their patients. It would be deſerving the attention of ſurgeons, to aſcertain, if poſſible, the cauſe of this diverſity in their ſucceſs; and whether the nature of the affection, in the caſes ſaid to have been cured by the uſe of the ſponge, does not eſſentially differ from thoſe in which this remedy has been taken largely to no good purpoſe.

Dr. Herrenſchwand, of Berne, thinking that the burnt ſponge has a tendency to injure the ſtomach, and produce a leucorrhœa, adviſes that it ſhould not be calcined, but employed in decoction; and this, he ſays, is equally efficacious. Whereas, M. Foderé prefers it to be only half-burnt, and mixed with honey and canella alba; of which the bulk of a large nut is to be taken three times a day, for ſeveral weeks.

This laſt author tells us, he has ſeen an extremely large ſwelling of the neck diſperſed by the daily uſe of thirty grains of the ſulphate of potaſh, diſſolved in a pint of water: and he conſiders the cure as more eaſily effected, by requiring the patient to take a cathartic every week, during the whole time of the medicinal courſe; by keeping the neck very warmly covered; by ſwallowing the burnt ſponge, &c. inſenſibly, or holding it a conſiderable while in the mouth; by beginning the remedy at the decline of the moon; and by changing the air to a dry or open ſituation, which, indeed, he regards as indiſpenſably neceſſary.

The ſucceſs will alſo much depend on the patient's being young, and otherwiſe healthy; but if the ſwelling be of a ſcirrhous or indurated nature, there is very little hope of relief, except by a manual operation, ſuch as Cornelius Celſus long ago recommended. However, the extirpation of the tumour can hardly be undertaken, unleſs it be detached, encyſted, and ſeated at the fore part of the neck.

The ſwelling being ſituated in the vicinity of ſo many important organs, will deter a ſurgeon from haſtily propoſing its entire exciſion; beſides, there are caſes related, in which the mere opening of the cyſt has effected a cure; and, in theſe caſes, the contents were either evacuated at once, or gradually leſſened by ſuppuration. When there is an evident fluctuation of matter, a ſeton drawn through the tumour might perhaps be advantageous; or, as Celſus and others have ſuggeſted, the application of a cauſtic might be partially uſeful: but, if the life of a patient be not endangered by this diſeaſe, it would be prudent to avoid ſuch irritating means. Although the ulcer which remains after the uſe of a cauſtic will ſometimes be exceedingly diſtreſſing and difficult to heal, we are not of opinion, with Mr. Benjamin Bell, that it ever "degenerates into a cancer."

We ought not to conclude this article without alluding to a celebrated remedy prepared and ſold at Coventry, for the cure of bronchocele. It is generally ſuppoſed to be leſs efficacious than burnt ſponge alone, and to conſiſt of equal parts of ſponge, cork, and pumice ſtone, calcined; which is formed into a bolus, with ſugar or ſyrup, to be laid under the tongue every night. Mr. Proſſer, who publiſhed an account of the bronchocele and its treatment in 1771, recommends the following powders, in preference to the Coventry medicine:

℞ Cinnab. Antimon. opt. levig. ℈j.
Milleped, pp. & pulv.
Spong. calcin. āā gr. xv. m. f. pulvis.

One of theſe is to be taken an hour or two before breakfaſt, for two or three weeks; and after the interval of about a fortnight, they are to be again renewed; and three of the following pills are to be taken at bed-time, during the ſecond courſe of the powders.

℞ Pil. Mercurial ph. nov. ℥ ſs.
F. Pil. N° 48. æquales.

The doſe is to be adjuſted to the age and conſtitution of the patient, who ſhould be prepared for this courſe by two or three previous purges, and avoid taking cold. If theſe means be uſed for about a month or ſix weeks, without any external application, Mr. Proſſer has no doubt of ſucceſs. However, the patient ſhould be under twenty-five years of age. At this age the cure is uncertain; but at a more advanced period of life it is much more improbable, and ſeldom or ever ſucceeds. Mr. Gooch, in his "Medical Obſervations," mentions an *aqueous* BRONCHOCELE; and ſo does Mr. Davies in the Med. and Phyſ. Journal, N° 71, Jan. 1805.

BRONCHORST, Peter, in *Biography*, a painter of perſpective and hiſtory, was born in 1588 at Delft, where he learned the art of painting. His ſubjects were views of ancient and modern churches, which he executed with great ſucceſs. In the council chamber at Delft are his "Judgment of Solomon," and "Chriſt driving the money-changers out of the Temple;" deſcribed as performances in which the architecture is elegant, and the figures carefully finiſhed. He died in 1661. Pilkington.

Bronchorst, John-Van, a painter of hiſtory and landſcape, was born at Utrecht in 1603; and as he diſcovered an extraordinary genius before he was 11 years of age, he was placed under the direction of John Verburg. He was afterwards for ſome time aſſiſtant to Peter Mattys, a painter on glaſs, at Brabant. After his return to his own country, he entered the ſchool of Cornelius Poelemburg, and being charmed with his taſte of deſign, pencilling, and colour, imitated his ſtyle with great ſucceſs. Till his 36th year he painted on glaſs; but after that time in oil, after the manner of Poelemburg, and obtained a laſting reputation. In the choir of the new church at Amſterdam, there are three of his paintings on glaſs, which are exhibited as curioſities; and in the ſame church, on the folding doors of the organ, are three hiſtorical paintings in oil, "The Triumph of David over Goliah;" "The anointing of Saul;" and "The attempt of Saul to kill David while he was playing on the harp," which are excellent performances. He alſo amuſed himſelf with the point; and ſome landſcapes from Poelemburg, and other ſubjects from his own compoſition, are attributed to him. Pilkington and Strutt.

Bronchorst, Peter, was born at Leyden in 1648, and, from an obſcure original, arrived, by the power of his own genius and inceſſant application, without any maſter, at diſtinguiſhed excellence as a painter in water-colours. His ſubjects were birds and animals of all kinds, which he copied after nature with uncommon life, exactneſs, and expreſſion. He died in 1723. Pilkington.

Bronchorst, or Bron-horst, in *Geagraphy*, a town of the United Dutch States, in the county of Zutphen; 5 miles N. of Doeſburg.

BRONCHOTOMY, in *Surgery*, is the operation of cutting into the trachea or wind-pipe; from βρογχος and τεμνω. It has been alſo named Laryngotomy, and Tracheotomy; although there can be no reaſon whatever for employing the latter terms in preference to the uſual appellation. Mr. Benjamin Bell, however, has ſaid, that as bronchotomy "conſiſts in an opening made into the trachea, and not into the bronchiæ, it ought more properly to be named *tracheotomy*:" but to ſuch hypercriticiſms, we can only reply, in the language of M. Petit-Radel: "Quelques nomenclateurs, peu inſtruits dans la langue Grecque, et ignorant que les ancients déſignoient le trachée ſou le nom de βρογχος, qu'ils ont confondu avec βρογχια, qui ſont les anneaux des ſubdiviſions de ce canal, ont mieux aimé déſigner cette operation ſous le nom de *trachéotomié* ou *laryngotomie*; mais ſes dénominations n'ont pu généralement prevaloir." Encyclop. Méthod. Art. *Bronchotomie.*

The operation of *bronchotomy* may be practiſed, with greater or leſs probability of ſucceſs, in caſes where a patient is in danger of ſuffocation, from an obſtacle in the trachea, or a conſtriction of the glottis. There may be likewiſe a neceſſity for our reſorting to this operation, where the trachea is compreſſed by a tumour externally, or where the tonſils and parts adjacent become ſo enlarged as to impede reſpiration conſiderably. In ſhort, ſhould any mechanical cauſe be ſuppoſed to exiſt, of threatening ſuffocation and impending death, the ſurgeon's duty will be too plain and imperious to admit of heſitation: an inciſion muſt be made into the trachea without a moment's delay, unleſs ſome other obvious remedy can be ſuggeſted for the patient's reſtoration. The caſes to which we here allude are ſo various, that they cannot be all enumerated; but no well inſtructed practitioner will ſuffer any perſon to loſe his life for want of an operation ſo eaſily performed, ſo little attended with bad conſequences in itſelf, and ſo certainly efficacious in a multitude of examples which frequently occur.

Perhaps few, if any chirurgical means can be propoſed for the relief of a patient in extreme danger, ſo revolting to mankind, as this of bronchotomy. A general and long eſtabliſhed prejudice prevails againſt it, ariſing from an erroneous opinion, that "wounds of the wind-pipe are always mortal." Although this opinion is refuted by almoſt daily obſervation, and numbers of people have recovered after cutting their own throats (i. e. dividing their trachea) in the moſt horrid manner; yet ſtill, the popular notion exiſts, and muſt be encountered. It is therefore adviſeable, prior to the performance of this operation, that all the reaſons which influence the ſurgeon's deciſion, ſhould be ſtated fairly, and the probable or certain conſequences of a different procedure be judiciouſly repreſented to the patient or the bye-ſtanders, to prevent any groundleſs blame in the event of ill-ſucceſs.

As the cauſe of interrupted reſpiration may be different, on different occaſions, ſo muſt there be a variety in the manner of performing this operation, according to the exiſting circumſtances: in ſome caſes, a ſimple inciſion into the wind-pipe, about half an inch below the crycoid cartilage, will effect the relief we wiſh for; but, in other caſes, the wound muſt either be kept open by a canula; or a portion of one or two of the cartilaginous rings muſt be cut out, in order that the patient may continue to breathe with facility through the artificial orifice. Sometimes, again, it may be requiſite to make a ſecond opening, with a view to aſſiſt us in the extraction of a foreign ſubſtance; and when that object ſhall have been attained, probably there will be no further neceſſity for an artificial air-hole remaining open in the trachea, ſo that the external as well as the internal wound may be healed with all convenient ſpeed.

When it is required that the patient ſhould breathe for ſome time through the wound, it would, we think, be generally preferable to cut out a portion of the cartilage, (which has been often done with ſafety,) rather than to haraſs the patient by keeping a metallic canula in the wound, between the divided cartilages. An inceſſant coughing and ſenſe of uneaſineſs will be likely to enſue from the preſence of a canula, which might, therefore, be a ſource of greater miſchief than could poſſibly ariſe from the removal of a ſmall piece of cartilage. Every perſon knows what diſtreſſing conſequences immediately follow on the admiſſion of only a crumb of bread into the glottis: and how aggravated muſt the ſenſations of a man be, who has a ſilver tube remaining in his larynx or trachea for ſeveral days, eſpecially if it happen to touch the oppoſite parietes! Should an extraneous body be lodged in the trachea, it is not always capable of being removed without making an inciſion acroſs three or four of the cartilaginous rings, (i. e. in the direction of the wind-pipe itſelf,) exactly oppoſite, or a little below the foreign ſubſtance.

Several kinds of inſtruments have been propoſed for executing this ſimple operation; ſuch as concealed lancets, trocars and canulæ, guarded ſcalpels, &c. But, we cannot conceive what hazard or difficulty ſhould occur to a ſurgeon who is at all uſed to handle a common diſſecting knife, in making a longitudinal inciſion through the fore-part of the neck and trachea. We are very much inclined to ſimplify all chirurgical operations and inſtruments; rather than to make a parade, which ſometimes tends to magnify real difficulties, or to create imaginary ones in the eyes of a young practitioner. Beſides, the operation of which we are now treating is among the number of thoſe which uſually call for prompt and definitive meaſures; wherein the ſurgeon has no opportunity, (except in large cities,) to ſearch for curious inſtruments, and, therefore, ſhould feel confident, that his buſineſs may be well performed without them. The apparatus eſſentially neceſſary, on this and many other important occaſions, will, doubtleſs, be in the poſſeſſion of every ſurgeon, or may be eaſily obtained when called for.

The following has been recommended as one of the beſt modes of performing the operation of bronchotomy:

The patient is placed upon a low ſtool, or in that poſture in which he finds it moſt eaſy to breathe; his head is held upright, but by no means bent backwards, and ſecured by an aſſiſtant. Oppoſite the third or fourth cartilaginous ring of the trachea, the ſkin is now drawn up into a high croſs fold; and it is cut through exactly at the middle of the trachea, to ſuch a depth, that when the fold is let go, the inciſion extends itſelf longitudinally from the firſt cartilaginous ring down to near the upper extremity of the ſternum. By making the inciſion of a proper length, the operation will be greatly facilitated, as its edges can then be drawn farther from each other.

As ſoon as the hæmorrhage has been entirely ſtopped, that part of the trachea, where the inciſion is finally to be made, muſt be laid bare, by diſſecting away the cellular ſubſtance and muſcular fibres ſituated about the membranous interſtice between the third and fourth ring, and by either entirely removing them or preſſing them ſideways. The operator then places the nail of the fore-finger of his left hand upon this interſtice; and applying the thumb and middle finger of the ſame hand to both ſides of the trachea, he puſhes the point of his inſtrument, which muſt previouſly be dipped in ſome freſh oil of almonds, along the nail of his fore-finger, through the above-mentioned membranous interſtice, between the third and fourth cartilaginous ring, into the trachea. He then applies the fore-finger of his left hand to one or the other of the cartilaginous rings, cloſe to the tube or canula, in order to hold it back whilſt he withdraws the blade of his inſtrument. If we make uſe of Richter's curved inſtrument, we muſt move the hand upwards in puſhing it in, in order that we may turn the point of the inſtrument downwards, and prevent its touching the back part of the trachea.

But in order that we may prevent the tube from ſlipping out of the wound, and alſo to prevent its moving to and fro in the trachea, ſeveral doſſils are introduced above and below into the wound, ſo as to keep the lips aſunder. To the rings, on both ſides of the external opening of the tube, two narrow ſlips of linen are applied, which preſs the rings down upon the trachea; and the whole is covered and ſecured with adheſive plaſter. And that none of the fluids which are collected in the wound may make their way into the canula and wind-pipe, the patient muſt lie or ſit inclined on one ſide, and the wound muſt, from time to time, be wiped dry with a ſponge. When the tube fills with mucus, it muſt be cleaned with a ſmall feather; or two ſuch tubes may be employed, one encloſing the other, and either of them removed, when neceſſary, for the purpoſe of clearing it of mucus.

As an improvement upon the inſtruments heretofore employed, Mr. Benjamin Bell propoſes one which has nearly the form of a flat ſtraight trocar, and ought never to be leſs than two inches in length. Before it is puſhed between the two cartilages, it muſt firſt be thruſt through ſeveral linen compreſſes, which not only ſerve to cover the pledgit of ointment intended to protect the wound, but alſo produces the advantage that (by removing one or more of the compreſſes, which may be done by cutting them open at the ſides with a pair of ſciſſars,) we are able to increaſe the length of the tube at pleaſure. In order to ſecure the tube in the ſituation where it is left after the operation, he paſſes it through an opening in a plate of poliſhed ſteel, which is curved ſo as to fit to the ſhape of the fore-part of the neck, and faſtened behind with ſtraps and a buckle. To prevent any foreign ſubſtance from getting through the orifice of the canula into the trachea, it may be covered with a piece of fine gauze, which ſhould previouſly be wetted, that the duſt may not penetrate through it, but ſtick to the outſide.

When the cauſe which gave riſe to the operation has been removed, and the patient can again breathe through his mouth, the tube is withdrawn, and the orifice healed up like any other wound of the wind-pipe; in doing which great caution ſhould be uſed, leſt any thing ſhould get into the trachea, which might produce dangerous conſequences.

Meſſrs. Chopart and Deſault propoſe, that the inciſion into the trachea ſhould be made between the thyroid and cricoid cartilages, and through the ligamentum crio-thyroideum; which, however, we cannot recommend, on account of the far greater ſenſibility and irritability of the larynx, whereby the moſt violent ſymptoms, threatening immediate ſuffocation, might be excited.

When this operation becomes neceſſary on account of any foreign ſubſtance lodging in the trachea, it may be performed in the following manner. The integuments are firſt divided as above deſcribed; and a longitudinal inciſion is made at the anterior part of the trachea, from above, downwards, through three or more of the cartilaginous rings. An aſſiſtant then draws aſunder the ſides of the wounded trachea with a blunt hook, upon which the operator introduces a crooked forceps, with which, he carefully ſeeks for, and extracts the foreign body.

In this caſe, it is alſo indiſpenſably neceſſary, that the hæmorrhage from the external wound ſhould be entirely ſtopped before any inciſion is made into the trachea, as otherwiſe a very violent cough would be excited.

If an extraneous ſubſtance ſhould ſtick in the larynx, it might perhaps be dangerous, (as ſome have adviſed) to cut the thyroid cartilage longitudinally, ſince this operation would excite very violent coughing; and might likewiſe be ſuperfluous, if it were poſſible to lay hold of the foreign ſubſtance with a crooked forceps, introduced through an inciſion made at the uſual place, below the cricoid cartilage.

BRONCHUS, in *Anatomy*, properly denotes the lower part of the *aſpera arteria*, dividing into bronchiæ, or branches. In which ſenſe bronchus ſtands contradiſtinguiſhed from larynx.

The name bronchus is alſo extended to the whole aſpera arteria, or trachea.

BRONCHUS alſo denotes a perſon afflicted with a bronchocele, or tumour of the throat, called by Ulpina *gutturoſus*.

BRONCOLI, Thomas, in *Biography*, a Neapolitan phyſician, who publiſhed in 1622, 4to. "De populari horribili et peſtilenti Gutturis et annexarum Partium Affectione, Neapolim et totum fere Regnum vexante, Conſilium." This is an early account of the *ſcarlatina anginoſa*, which ſeems not to have made its appearance in this country until about the middle of the laſt century, when Dr. John Fothergill publiſhed an accurate account of the diſeaſe, with the method he had found moſt ſucceſsful in treating it. He is very earneſt in adviſing his brethren to be careful in diſtinguiſhing it from the common quinſy, as it requires a mode of treatment very oppoſite to that diſeaſe. The *ſcarlatina anginoſa* has of late years become one of the moſt frequent, as well as moſt infectious and dangerous epidemics that viſit this country.

BRONE, in *Geography*, a river of Swiſſerland, in the Valais, which joins the Rhone near Sion.

BRONGUS, in *Ancient Geography*, a river of Mœſia, which, according to Herodotus, diſcharged itſelf into the Iſter.

BRONI, or Bronno, in *Geography*, a town of Italy, in the Milaneſe, where the French were defeated by the Imperialiſts in 1703; 10 miles S.W. of Pavia. N. lat. 41° 50′. E. long. 10° 0′.

BRONITZA, a village of Ruſſia, ſeated on the Maſta, within 20 miles of the Novogorod. In this village an excellent caviare is prepared of the roe extracted from large quantities of fiſh caught in the Maſta. At the diſtance of about 2 miles is an inſulated well of ſand and clay, of a circular form, the lower parts of which are thickly ſtrewed with detached pieces of red and grey granite. This eminence was remarkable in the times of idolatry for an oracular temple, the ſite of which is now occupied by a brick whitewaſhed church.

BRONNIKOO, a town of Siberia, on the Irkutſch, 28 miles N. of Toholſk.

BRONTES, in *Entomology*, a ſpecies of Papilio *(Pleb. Urb.)* of a ſmall ſize, that inhabits Africa. The wings are ſubcaudated, above and beneath fuſcous, with a band on the firſt pair, and margin of the ſecond ſnowy white. Fabricius. Obſ. In *Spec. Inſ.* of that writer, it is deſcribed under the ſpecific name of *Annus*.

Brontes, is alſo the name of Papilio Paniscus, in ſome German writers.

BRONTEUM, in *Antiquity*, that part of the theatre underneath its floor, wherein brazen veſſels, full of ſtones and other materials, to imitate the noiſe of thunder, were kept. Potter. Arch. Græc. lib. ii. cap. 8.

BRONTI, in *Geography*, a town of the iſland of Sicily, 28 miles W. of Taormina.

BRONTIÆ, among *Naturaliſts*, a kind of figured ſtones, commonly hemiſpherical, and divided by five pointed zones.

The word is formed from βροντη, *thunder;* alluding to the popular tradition that thoſe ſtones fall in thunder ſhowers: whence they are alſo denominated thunder-ſtones, ſometimes polar ſtones, fairy-ſtones, and alſo *ombriæ*, by naturaliſts.

Some take the *brontiæ* for the petrified ſhells of the *echinus ſpatagus*, or *briſcus*, of Ariſtotle. Dr. Woodward rather ſuppoſes them to have been formed, and received their ſhape, in the ſhell of the *echinus ſpatagus;* on which footing they are alſo ranked in the number of echinites. Dr. Plott conteſts both.

Brontiæ are ſometimes alſo uſed in England for a kind of figured ſtones, ſhaped like arrow-heads, leſs properly called belemnites, and popularly *thunder-bolts*.

Dr. Woodward takes not theſe for natural ſtones, but ſuppoſes them to have been faſhioned thus by art, to ſerve as weapons before the invention of iron.

Some alſo give the denomination *brontia* to the Batrachites and Chelonites.

BRONTOLOGY, books containing the doctrine of thunder, and of the preſages drawn therefrom. See Thunder.

BRONZE, Bronzo, *Italian*, a mixed metal for caſting ſtatues and other ornaments; Vaſari ſays, the Egyptians mixed two-thirds of braſs and one of copper. Pliny l. 34. c. 10. ſays, one tenth of lead, and one-twentieth of ſilver ſhould be added to the braſs, and the mixture of theſe three, he calls Grecian; among the moderns two-thirds of copper and one of braſs are found to be a good mixture. The ancients formed moſt inſtruments of braſs, which the moderns make of iron and ſteel; Homer deſcribes moſt of the arms in his poems, offenſive and defenſive, as brazen; he calls the Greeks by the genaral epithet of braſs-coated; and ſeldom mentions ſteel; moſt of the arms and inſtruments found in Herculaneum, Pompeia, Stabea, &c. were of braſs or bronze, whether agricultural, mechanical, mathematical, architectural, or culinary; the remains of very few iron inſtruments having been diſcovered, and a complete ſet of ſurgical inſtruments of bronze found in Pompeia, ſhew the great prevalence of this metal among the ancients.

Bronze, *caſting*, is performed in the following manner: the figure or pattern to be caſt in bronze, muſt have a mould made on it in a mixture of plaſter of Paris and brick-duſt, not more than one third of the former, and two-thirds of the latter; the mould ſhould be ſufficiently thick for ſtrength, according to its ſize; in its joints little channels ſhould be cut from different parts of the internal hollow tending upwards, to give vent to the air, which the metal will force out, as it runs into the mould. When the mould is made, a thin layer of clay ſhould be neatly and ſmoothly ſpread over the inſide, the ſame thickneſs the bronze is intended to be; then the mould muſt be cloſed, and the hollow within the layer of clay filled with two thirds of brick-duſt, and one-third of plaſter mixed with water; this will make the core; and if the figure to be caſt ſhould be large, before the plaſter and brick-duſt are poured into the mould which is to form the core, ſtrong bars of iron forming a ſkeleton of ſupport for the metal figure, when caſt, muſt be laid in the mould, and round this the core muſt be caſt; when this is done, the mould muſt be opened again, and the layer of clay taken out; the mould and core muſt then be thoroughly dried and even burned with charcoal or lighted ſtraw, for if the leaſt particle of wet or damp remains, the caſt will be blown to pieces, and the perſons engaged in the work will moſt likely be maimed or killed by the diſperſion and force of the hot metal. After they are perfectly dried, the core ſhould be laid in the mould again, and ſupported in its place by ſhort bars of bronze, which run through the mould into the core; the mould may now be cloſed and bound round with bars of iron ſtrong in proportion to the ſize of the work; the mould ſhould then be laid in a ſituation for caſting, and well ſupported with dry materials, as ſand, ſtones, &c.: great care muſt be taken that theſe alſo are dry, to avoid fatal conſequences. A channel muſt be continued from the reſervoir of metal to the mouth of the mould, with a ſufficient ſlant or inclination for the liquid bronze to run eaſily; it is a neceſſary caution that no perſon ſhould engage in bronze-caſting without the aſſiſtance of experienced workmen, on account of the danger attending it. Many particulars relating to this article may be found in Pliny's Natural Hiſtory; in the Life of Benvenuto Cellini, and Vaſari's Lives, in the chapter upon bronze-caſting. The form of the furnace for this purpoſe, as well as the manner of running the metal, are the ſame as employed in caſting bells.

Bronze, in *Painting*, denotes a colour prepared by the colourmen of Paris, in imitation of bronze. There are two ſorts of it, the red and the yellow, or golden: the latter, the yellow, is made ſolely of the fineſt and brighteſt copper-duſt that can be had; and in the former there is only added a ſmall quantity of red ochre, well pulveriſed. They are both applied with varniſh, and, to prevent its turning greeniſh, the work is dried over a chaffing-diſh, as ſoon as bronzed.

BRONZERIUS, John-Jerom, in *Biography*, was born of wealthy parents, in a ſmall town in the Venetian territory, in 1577. After making great progreſs in the ſtudy of the belles lettres, philoſophy, and aſtronomy, he was ſent to Padua, where he was initiated into the knowledge of medicine and anatomy, and in 1597, was made doctor. He now went to Venice, where he practiſed medicine to the time of his death, in 1630. His publications are, "De innato calido, et naturali ſpiritu, in quo pro veritate rei Galeni doctrina defenditur," 1626, 4to.; "Diſputatio de Principatu Hepatis ex Anatome Lampetræ," Patav. 4to. Though from diſſecting the liver of this animal he was ſatisfied the blood did not acquire its red colour there, yet he did not chuſe to oppoſe the doctrine of Galen. His obſervation, however, was probably not loſt, but led the way to a more complete diſcovery of the fact, by ſubſequent anatomiſts. "De Principio Effectivo Semini Inſito." Haller. Bib. Anat.

BRONZES. Thus *Antiquarians* denominate figures of men or beaſts, urns, and every piece of ſculpture, which the ancients made of the above metal. Statues, buſts, &c. caſt of this metal, are called by this name, whether they be originals or copies.

BRONZING is the art of imitating bronze. See Bronze, in *Painting*.

BRONZINO, in *Biography*. See Allori.

Bronzino, Agnolo, a painter of hiſtory and portraits, was born at Florence, in 1511, and became the diſciple of Puntormo, with whom he continued for ſeveral years, and whoſe ſtyle he acquired to ſuch a degree that the paintings of one and of the other could not be readily diſtinguiſhed. His extraordinary abilities are ſufficienty evinced in all his performances. Among others, at Florence, a "Nativity" is mentioned as incomparable; and alſo a "Venus," embracing Cupid, attended on one ſide by mirthful loves, and on the other by jealouſy, fraud, and other paſſions, allegorically repreſented. The compoſition and finiſhing in both theſe are highly extolled. As his maſter, Puntormo, died before he had finiſhed the chapel of St. Lorenzo, at Florence, the duke appointed Bronzino to complete it. Bronzino alſo diſtinguiſhed himſelf in the painting of portraits; particularly thoſe of Andrea Doria, Dante, Boccace, and Petrarch, and of all the illuſtrious perſons of the houſe of Medici. His works at Florence, Peſaro, and Piſa, bear laſting teſtimony to his merit; nor was he leſs reſpected and eſtemed for his amiable qualities than for his profeſſional talents. His taſte of deſign was grand; his pencil neat, but free; his colouring reſembled that of Puntormo; and in his draperies he imitated the manner of Michael Angelo Buonaroti. He died in 1580. Pilkington.

BRONZOLO, in *Geography*, a town of Germany, in the country of Tyrol, ſeated on the Adige; 5 miles S. of Bolzano.

BROOD, the young of fiſh and fowls.

The word is derived from the Saxon *bredan*, *to breed*; which alludes to βρυω, *to be big with young*. The word is alſo uſed for a ſet of any young. In which ſenſe we ſay, a brood of vipers, a brood of oyſters. A brood of pheaſants is more properly called an eye. Phil. Tranſ. N°.369.

Brood of ſea-fiſh is ſpawned, and lies in ſtill waters, where it may have reſt to receive nouriſhment, and grow to perfection. And here it is often deſtroyed by weirs, draw-nets, and nets with canvas, or like engines in the bottoms of them; in harbours, havens, and creeks.—Every weir near the main ſea takes, in twelve hours, ſometimes five buſhels, ſometimes ten, ſometimes twenty or thirty. For the preventing hereof, by 3 Jac. I. cap. 12. it is enacted, that none ſhall erect a weir, or weirs, along the ſea-ſhore, or in any haven, or creek, or within five miles of the mouth of any haven or creek, or ſhall willingly deſtroy the ſpawn or fry of fiſh, on pain of 10l. to be divided betwixt the king and the proſecutor. Neither ſhall any one fiſh in any of the ſaid places, with any net of a leſs meſh than three inches and a half betwixt knot and knot (except for the taking ſmoulds in Norfolk only), or with a canvas net, or other engine, whereby the ſpawn or fry of fiſh may be deſtroyed; on pain to forfeit the ſaid engine or net, and 10s. in money, to be divided betwixt the poor of the pariſh and the proſecutor.

Brood, or **Brood** *comb*, called by the French *couvain*, is that part of the comb of a bee hive, which contains in its cells the future progeny of the hive, in the three different ſtates of eggs, worms, and nymphs. See Bee, and Queen *bee*.

BROODING, the act of a hen, or other bird, ſitting on a number of eggs, to keep them warm, till they hatch, or produce young ones. See Hatching.

BROOK, a little river or ſmall current of water. A brook is ſometimes diſtinguiſhed from a river by the latter flowing continually, and the former only occaſionally.

Brook, in *Geography*, a county of Virginia, in America, 305 miles from Waſhington; containing 4418 white inhabitants and 288 blacks.

BROOKE, *Sir* **Robert**, in *Biography*, an eminent lawyer of the 16th century, was born at Claverly, in Shropſhire, educated at Oxford, and from thence removed to the Middle-Temple. In 1552, he was called to be ſerjeant at law; and in 1553, appointed lord chief juſtice of the common pleas; about which time he was knighted. He died in 1558, leaving behind him the reputation of great ſkill in his profeſſion, and of integrity in the exerciſe of it, both at the bar and on the bench. His works are "An Abridgment, containing an Abſtract of the Year-books, till the time of Queen Mary;" "Certain Caſes adjudged in the times of Henry VIII., Edward VI., and queen Mary, from the 6th of Henry VIII. to the 4th of queen Mary," and "Reading on the Statute of Limitations, made 32 Henry VIII. cap. 2."

Brooke, Henry, an ingenious author in polite literature, was the ſon of a clergyman, and born in Ireland in 1706. Having commenced his education under Dr. Sheridan, and proſecuted it in Dublin college, he removed to the Temple; where his lively genius and agreeable temper conciliated the eſteem and attachment of many friends. After his return to Ireland, he privately married his couſin, an amiable young lady, at a very early age, of whom he was appointed guardian, and lived for ſome time in domeſtic retirement; but his increaſing family obliged him to exert his abilities for their ſupport. With this view he came over to London, and, as it is ſaid, under the eye of Pope, wrote his philoſophical poem of "Univerſal Beauty," in 1735. He returned again to Ireland, and engaged in the practice of the law; but his predominant deſire of acquiring diſtinction in poetry and elegant literature induced him again to viſit London, where he produced a tragedy, entitled "Guſtavus Vaſa," and containing ſentiments of liberty ſo ſtrongly expreſſed, that government prohibited its public exhibition at the theatres. This oppoſition excited an enthuſiaſtic ardour among his friends and party, at the head of whom was Frederick prince of Wales; and the play was publiſhed by ſubſcription in 1739, much more to his advantage than if it had been acted. Warmly attached to his royal highneſs, Brooke took a houſe at Twickenham, near Mr. Pope's, and ſent for his wife, who was propoſed by the prince as wet-nurſe to a child, of whom the princeſs was then pregnant. But his expences exceeding his income, he was prevailed upon by his wife to part with his houſe, to diſmiſs his ſervants, and to retire to privacy in his native country. His attachment to the muſes, however, continued; and in 1745 his tragedy, entitled "The Earl of Weſtmoreland," was acted at Dublin; and in the ſame year he publiſhed his "Farmer's Letters," which were addreſſed to the people of Ireland, and deſigned to promote the principles of liberty and patriotiſm. At this time he was patronized by the earl of Cheſterfield, then the lord-lieutenant, and appointed barrack-maſter. As a poet he afterwards diſtinguiſhed himſelf by three pieces, communicated to the public in Moore's "Fables for the Female Sex," 1747. His piece, entitled "The Female Seducers," has been peculiarly admired, not only for tenderneſs and pathos, as well as ſublime poetry, but for the devotional ſpirit which always characterized the author. Diſappointed in his views of farther advancement, he retired into the country, in company with an only brother; where they reared together their numerous families, with mutual harmony and affection. His intervals of leiſure were employed in writing dramatic pieces and novels, the former of which he hoped to have introduced on the London ſtage. But though Mr. Garrick would at one time have engaged him as a writer; his propoſals were not duly regarded by Mr. Brooke, who flattered himſelf with more encouraging proſpects; and they were, therefore, never renewed. His tragedy of the "Earl of Eſſex," however, which had been acted at Dublin, in 1749, was alſo performed at Drury-lane in 1760; but as to his other tragedies and comedies, it does not appear whether they were exhibited in any theatre. In 1762 he publiſhed a treatiſe in 8vo. entitled "The Trial of the Roman Catholics," favourable to that claſs of Iriſh ſubjects; and in 1766, his novel, called "The Fool of Quality," which attracted conſiderable attention, though its general plan was wild and incoherent, and the latter volumes were ſtongly tinctured with methodiſm, in which the religious fervour of his mind at length terminated. Generous and ſympathiſing in his diſpoſition, and deſtitute of economy, he was reduced to the neceſſity of firſt mortgaging, and, at length, of ſelling his patrimony; in conſequence of which he reſided for ſome years in a rented houſe at Kildare, which he afterwards quitted for a farm near his former habitation. The affliction of loſing his wife, after an union of nearly 50 years, and alſo of a favourite child, depreſſed his ſpirits and deranged his underſtanding to ſuch a degree as to terminate in almoſt total imbecility. His novel entitled "Juliet Grenville," publiſhed in 1774, indicated ſtill more ſenſibly than the laſt volumes of the Fool of Quality, the decline of his faculties. His two poems, viz. "Redemption," and the "Fox chace," are among his later works, and little known or read. He died in October 1783, leaving only two ſurvivors of his ſeventeen children. His dramatic and other works (the novels excepted) were printed in 4 vols. 8vo. 1780. Life prefixed to his works. Gen. Biog.

Brooke, Frances, the daughter of a clergyman, whoſe name was Moore, and the wife of the Rev. John Brooke, of Norfolk, was diſtinguiſhed both by her literary talents and the gentleneſs and ſuavity of her manners. Her death, which happened at Sleaford, in Lincolnſhire, Sept. 26th 1789, was occaſioned by a ſpaſmodic complaint. Her firſt literary performance was a periodical work, entitled "The Old Maid," continued from November 15th, 1755, until July 1756, and publiſhed in one volume 12mo. In the latter year ſhe publiſhed "Virginia," a tragedy, with odes, paſtorals, and tranſlations, 8vo. In 1763, ſhe publiſhed her novel, entitled "The Hiſtory of Lady Julia Mandeville," which was read with general approbation, although not without a wiſh that the cataſtrophe had been leſs melancholy. In the ſame year ſhe alſo publiſhed "Letters from Juliet Lady Cateſby to her Friend Lady Henrietta Campley," 12mo.; a tranſlation from the French. She ſoon afterwards accompanied her huſband, who was chaplain of the garriſon at Quebec, to Canada; and there witneſſed thoſe romantic ſcenes that are ſo admirably deſcribed in her "Hiſtory of Emily Montague," 4 vols. 12mo. 1769. In the following year appeared "Memoirs of the Marquis of St. Forlaix," 4 vols. 12mo. Soon after her return from Canada, ſhe formed an intimate acquaintance with Mrs. Yates, and had, as ſome have ſaid, a ſhare with her in the Opera-houſe. As Mr. Garrick had rejected her firſt play, which was the tragedy of Virginia, ſhe made a ſecond attempt to obtain his favour, but without ſucceſs. This conduct, on the part of the manager, excited her reſentment, which ſhe expreſſed with a ſeverity, afterwards lamented and retracted, in a novel, entitled "The Excurſion," and publiſhed in 2 vols. 12mo. 1777. Her "Siege of Sinope," was acted at Covent-Garden, in 1781, and met with temporary approbation, probably from the ſupport that was given to it by the theatrical talents of Mr. Henderſon and Mrs. Yates; but her moſt popular performance was "Roſina," preſented to Mr. Harris, the manager of Covent-Garden, and acted at that theatre in 1782. Her laſt work was "Marian," which appeared in 1788, and was acted with ſome ſucceſs, though it was much inferior to her Roſina. She was alſo the tranſlator of the "Abbé Millot's Elements of the Hiſtory of England, from the Invaſion of the Romans to the Reign of George II." in 4 vols. 12mo. Biog. Dict.

BROOKFIELD, in *Geography*, one of the moſt ancient, wealthy, and populous towns of Worceſter county, in the ſtate of Maſſachuſetts, ſituate in the ſouth-weſtern part of the county, and containing 3284 inhabitants; 64 miles W. of Boſton, on the poſt road leading from Boſton to New York, and 18 miles W. of Worceſter. Its Indian name was "Quaboag." In the vicinity of this town are iron ore, and large quantities of ſtone, which yield copperas. It was ſettled by people from Ipſwich, in 1660, and incorporated in 1673.—Alſo, a townſhip in Orange county, Vermont, 20 miles W. S. W. of Newbury.—Alſo, a townſhip of Lincoln county, in the diſtrict of Maine, 14 miles above Norridgewalk, on Kennebeck river; formerly called "Seven Mile Brook."—Alſo, a town in Chenengo county, New York, having 1973 inhabitants; 25 miles S. of Whiteſtown.—Alſo, a town in Eſſex county, New York, on the weſt bank of lake Champlain.—Alſo, a poſt-town in Fairfield county, Connecticut; 6 miles N.N.E. from Danbury.

BROOKHAVEN, a townſhip in Suffolk county, Long-iſland, New York, containing 4122 inhabitants. The town includes about 40 houſes, together with an epiſcopalian and a preſbyterian church; 60 miles E. of New York.

BROOKINGTON, a poſt-town in Amelia county, Virginia, 182 miles S.S.W. from Waſhington.

BROOKLIME, in *Botany*. See Veronica Beccabunga.

BROOKLYN, in *Geography*, a pleaſant town of America, in Norfolk county and ſtate of Maſſachuſetts, containing about 60 or 70 families; ſituate between Cambridge and Roxbury, and ſeparated from Boſton on the eaſt by a narrow bay, which ſets up ſouth from Charles river, and forms a peninſula of Boſton. This town ſupplies Boſton with vegetables, and it is the place whither perſons of fortune retire from public life.—Alſo a poſt-town in King's county, New York, on the weſt end of Long iſland, containing 2378 inhabitants. In this place are an epiſcopalian church, a Dutch reformed church, and one belonging to the Methodiſts, a powder magazine, and ſome elegant houſes lying chiefly in one ſtreet. It is ſeparated from New York by Eaſt river, which is nearly a mile broad; and forms an agreeable object from the city.—Alſo, a townſhip in Windham county, Connecticut, about 20 miles N. of Norwich.—Alſo, a town in Hillſborough county, New Hampſhire; 65 miles W. by S. from Portſmouth.

BROOKVILLE, a poſt-town in Montgomery county, Maryland, 20 miles N. W. from Waſhington.

BROOM, in *Botany*. See GENISTA and SPARTIUM.

BROOM, *African*. See ASPALATHUS.

BROOM, *Butchers*. See RUSCUS ACULEATUS.

BROOM-*flower*, in *Heraldry*, the denomination of an order, inſtituted by St. Louis king of France, in the year 1234, on occaſion of the coronation of his queen Margaret, eldeſt daughter of Raymond Berengarius, count of Provence. The *habit* of the knights was a cloak of white damaſk, with a violet-coloured hood. The *collar* was a gold chain of broom flowers, enamelled proper, interlaced with lozenges of gold and flower de-lis, pendent therefrom, a croſs flory, with this inſcription "Exaltat Humiles;" the founder accounting the broom the ſymbol of humility. Their number was at the ſovereign's pleaſure, and this order continued till the death of king Charles V.

BROOM-*gall*, in *Entomology*. See GALLS *of the Broom*.

BROOM-*loch*, or *lake*, in *Geography*, an extenſive ſalt-water lake, or arm of the ſea, on the north weſt ſide of the county of Roſs in Scotland, famous for its excellent herrings. On this lake is the village of Ullapool.

BROOM-*rape*, in *Botany*. See OROBANCHE.

BROOM alſo denotes a well known houſhold beſom, or implement wherewith to ſweep away dirt, duſt, and the like: thus we ſay, a birch-broom, a hair-broom, a ruſh-broom, a heath-broom. The primitive kind of brooms, from whence the denomination is given to all the reſt, was made of the *geniſta*, or wild broom, growing on commons.

BROOME, WILLIAM, in *Biography*, a native of Cheſhire, was educated upon the foundation at Eton, but failing of a vacancy in a ſcholarſhip at King's college, though he was captain of the ſchool for a whole year, he was ſuperannuated, and ſent to St. John's college by the aſſiſtance of friends, where he obtained a ſmall exhibition. He appeared in the world at an early period as a tranſlator of the Iliads into proſe, in conjunction with Ozell and Oldiſworth, a tranſlation, which, though now forgotten, was, in Toland's opinion, ſuperior to that of Pope. After his introduction to Mr. Pope, he was employed by him to make extracts from Euſtathius for the notes to the tranſlation of the Iliad; and in Pope's Miſcellanies, many of his early pieces were inſerted. When the ſucceſs of the Iliad gave encouragement to a verſion of the Odyſſey, Pope called Fenton and Broome to his aſſiſtance; taking half the work upon himſelf, and aſſigning the other half to his coadjutors, four books being allotted to Fenton, and eight to Broome. To the lot of Broome fell the 2d, 6th, 8th, 11th, 12th, 16th, 18th, and 23d; together with all the notes. The ſtipulated pecuniary recompence of Broome was 500l. together with copies amounting to the value of about 100l. more. Fenton, it is ſaid, was to receive 300l. for his four books. This diſproportionate diſtribution of recompence offended Broome, and produced a miſunderſtanding between him and his employer. He repreſented Pope as avaricious, and Pope purſued him with avowed hoſtility. Among other diſreſpectful reflections in the Dunciad and the Bathos, he reckons Broome among "the parrots who repeat another's words, in ſuch a hoarſe odd tone, as makes them ſeem their own." It is ſaid that they were afterwards reconciled; but they never became friends. Mr. Broome publiſhed a miſcellany of poems, but never acquired any very high dignity in the church. Whilſt he was rector of Sturſton in Suffolk, he married a rich widow; and in 1728, on the king's viſit to Cambridge, he obtained the title of LL.D. In 1773, he was preſented by the crown to the rectory of Pulham in Norfolk, which he held with Oakley Magna, in Suffolk, given to him by lord Cornwallis, together with the vicarage of Eye in Suffolk: he then reſigned Pulham, and retained the other two preferments. Towards the cloſe of his life, he amuſed himſelf with tranſlating odes of Anacreon, which he publiſhed in the Gentleman's Magazine, under the name of Cheſter. He died at Bath, Nov. 16th 1745, and was buried in the abbey church. Johnſon's Lives.

BROOMING, or BREAMING *of a ſhip*, the burning off the filth ſhe has contracted on her ſides with ſtraw, reeds, broom, or the like, when ſhe is on a careen, or on the ground. See CAREENING.

BROONS, in *Geography*, a town of France, in the department of the Northern coaſts, and chief place of a canton, in the diſtrict of Dinan; 3½ leagues S. W. of Dinan. The place contains 2,001, and the canton 11,823 inhabitants; the territory includes 220 kiliometres and 10 communes.

BROOTZI, a town of Siberia; 48 miles N. W. of Tomſk.

BROOZENKOWA, a town of Poland, in the palatinate of Podolia; 32 miles N. E. of Kaminiec.

BROQUIES, a town of France, in the department of the Aveyron, and diſtrict of St. Afrique, ſeated on the Tarn; 7 leagues S. of Rhodez.

BRORA, a ſea-port town on the eaſt coaſt of Scotland, in the county of Sutherland; near it is a coal-mine, the coals of which are ſaid to take fire on being expoſed to the air; here is likewiſe a quarry of lime-ſtones, interſperſed with a variety of ſhells; 10 miles N.N.E. of Dornock.

BRORA, a river of Scotland, which paſſes through a lake of the ſame name, in the county of Sutherland, and runs into the ſea at the town of Brora.

BRORE, a river of Germany, which diſcharges itſelf into the Meuſe, about a league below Maeſtricht.

BROS, a royal free town of Tranſylvania, ſeated on the Maros; the capital of a tribunal of the ſame name, in a fertile country, the inhabitants of which diſtinguiſh themſelves by their ſkill in agriculture. By an inſcription on one of the gates, addreſſed to the emperor Trajan, it appears to have been a Roman colony.

BROSCHAN, a town of Bohemia, in the circle of Leitmeritz; 4 miles S. of Leitmeritz.

BROSCHI, in *Biography*. See FARINELLO.

BROSELEY, in *Geography*, a large, populous village of Shropſhire, England, is rendered remarkable from a phenomenon which occurred here at the beginning of the laſt century. Beneath the ſurface of the earth is a continued bed of coal, which is dug, and appropriated on the ſpot to various iron forges, potteries, &c. and great quantities of it are ſent to different towns by means of the Severn which divides this pariſh from Colebrook dale. In the year 1771, it was diſcovered that a vapour which aroſe from a well or pit, would take fire upon being condenſed in a tube, and ignited by flame. This circumſtance excited great curioſity, and many perſons came from different parts of the country to witneſs the burning well, as it was called. A gentleman wrote an account of it for the Philoſophical Tranſactions, and further particulars were publiſhed in the Gentleman's Magazine, vol. xxv. p. 303. It continued to burn for ſome time, till the proprietor of the land having ſunk a coal pit in the immediate vicinity, thereby deſtroyed the operating cauſe. The pariſh of Broſely contains 1031 houſes, and 4832 inhabitants. It is 146 miles N. W. from London.

BROSIMUM, in *Botany*, (from βρωσιμος, *eatable*). Swartz. Prod. 12. Schreb. 1486. Gmelin Syſt. Nat. Martyn's Miller. Boſc. Claſs, *dioecia monandria*. Gen. Char. 1. Staminiferous flowers. *Cal.* ament common, globular, covered on all ſides with imbricated, circular, peltate, membranaceous, deciduous ſcales; three larger, ſurrounding the baſe of the ament; the other ſmaller, of an irregular form, between each of which the ſtamens break out. *Cor.* none. *Stam.* filaments ſolitary, very ſhort, round; anthers bilamellate; lamellas circular, peltate, the lower dehiſcent from the upper; pollen globular. *Piſt.* germ at the top, included in a ſpongy ament, very ſmall, ovate, abortive. *Style* one, erect, bifid at the ſummit. *Stigmas* reflexed, ſimple. 2. Piſtilliferous flowers on a different tree. *Cal.* ament like the former. *Cor.* none. *Piſt.* germ globular, (the ſcaly body of the ament itſelf). *Style* riſing from the middle of the germ at top, long, bifid. *Stigmas* ſimple, acute, a little reflexed. *Pericarp*, berry pedicelled, ſpherical, one-celled. *Seed* ſolitary, with a two-lobed kernel, ſurrounded by a thin membrane and bipartite.

Eſſ. Char. Ament globular, covered all round with circular peltate ſcales. *Cor.* none. *Filam.* ſolitary, between the ſcales. *Style* bifid. *Berry* one-ſeeded.

Sp. 1. B. *Alicaſtrum*. Brown, Jam. "Leaves ovate, lanceolate, perennial; aments ſolitary; fruit corticoſe." A tree making about one-third part of the woods in ſome parts of Jamaica. Its wood is not deſpicable, and its leaves and younger branches are a fattening fodder for all ſorts of cattle. Its fruit, when roaſted, eats like a cheſnut, and is called bread-nut; and when boiled with ſalt-fiſh, pork, beef, or pickle, is a wholeſome and not unpleaſant food. Its leaves and younger branches are full of gum, which renders them diſagreeable to cattle at firſt, but of which they ſoon become fond. 2. B. *ſpurium*. Brown, Jam. "Leaves lanceolate-ovate, acuminate; aments ovate, in pairs; fruit ſoft." A timber tree in Jamaica, called milk-wood, but not much valued.

Obſ. Swartz's deſcription of the germ and fruit is very obſcure; that given by Boſc, though not eaſily reconciled with it, is more intelligible. "Flowers united in a globular ament, compoſed of peltate ſcales, each of which, in the barren plants, covers a ſtamen, and in the fertile ones, a germ with a bifid ſtyle, without either calyx or corolla." Fruit a one-ſeeded drupe.

BROSME, in *Ichthyology*, a ſpecies of GADUS, that inhabits the ſouthern ſeas of Greenland. The mouth is bearded; tail oval, and pointed. Müll.

BROSME is alſo a ſynonymous name of *coryphœna rupeſtris*. *Egede Groenl.*

BROSNA, in *Geography*, a river of Ireland, which iſſues from Lough-Hoyle in the county of Weſtmeath; and ſoon after paſſes through Lough-Ennel; on leaving which it runs ſouthward into the King's county, and joins the Shannon, about three miles above Banagher.

BROSNA, *Little*, a river which forms, for many miles, the ſouthern boundary of the King's county, and flows into the Shannon, about four miles below Banagher.

BROSSAC, a town of France, in the department of the Charente, and chief place of a canton, in the diſtrict of Barbezieux; 10 miles S.S.E. of Barbezieux. The place contains 1017, and the canton 4887 inhabitants: the territory comprehends 150 kiliometres, and 13 communes.

BROSSÆA, in *Botany*, (from Guy de la Broſſe, formerly intendant of the royal garden at Paris). Linn. gen. 1229. Spec. Plant. Sup. Reich. 261. Schreb. 330 Juſſ. 161. Willd. 375. La Marck Ill. 316. Nat. Ord. *bicornes? Ericæ*, Juſſ. Claſs, *pentandria monogynia*. Gen. Char. *Cal.* one-leafed, five-parted; ſegments oblong, acuminate, erect, the length of the corolla. *Cor.* monopetalous, truncated at the end, entire, or crenulate. *Stam.* five, included in the corolla. *Piſt.* germ ſuperior? pentagonal; ſtyle awl-ſhaped, ſhorter than the corolla; ſtigma ſimple. *Pericarp*, capſule roundiſh, five-furrowed, five-celled, covered with the calyx, which is now enlarged, converging, and fleſhy, opening at the ſides. *Seeds* numerous, very ſmall.

Eſſ. Char. *Calyx* fleſhy, five-parted. *Cor.* truncated. *Capſ.* five-celled, many-ſeeded.

Sp. B. *coccinea*, Linn. "Shrubby, with a ſcarlet flower and black fruit," Plum. A ſhrub three or four feet high. *Root* branched; *leaves* alternate, petioled, ſharply ovate, ſlightly toothed, ſmooth, pale green; *flowers* in racemes at the end of the branches, alternate, peduncled, with two bractes about the middle of the peduncles.

BROSSARD, in *Biography*, practiſed ſurgery many years at Chatre, in the early part of the laſt century. He had the merit of reviving the practice of uſing agaric in ſtopping hemorrhages, after amputations, which had been diſcontinued. Though that fungus does not poſſeſs the powers he attributed to it, and muſt not be depended on, in ſtopping the bleeding of large veſſels, yet in preventing the effuſion of blood, from the ſmaller arteries, it is of acknowledged utility. He was rewarded by Lewis XV. with a penſion, for divulging the ſecret, in a ſhort memoir, publiſhed on the ſubject, in 1757. Haller. Bib. Chirur. Eloy. Dict. Hiſt.

BROSSARD, SEBASTIAN, author of the firſt muſical dictionary publiſhed in a modern language, and which has been of ſingular uſe to ſubſequent muſical lexicographers, particularly to Graſſineau, and Jean Jaques Rouſſeau. Indeed muſical hiſtorians would be ungrateful not to acknowledge, that the numerous liſt of writers on the ſubject of muſic, ancient and modern, whence he drew his materials, and which he has inſerted at the end of his work, has not opened to them ſubjects of inquiry, and ſources of information. And we think with M. Framery, that Rouſſeau has treated this intelligent and zealous writer unworthily, in accuſing him of publiſhing an Italian dictionary, with a French title. When the ſecond edition of Broſſard was publiſhed in 1702, the French muſical technica was inſufficient, alone, to furniſh a book: nor could their explanation be much wanted, while taken from the current language of the country. Broſſard muſt be allowed to have marked out the road for Rouſſeau to purſue, which, with his impreſſive eloquence, he has certainly rendered more flowery and pleaſant.

Honeſt Walther, in 1732, has been more juſt to his prototype in his German muſical lexicon; where there is a greater extent of muſical information than in any book of the ſize that we have met with.

The French biographers inform us that Broſſard, born 1660, was a canon of the cathedral of Meaux, who excelled in knowledge of the theory of muſic. The writings which he publiſhed on the ſubject were all well received; particularly a muſical dictionary, which was of great ſervice to J. J. Rouſſeau, in furniſhing him with the greateſt part of the materials for his muſical articles in the Encyclopedie, which he afterwards collected, and formed into a volume.

Mr. Graſſineau might, without exceſſive humility, have called his muſical dictionary a tranſlation. We know the pains, expence, and perſeverance neceſſary to collect and read ſuch a number of books in all languages, few of which are either amuſing or inſtructive, to which the firſt compiler of a dictionary or a hiſtory is condemned. Johnſon calls our language a "multiform and chaotic dialect;" and the technical language of muſic certainly merits theſe titles more than the terms of any other art or ſcience. Broſſard died in 1730, at 70.

BROSSE, Guy de la, great uncle to the celebrated ſtateſman M. Fagon, was born at Rouen, towards the end of the ſixteenth century. Being much attached to botany, he gave a piece of ground, in which the rudiments of the jardin royal des plantes medicinales, at Paris, was laid. This was, after much ſolicitation, enlarged, endowed, and an eſtabliſhment for the improvement of botany formed by cardinal Richlieu, and de Broſſe was appointed phyſician to the king, Lewis XIII., and curator of the garden. This was about the year 1626. He had been twelve years ſoliciting the eſtabliſhment, and ſeems to have ſpent the remainder of his life, which was extended to the year 1641, in improving it. His works, which all relate to his favourite ſubject, are, "Deſſein du Jardin Royal pour la Culture des Plantes Medicinales, à Paris, avec l'Edit du Roy touchant l'Etabliſſement de ce Jardin en 1626." 8vo. "De la Nature, Vertu et Utilité des Plantes, et Deſſein du Jardin Royal de Medicine, Paris, 1628" this was afterwards,, viz. in 1640, publiſhed in folio, with 50 plates, which are much commended. "Deſcription du Jardin, &c. contenant la Catalogue des Plantes, et le Plan du Jardin, 1636." Haller. Bib. Botan. Eloy. Dict. Hiſt.

Brosse, or De Broche, Peter la, was born at a town in Touraine, and educated to the practice of ſurgery, in which he acquired ſo much celebrity, as to be called to attend Philip III. of France; to whom, by his artful management, he made himſelf ſo uſeful, that he made him his chamberlain, and entruſted to him the government of the kingdom. Elated with this extraordinary ſucceſs, he became inſolent to the peers, none of whom could get acceſs to the king but through him. Finding the queen was become his enemy, as well as moſt of the principal perſons in the kingdom, with the view of ruining her with the king, he took the horrid reſolution of poiſoning prince Lewis, the eldeſt ſon of the king, by his former queen. This he effected in the year 1276, and then accuſed the queen of having committed the murder, in order to raiſe her ſon to the throne, but the villainy of the man was diſcovered by the means, it is ſaid, of a nun; and he was executed, to the great joy of the country. The ſtory is told by Henault, in his Abregé Chronologique de l'Hiſtoire de France.

BROSSES, Charles de, an eminent mathematician, and man of letters, was born at Dijon, in 1709; and purſuing the line of profeſſion for which his family had been diſtinguiſhed, he became a counſellor of parliament in 1730, and a preſident á mortier in 1741. As he was eminent for his' zeal and integrity, as well as for his talents, he was entruſted with the conduct of many intereſting tranſactions, and in conſequence of preſenting the remonſtrances of the people to the throne, he ſhared the honourable diſgrace incurred by many other worthy perſons in the reign of Louis XV. However, he afterwards obtained diſtinguiſhing marks of court approbation, by being appointed preſident of the parliament of Burgundy in 1774. His intervals of leiſure were devoted to the purſuits of literature and ſcience; and in theſe his range was ſo extenſive as to comprehend hiſtory, geography, mythology, antiquities, metaphyſics, and languages. He was alſo acquainted with a great number of learned men, both at home and abroad, and was a member of various literary ſocieties. Buffon had been his ſchool-fellow, and regarded him from his youth as a genius of a ſuperior order. Beſides being the author of ſeveral memoirs in the collections of the academies of Paris and Dijon, the journal des Scavans, and the Dictionnaire Encyclopedique, he wrote the following ſeparate works: "Letters on the Diſcovery of Herculaneum," 1750, 8vo.; "Hiſtory of Voyages to the Southern Regions," 2 vols. 4to. 1756; in which he maintains the exiſtence of a ſouthern continent. diſproved by the ſubſequent voyages of the French and Engliſh, at leaſt within any acceſſible latitudes; "On the Worſhip of Fetiches, or a Parallel between Ancient Idolatry, and that of the People of Negroland," 1760, 12mo.; a curious philoſophical and mythological performance: "Treatiſe on the mechanical Formation of Languages," 2 vols. 12mo. 1765; in which he attempts to eſtabliſh a general etymological ſyſtem deduced from the ſuppoſition of a primitive language, founded on the mechanical formation of articulate ſounds; "Hiſtory of the Roman Republic in the Courſe of the ſeventh Age of Rome, by Salluſt, partly tranſlated from the Original of that Author, and partly compoſed and reſtored from the ſcattered Fragments of his laſt Works," 3 vols. 4to. 1777. and "Lettres Hiſtoriques et Critiques ſur l'Italie," &c. 3 vols. 8vo. Paris, 1799. In private and ſocial life he was no leſs amiable than reſpectable in his public and literary character. He died at Paris, May 7. 1777. Eloge par M. Muret. Nouv. Dict. Hiſt.

BROSSETTE, Claude de, was born at Lyons in 1671, firſt entered among the Jeſuits, and afterwards became a lawyer. He was a member of the academy of Lyons, and keeper of the public library in that city. His works beſides ſome profeſſional performances, were "A brief Hiſtory of the Town of Lyons," and "A New Hiſtorical Eulogy of the Town of Lyons," 4to. 1711, both elegantly written, "Hiſtorical Elucidations of the Satires, and other Works of Boileau Deſpreaux," 2 vols 4to. 1716, often reprinted in various ſizes; and "A Commentary on the Satires and other Works of Regnier," 8vo. 1729. Broſſette correſponded with ſeveral literary perſons, particularly with Rouſſeau and Voltaire. He died at Lyons in 1746. Nouv. Dict. Hiſt.

BROTCHET, in *Ichthyology*, one of the French ſynonyms of the garfiſh or ſea-pike. See Esox Lucius.

BROTERA, in *Botany*, a genus in the claſs *monadelphia dodecandria*, formed by Cavanilles for a plant found in New Spain, which differs from his genus Dombeya, only in the ſtructure of the capſule: but, as Boſc obſerves, it agrees in generic character, and ought to be united with Pentapetes Phœnicea, the only ſpecies for which Willdenow has preſerved that Linnæan genus, the other two original ſpecies having been ſeparated from it to form a new genus, which from their winged ſeeds is called Pteroſpermum. La Marck not thinking the difference in the ſtructure of the capſule a ſufficient generic diſtinction, has aboliſhed the genus Dombeya of Cavanilles, Juſſieu, Ventenat and Willdenow, and has placed all its ſpecies under the genus Pentapes, with the original Pentapetes Phœnicea, ſtill retaining Pteroſpermum as a diſtinct genus. See Pentapetes, where the Brotera of Cavanilles will be deſcribed.

BROTEROD, in *Geography*, a town of Germany in the circle of Franconia, and county of Henneburg, belonging to the landgrave of Heſſe Caſſel; 3 miles N. of Schmalkalden.

BROTHEL. See Bawdy-*houſe* and Stews.

BROTHER, *Frater*, a term of relation between two male children, ſprung from the ſame father or mother, or both. Scaliger and Voſſius derive *frater* from φρατηρ, for φρατωρ, which properly ſignifies a perſon who draws water in the ſame well; φρεαρ, in Greek, ſignifying well, and φρατρια, a company of people who have a right to draw water out of the ſame well.—The word, it is ſaid, came originally from the city Argos, where there were only a few wells diſtributed in certain quarters of the city, to which thoſe of the ſame neighbourhood alone repaired.

By the civil law, brothers and ſiſters ſtand in the ſecond degree of conſanguinity; by the canon law, they are in the firſt degree. By the Moſaic law, the brother of a man who died without iſſue, was obliged to marry the widow of the deceaſed. Deuter. xxv. 7. See LEVIRATE.

The ancients applied the term brother indifferently to almoſt all who ſtood related in the collateral line, as uncles and nephews, couſin germans, &c.—This we learn not only from a great many paſſages in the Old Teſtament, but alſo from profane authors: Cicero, in his Philippics, ſays, "Antonina was both wife and ſiſter of Mark Antony; becauſe ſhe was daughter of his brother C. Antonius." And as to couſins, Tullius Hoſtilius, in Dionyſius Halicarnaſſus, calls the Horatii and Curatii, brothers, becauſe they were ſiſter's children.

The language of the Jews, biſhop Pearſon obſerves, included in the name of brethren not only the ſtrict relation of fraternity, but alſo the larger of conſanguinity. We are brethren, ſays Abraham to Lot, Gen. xiii. 8. whereas Lot was only his nephew.—So Jacob told Rachel that he was her father's brother, Gen. xxix. 12. whereas he was only her father's nephew.—This conſideration has been urged with good advantage againſt the Antidicomarianites, who, from the mention made of the "brethren of Jeſus," (John ii. 12. Matth. xii. 46.) have impugned the perpetual virginity of the mother of Chriſt, for which, however, there ſeems to be no ſufficient foundation

Among us, it is cuſtomary for kings to give the title "brother" to each other; the unction in coronation being eſteemed to create a kind of "brotherhood." Nor is the cuſtom modern: Menander mentions a letter of Coſroes, king of Perſia, to the Emperor Juſtinian, beginning thus: Coſroes, king of kings, &c. to the emperor Juſtinian "my brother."

Kings now alſo give the ſame appellation to the electors of the empire; and the like was given, by the king of France to the king of Sardinia, while only duke of Savoy.

In the civil law, brothers, *fratres*, in the plural, ſometimes comprehend ſiſters: as *Lucius and Titia, fratres; tres fratres, Titius, Mævius, & Seia.*

BROTHERS, *foſter*, thoſe which ſucked the ſame nurſe. The French call them "fratres du lait," or brothers by milk; which is moſt properly uſed in reſpect of a perſon who ſucked a nurſe at the ſame time with the nurſe's own child.

BROTHERS, *German, Fratres Germani.* See GERMAN.

BROTHER was alſo uſed in *Middle Age Writers*, for a *comes* or governor of a province.

BROTHER is applied in a leſs proper ſenſe, to denote a perſon of the ſame profeſſion. In which ſenſe, judges, biſhops, prieſts, &c. call each other brothers.

BROTHER in *Chriſt*, *frater in Chriſto*, the ſame with *ſpiritual brother*, a perſon admitted into a monaſtic ſociety or fraternity.

BROTHER is more particularly uſed to denote the relation between monks of the ſame convent; as brother Zachary, brother Bonaventure, &c. In Engliſh we more uſually ſay, friar Zachary, &c. from the French word *frere*, brother.

This appellation is borrowed from the primitive Chriſtians, who all called each other "brothers:" but it is principally uſed for ſuch of the religious as are not prieſts; thoſe in orders are generally honoured with the title of *fathers*, *patres*, *peres*; whereas the reſt are only ſimply *brothers*.

The monks of St. Dominic are particularly called *preaching brothers*, or *friars predicants*; thoſe of St. Francis, *minor brothers*; thoſe of charity, *ignorant brothers*, &c. *Conſcript brothers*, *fratres conſcripti*, denote laymen and others entered in the catalogue of the brothers of a monaſtery, or rather poſſeſſed of the fraternity thereof. *Outer brother*, *frater exterior*, ſometimes denotes a lay-brother. *Strange brother*, *frater adveniens*, a hoſt or gueſt belonging to another monaſtery. *Foreign brother*, *frater externus*, either a monk, prieſt, or canon of ſome other monaſtery, to whom the prayers of the ſociety are granted. *Mature brother*, *frater maturus*, one diſtinguiſhed by his age, gravity, or probity, above the reſt.

BROTHERS, *ſpiritual*, denote laymen admitted into a monaſtic fraternity. The name was alſo given to thoſe otherwiſe called mature brothers, and ſometimes alſo to a ſort of adopted brothers, or perſons who commenced a kind of brotherhood, with the ceremony of breaking bread together in the church before the prieſt.

BROTHER, *lay*, *frater laicus*, or *converſus*. See LAY *Brother*.

BROTHER, *given*, *frater donatus*, among the Carthuſians, denotes a young perſon dreſſed in minim cloth, and wearing a hat, whoſe office is to ſerve in the houſe, anſwering to what in other orders is called an offered brother, *frater oblatus*.

BROTHER is alſo an appellation more peculiarly given to certain orders of religious; thus the

BROTHERS *of St. Alexis*, in the Low Countries, were an order of perſons who attended on thoſe who lay dying, and took care of the burial of the dead.

BROTHERS *of Ave Maria*. See SERVITES.

BROTHERS *of Charity*, a ſort of religious Hoſpitallers, founded about the year 1297, ſince denominated *Billetins*. They took the third order of St. Francis, and the ſcapulary, making three uſual vows, but without begging.

BROTHERS *of Charity*, alſo denote an order of Hoſpitallers ſtill ſubſiſting in Romiſh countries, whoſe buſineſs is to attend the ſick poor, and miniſter to them both ſpiritual and temporal ſuccour. They are all laymen, except a few prieſts, for adminiſtering the ſacrament to the ſick in their hoſpitals. The Brothers of Charity uſually cultivate botany pharmacy, ſurgery, and chemiſtry, which they practiſe with ſucceſs.

They were firſt founded at Granada, by St. John de Dieu; and a ſecond eſtabliſhment was made at Madrid, in the year 1553: the order was confirmed by Gregory XIII. in 1572. Gregory XIV. forbade them to take holy orders: but by leave of Paul V. in 1609 a few of the brothers might be admitted to orders. In 1619 they were exempted from the juriſdiction of the biſhop. Thoſe of Spain are ſeparated from the reſt, and they, as well as the brothers of France, Germany, Poland, and Italy, have their diſtinct generals, who reſide at Rome. They were firſt introduced into France by Mary of Medicis, in 1601, and have ſince built a fine hoſpital in the Fauxbourg St. Germain.

BROTHERS *of Charity of St. Hippolytus*, a religious congregation, firſt ſet on foot by Alvarez, a citizen of Mexico, in 1585, who aſſociated with him ſeveral other pious perſons to attend on the ſick, and founded an hoſpital without the walls of that city: which being approved of by the pope, and the number of like hoſpitals increaſing, a congregation was formed under the title of "The Charity of St. Hippolytus,"

lytus," becauſe the firſt hoſpital had been dedicated to that ſaint, on whoſe feaſt-day the city firſt fell into the hands of the Chriſtians. Clement VIII. in 1594, granted them all the privileges of the Brothers of the Charity of St. John de Dieu.

Brothers *of Death*, a denomination uſually given to the religious of the order of St. Paul, the firſt hermit.

They are called "Brothers of Death," *fratres a morte*, on account of the figure of a death's head, which they were always to have with them, in order to keep perpetually in their minds the thoughts of death. This order, by its conſtitutions, made in 1620, does not ſeem to have been eſtabliſhed long before pope Paul. V. Lewis XIII. in 1621, permitted them to ſettle in France. It was probably ſuppreſſed by pope Urban VIII.

Brothers *of Penitence*, or *of the Penitence of Jeſus Chriſt*, a name given at Thoulouſe to the religious of the third order of St. Francis; called alſo *Beguini:* and to a fraternity of Penitents held in the chapel of the church of the third order, under the direction of the Beguini. See Beguins.

Brothers, *Pyed, fratres pii*, a denomination given to all monks, whoſe habit was partly white, partly black; they were otherwiſe called *Agaches*.

Brothers *of St. Gregory the Illuminator*, a religious order eſtabliſhed in Armenia, in the fourteenth century, which being much reduced and decayed by the conqueſts of the Turks and Perſians, was, in 1356, united to the order of St. Dominic.

Brothers, *Joyful, fratres gaudentes*, in Italy, denote the knights of the order of the Virgin Mary, firſt inſtituted at Bologna in 1261, for whom a rule was preſcribed by pope Urban IV.

Brothers, *poor*, in the Charter-houſe, a denomination given to decayed gentlemen, to the number of eighty, who are ſubſiſted with diet, cloathing, and lodging on the eſtabliſhment. The poor brothers are to be gentlemen by deſcent, reduced to poverty, or decayed merchants, ſoldiers, or officers of the king's houſehold. The conditions of admiſſion are that they have no eſtate for life worth 200l. nor coming in, *viis & modis*, 24l. per annum; and that they be fifty years old, unleſs they have been maimed in the public ſervice; in which caſe the age of forty ſuffices. They wear a livery-gown within doors.

Brothers, *White*, the name of a ſect which appeared in Ruſſia towards the beginning of the fourteenth century; ſo called from their white cloaks on which was a St. Andrew's croſs of a green colour. See Brethren.

Brothers *of Arms*, an appellation given to thoſe who contract a kind of fraternity in war, obliging themſelves to the mutual ſervice and aſſiſtance of each other. In the military orders, the knights are alſo called brothers.—In the order of Malta, there is a particular claſs, who are called "ſerving brothers;" conſiſting of ſuch as cannot give proof of their nobility. In Latin they are denominated *fratres clientes*.

Brothers *by adoption*. See Adoption.

Two brothers who have only the ſame father, are called *fratres conſanguinei;* and thoſe who are only deſcended from the ſame mother, *fratres uterini*.

Brothers *of the Croſs*. See Flagellantes.

Brothers *of the roſy Croſs*. See Rosycrusians.

Brothers, *ſworn. fratres conjurati*. See Fratres.

Brothers, in *Alchemy, lame*, or *maimed*, denote the imperfect metals, which are to be cured of their lameneſs by the perfect elixir; i. e. are to be purified and ſeparated from their droſs, &c. by the philoſopher's ſtone.

Brothers, in *Geography*, iſlands in the Indian ſea, on the north ſide of the entrance into the ſtraits of Malacca. N. lat. 7° 18′. E. long. 78° 10′, to 78° 15′.

Brothers, *Seven*, iſlands in the Indian ſea. S. lat. 3° 24′. E. long. 60° 25′.

Brothers, *Three*, iſlands in the Indian ſea. S. lat. 3° 45′. E. long. 62° 25′.—Alſo, iſlands in the Eaſt Indian ſea. N. lat. 10° 32′. E. long. 107′ 59′.—Alſo, iſlands in the ſame ſea. S. lat. 5° 20′. E. long. 117° 30′. The moſt northerly, which is about 5 or 6 leagues ſomewhat ſoutherly from Thumb ſhoal, is called by the Dutch "North Brother." Between theſe and Celebes, lies Tonakeke iſland, which is larger than any of them.—Alſo, three remarkable hills on the eaſt coaſt of New Holland, which may be ſeen 14 or 16 leagues off at ſea. S. lat. 31° 40′. W. long. 207° 10′.

Brothers, *Two*, lie on the eaſt coaſt of New Holland, off cape Manifold; one of them is low and flat, and the other high and round; near the ſhore is a third iſland.—Alſo two iſlands of New Zealand, near queen Charlotte's ſound.

BROTHERHOOD. See Fraternity.

Brotherhood *of God*, in the *Middle Ages*, a denomination given to an aſſociation formed for reſtraining and aboliſhing the right and exerciſe of private war. The people, eager to obtain relief from the ſufferings that were thus occaſioned, among other expedients, had recourſe to a pretended revelation. Towards the end of the 12th century, a carpenter in Guienne gave out, that Jeſus Chriſt, together with the bleſſed Virgin, had appeared to him, and having commanded him to exhort mankind to peace, had given him, as a proof of his miſſion, an image of the Virgin holding her ſon in her arms, with this inſcription: "Lamb of God, who takeſt away the ſins of the world, give us peace." This low fanatic addreſſed himſelf to an ignorant age, prone to credit what was marvellous. He was received as an inſpired meſſenger of God. Many prelates and barons aſſembled at Puy, and took an oath, not only to make peace with all their own enemies, but to attack ſuch as refuſed to lay down their arms, and to be reconciled to their enemies. Thus they formed the above-mentioned aſſociation. But the influence of this ſuperſtitious terror or devotion was not of long continuance.

BROTHERTON, in *Geography*, an Indian village of North America, adjoining New Stockbridge in the ſtate of New York, inhabited by about 150 Indians, who migrated from different parts of Connecticut, under the care of the Rev. Mr. Occom. Theſe Indians receive an annuity of 2160 dollars, which ſum is partly appropriated to the purpoſe of maintaining a ſchool, and partly to compenſate a ſuperintendant for tranſacting their buſineſs, and diſpoſing the remainder of their money for their benefit.

BROTIER, Gabriel, *Abbé*, in *Biography*, a diſtinguiſhed ſcholar, and member of the French Academy of Belles Lettres, was born at Tonnay in the Nivernois, in 1723, and educated in the Jeſuits college of Louis-le-Grand, of which he was for ſeveral years librarian. Accuſtomed through life to write notes in the margins of all the books which he read, and diſtinguiſhed alſo by a retentive memory and ſingular penetration, he had thus collected materials for ſeveral volumes; and as he applied to ſtudy for 10 or 12 hours a day, he had acquired an immenſe fund and variety of knowledge. With the exception of the mathematics, his knowledge comprehended every branch of ſcience, natural hiſtory, chemiſtry, and even medicine. It was his cuſtom every year to read Hippocrates, and the books of Solomon, in the original languages; for theſe, he ſaid, were the beſt remedies for all bodily and mental diſeaſes. But he was principally devoted to the belles lettres: and had acquired an accurate acquaintance with all the dead languages, particularly the Latin, and with moſt of the modern languages of Europe. He was alſo well verſed in ancient and modern hiſtory, chronology, coins, medals, inſcriptions, and the uſages of antiquity; and he had collected a great maſs of materials for a new hiſtory of France, which he was prevented from undertaking. On the diſſolution of the order of Jeſuits, he found a pleaſant aſylum in the houſe of M. de la Tour, an eminent printer, and in this retreat he ſpent the laſt 26 years of his life. Here he publiſhed his edition of "Tacitus," enriched with notes and learned diſſertations, and ſupplements; and alſo a new edition of "Pliny the Naturaliſt," to which he has added notes and illuſtrations, being merely a conciſe abridgment of what he had prepared with a view of correcting and enlarging the edition of Hardouin, and of giving an hiſtorical account of all the new diſcoveries made ſince the beginning of the 18th century. His other works of inferior importance were a beautiful edition of "Phædrus;" an edition of Rapin's poem, "De Hortis," to which he ſubjoined a "Hiſtory of Gardens," written in Latin with great elegance, and abounding in the moſt beautiful imagery. Beſides a lively imagination, Brotier poſſeſſed a ſound and diſcriminating judgment, and an elegant taſte. His conceptions were clear, and his mode of communicating knowledge perſpicuous. From the abbé Fontenay's further delineation of his character, we ſhall ſelect the following particulars. "Humble and unaſſuming, and of ſuch delicate modeſty, as cauſed him to bluſh when the leaſt encomium was paſſed upon him; good tempered, plain in his manners, and giving himſelf up to ſociety with the ſmiles and ſimplicity of a child; his converſation was engaging, and always inſtructive when it turned on ſubjects of literature and ſcience. Widely differing in this reſpect from thoſe men of letters, who, if we may be allowed the expreſſion, are miſers of their knowledge, and ſeem to hoard it up for themſelves, or that they may make an oſtentatious diſplay of it in ſome publication, the abbé Brotier anſwered with great readineſs the queſtions of every perſon who applied to him for information, and inſtructed thoſe around him with the utmoſt affability and condeſcenſion." "That intimate friendſhip which united me to the abbé Brotier," ſays Fontenay, "gratitude for the ſervices he did me, his talents, and his virtues, will always endear his memory to me; and I may juſtly ſay with the Roman poet:

"Multis ille bonis flebilis occidit,
Nulli flebilior quam mihi."

This accompliſhed and elegant ſcholar died at Paris, Feb. 12th 1789, at the age of 67.

The following is a liſt of the abbé Brotier's works, as given in La France Literaire, by J. S. Erſch, publiſhed at Hamburgh in 1797, and cited in Aikin's General Biography: "Examen de l'Apologie de M. l'Abbé de Prades," 1753, 8vo; "Concluſiones ex univerſa Theologia," 1754, 4to.; "Traité des monnoies Romaines, Grecques, et Hebr. comparées avec les monnoies de France, pour l'intelligence de l'Ecriture Sainte et de tous les auteurs Grecs et Romains," 1760, 4to.," "Proſpectus d'une edit. Lat. de Tacite, en 5 vols, 4to.," 1761; "C. Corn. Taciti Opera, recognovit, emend. ſuppl. explevit, notis, diſſert. tabulis geogr. illuſtravit," 1771, 4 vols. 4to.; "Supplementa, lib. 7. 10 Annal. Taciti," 1755, 8vo.; "Cl. viri de la Caille vita," 1763, 4to.; "C. Plinii Hiſtoria naturalis," 1779, 6 vols. 12mo.; "Renati Rapini Hortorum, lib. iv. et cultura hortenſis, hiſtoriam hortorum addidit," 1778, 8vo.; "Phædri Fabularum, lib. v. cum notis et ſuppl. acceſs. Parallela J. de la Fontaine Fabulæ," 1785, 12mo. A. C. Brotier, the abbé's nephew, who was arreſted in February 1797, as being the chief of a conſpiracy, publiſhed, in 1790, "Paroles memorables récueillies par Gabr. Brotier," 12mo.

BROTO, in *Geography*, a town of Spain in Arragon; 6 leagues from Jaca.

BROUAGE, a maritime town of France, in the department of the Lower Charente, 2 leagues S.W. of Rochefort; it conſiſts of 5 or 6 ſtreets, which terminate in a large ſquare, and is famous for its ſalt-works. N. lat. 45° 50′. W. long. 1° 0′.

BROUCA, a town of Sicily, on the ſouth ſide of the gulf of Catania, and 5 leagues S. of it. N. lat. 37° 25′. E. long. 15° 30.

BROUCK. See BRUGG.

BROUGH, or BROUGH UNDER STAINMOR, a ſmall town of Weſtmoreland, in England, conſiſts chiefly of one long ſtreet, and is ſeated on the great road between York and Carliſle. The ſurrounding country, though bleak and naked, contains ſome good ſoil. Here the long chain of mountains, which bound the eaſtern ſide of Weſtmoreland, is interrupted by another range of hills, which croſſes it from the eaſt to the weſt. A charter was obtained for a market and fair in the time of Edward III.; but the greater markets at Kirkby Stephen and Appleby have entirely ſuperſeded this at Brough. Here are the remains of a caſtle, which bears marks of great antiquity; and its keep is called in old records, "Cæſar's Tower." Antiquaries are agreed in placing the Roman ſtation, "Verteris," at this place; and this appears extremely probable from the various Roman coins, &c. that have been found here, from the character of the caſtrametation, and its diſtance from the ſtations "Lavatris" (Bowes), and "Voreda" (Old Penrith). The remains of the caſtle occupy an eminence, which riſes rather abruptly on the north and weſt from a plain; and on the ſouth and eaſt, where not ſo ſteep, it is additionally fortified with a ditch and vallum. Soon after the Norman conqueſt, this was a place of meeting and conſultation with ſome of the borderers, who conſpired againſt the conqueror.

Near Brough is a large cotton-ſpinning manufactory, belonging to John Carlton, eſq. who has a beautiful ſeat near the town called Hilibeck hall. Brough has three fairs annually; one of which, in September, is noted in the north of England for the great quantity of cattle, horſes, &c. which are brought to it. This town is 261 miles N. W. from London; and contains 117 houſes, with 694 inhabitants. Houſman's Topograph. Deſcript. of Cumberland, &c. 8vo.

BROUGHTON, HUGH, in *Biography*, a learned divine was born in 1549 at Oldbury, in Staffordſhire. Of his early education nothing is now known; but it is ſaid by the biographers of Bernard Gilpin, that he was met by this excellent perſon in his journey to Oxford, whither he was travelling on foot for the purpoſe of becoming a ſcholar there, and taken to his own ſchool at Houghton, whence he was ſent to Cambridge. At that univerſity he became one of the fellows of Chriſt's College, and here he ſo diſtinguiſhed himſelf by his application and proficiency, and particularly, by his knowledge of the Greek and Hebrew languages, as to attract the notice and obtain the patronage of the earl of Huntingdon, who encouraged and aſſiſted him in his ſtudies. From the univerſity he removed to London, and there became a celebrated preacher. His mode of preaching, according to Dr. Lightfoot, was to ſelect two parallel texts, one from the Old Teſtament, and the other from the New, and to diſcourſe upon them in their mutual connection; indulging many fanciful and over-ſtrained interpretations. Notwithſtanding his popularity as a preacher, he purſued his ſtudies without intermiſſion; and he is ſaid to have frequently ſpent 16 hours out of the 24 at his books. In 1588, he publiſhed a work, the reſult of much previous labour, entitled, "The conſent of Scriptures;" which is a kind of ſcripture chronology and genealogies. In this work he zealouſly maintains the incorruptneſs of the ſacred text, both of the Old and New Teſtament; and he contends, that the original tongue of Adam and Eve continued unchanged till the Babyloniſh captivity, that the characters and points are the ſame with thoſe written by God on the two tables, and that the ſacred tongues were changed in the time of the prophet Daniel; but that the ſenſe of the original tongue is preſerved by the LXX. and the New Teſtament. The chief of the Maſorites, according to this writer, was Ezra; and they have kept the letters and words with ſuch care, that none of them can periſh. This work, which excited great attention, was warmly oppoſed by Dr. Reynolds of Oxford; and the author thought the controverſy of ſuch importance, that be wiſhed to have it ſettled by public authority. For explaining his doctrine, Mr. Broughton inſtituted weekly lectures in London; and they were conducted for ſome time at St. Paul's, with the permiſſion of the queen and council, on condition of his returning the names, abodes, and occupations of all his auditors; but by the oppoſition of the biſhops, this indulgence was diſcontinued, and he was obliged to deliver his lectures in private rooms engaged for the purpoſe in different parts of the town. Such was the extravagance of his attachment to the Hebrew language, that, having taught the ſon of a friend to read and ſpeak it at the age of 7 or 8 years, he rigorouſly prohibited his talking even to his mother in Engliſh. In 1589 he went to Germany, and reſided for ſome time at Frankfort, where he held a long diſpute in the Jewiſh ſynagogue with a rabbi concerning the truth of the Chriſtian religion. But in his various diſputations with the Jews, and alſo with the papiſts, he paid no great regard to the rules of prudence and politeneſs. After his return to England, in 1591, he publiſhed "An Explication of the Article of Chriſt's Deſcent to Hell," maintaining with great learning that the word *hades* no where, either among the Greeks, or in the Scriptures, properly denoted hell, or a place of torment, but only the place of ſouls, the ſtate of the dead, or the inviſible world. This opinion, though now generally received, was, upon his firſt avowal of it, violently oppoſed, and particularly by archbiſhop Whitgift and biſhop Bilſon. During a great part of queen Elizabeth's reign he paſſed much of his time abroad; converſing with learned men, and propagating his peculiar opinions. To the archbiſhop of Mentz, who treated him with particular diſtinction, he dedicated his tranſlation of the Hebrew prophets into Greek; and it has been ſaid, though not with great probability of truth, that he was offered a cardinal's hat if he conformed to the church of Rome. On the ſubject of Chriſt's deſcent, he addreſſed an epiſtle in Greek to the Genevans, which was printed at Mentz in 1601; and in this epiſtle he reproved that church for its unbecoming heat and violence with regard to ſome points, and ſpoke with great ſeverity of the celebrated Beza, to whom he alſo addreſſed ſome rude letters, giving to the Jeſuit Serrarius, to whom he ſent copies, full permiſſion to publiſh them. In 1607 the new tranſlation of the bible was begun, and it was thought ſurpriſing, that Broughton had no concern in it; but his peculiar notions, and the diſlike of the epiſcopal bench, prevented his being employed. Finding no encouragement at home, he removed again to the continent, and became for ſome time preacher to the Engliſh at Middleburg in Zealand. But when his health began to decline, he determined to return to England, and to die in his own country. Accordingly he embarked in November 1611; and in the following year he lodged in the houſe of a friend at Tottenham High Croſs, where he died of a pulmonary conſumption in Auguſt, 1612. His funeral was attended by a great concourſe of friends; and his remains were interred in St. Antholin's church-yard. As a ſcholar, and controverſial divine, Mr. Broughton was ſelf opinionated, choleric, rude, and dogmatical; but for the heinous charge of ingratitude to his firſt friend and patron, Bernard Gilpin, againſt whom he is ſaid to have incenſed the biſhop of Durham, there ſeems to be no ſufficient foundation. His works are for the moſt part printed together in one large folio volume, at London, in 1662, with this ſingular title, "The Works of the great Albionean Divine, renowned in every nation for great ſkill in Salem's and Athens' tongue, and familiar acquaintance with all rabbinical learning, Mr. Hugh Broughton." Dr. Lightfoot, addicted to ſimilar kind of literature, highly extols them; but they are now forgotten. During his life, Broughton was not only a ſubject of angry controverſy but of ridicule; an inſtance of which occurs in Ben Johnſon's "Alchymiſt." But this contemptuous reflection was more than counterbalanced by an elegy, poſſeſſing great poetical beauties, written by an obſcure author, called "W. Primroes," and annexed to his works. In this elegy, theology is perſonified, and repreſented as lamenting the loſs of him. What he ſays of him as a linguiſt, is as follows:

"Who, tuneful as the ſilver-pinion'd ſwan,
Canaan's rich language in perfection ſang."
"He knew the Greek, plenteous in words and ſenſe,
The Chaldee wiſe, the Arabic profound,
The Latin pleaſing with its eloquence,
The braving Spaniſh with its lofty ſound,
The Tuſcan grave with many a laurel crown'd,
The liſping French, that fits a lady vain,
The German, like the people, rough and plain,
The Engliſh, full and rich, his native country's ſtrain."

Biog. Brit.

Broughton, Thomas, a learned epiſcopalian divine, and one of the firſt writers in the Biographia Britannica, was born in London, July 5, 1704, educated at Eton, and removed to Cambridge about the year 1722, where he entered himſelf of Gonville and Caius college. At ſchool he had diſtinguiſhed himſelf by the acuteneſs of his genius, and the ſtudiouſneſs of his diſpoſition; and at the univerſity he directed his chief attention to the modern languages, and to the mathematics, which he ſtudied under the famous profeſſor Saunderſon. In 1727, he took both deacon's and prieſt's orders, and left the univerſity, to ſupply the curacy of Offley in Hertfordſhire. In 1739 he was preſented to the rectory of Stepington or Stibington in the county of Huntingdon; and ſoon after he was choſen reader to the Temple, and thus introduced to an acquaintance with biſhop Sherlock, who, in 1744, preferred him to the valuable vicarage of Bedminſter, near Briſtol, together with the annexed chapels of St. Mary Redcliff, St. Thomas, and Abbot's Leigh. Upon receiving this preſentation he removed to Briſtol, where he married a wife, by whom he had ſeven children, of whom ſix ſurvived him. He reſided on his living till his death, which happened Dec. 21ſt 1774; and his remains were interred in the church of St. Mary Redcliff.

Mr. Broughton, during his reſidence in London, aſſociated with the principal literary men of his time, and as he was a great lover of muſic, be was introduced to the acquaintance of Mr. Handel, whom he furniſhed with the words for many of his compoſitions. In his public character he united moderation of temper with a zealous attachment to the Chriſtian cauſe, and in his private life, his diſpoſition was mild, cheerful, and liberal, and he devoted his time and attention to the intereſts and happineſs of his family. From the time of his quitting the univerſity till he was conſiderably advanced in life, he engaged in a variety of publications, of which the following liſt is taken from a paper in his own hand-writing: "Chriſtianity diſtinct from the religion of Nature, in three parts, in anſwer to Chriſtianity as old as the Creation;" "Tranſlation of Voltaire's Temple of Taſte;" "Preface to his Father's Letters to a Roman Catholic;" "Alteration of Dorrel on the Epiſtles and Goſpels, from a Popiſh to a Proteſtant Book," 2 vols. 8vo.; "Part of the new Edition of Bayle's Dictionary in Engliſh, corrected, with a Tranſlation of the Latin, and other Quotations;" "Jarvis's Don Quixote, the Language thoroughly altered and corrected, and the poetical parts new tranſlated;" "Tranſlation of the mottoes of the Spectator, Guardian, and Freeholder;" "Original Poems and Tranſlations by John Dryden, eſq. now firſt collected and publiſhed together," 2 vols.; "Tranſlations of the quotations in Addiſon's Travels, by him left untranſlated;" "The firſt and third Olinthiacs, and the four Philippics of Demoſthenes (by ſeveral hands), reviſed and corrected, with a new Tranſlation of the ſecond Olinthiac, the Oration de Pace, and that de Cherſoneſo, to which are added all the Arguments of Libanius, and ſelect notes from Ulpian," 8vo.; "Lives in the Biog. Brit.;" "The Biſhops of London and Wincheſter on the Sacrament, compared;" "Hercules, a muſical Drama;" "Bibliotheca hiſtorico-ſacra, an hiſtorical Dictionary of all Religions from the Creation of the World to the preſent time," 1756, 2 vols. folio; "A Defence of the commonly received Doctrine of the human Soul;" and "A Proſpect of Futurity, in 4 Diſſertations, with a preliminary Diſcourſe of the natural and moral evidence of a future State." He alſo left in manuſcript "A ſhort View of the Principles upon which Chriſtian Churches require of their reſpective Clergy, Subſcription to eſtabliſhed Articles of Religion," which was compoſed not long before his death. From ſeveral fugitive pieces found in manuſcript among his papers, and two unfiniſhed tragedies written at the age of 17, it is inferred that he poſſeſſed no inconſiderable talents for poetry. Biog. Brit.

Broughton *Iſland*, in *Geography*, an iſland of America, lying at the mouth of Alatamaha river, in Georgia, which belonged to the late Henry Laurens, eſq. The ſouth channel, after its ſeparation from the north, deſcends gently, winding by M'Intoſh and Broughton iſlands, in its way to the ocean through St. Simon's ſound.

BROUKHUSIUS, in *Biography*. See Broeckhuyse.

BROUNCKER, or Brounker, William, lord viſcount of Caſtle Lyons in Ireland, and firſt preſident of the Royal Society, after its incorporation, was the ſon of ſir William Brounker, made viſcount in 1645, and born about the year 1620. At an early period he manifeſted a genius for thoſe mathematical ſciences in which he afterwards excelled. The place and courſe of his education are not known; but in June, 1646, he was created doctor of phyſic at Oxford; and in 1657, and 1658, he correſponded on mathematical ſubjects with Dr. John Wallis, who publiſhed his letters in the "Commercium epiſtolicum," printed at Oxford in 1658, 4to. In April 1660, he united with the nobility and gentry in ſubſcribing a declaration, acknowledging general Monk to be the reſtorer of the laws and privileges of theſe nations. After the reſtoration, he was made chancellor to queen Catharine, and keeper of her great ſeal, a commiſſioner of the admiralty, and maſter of St. Catharine's hoſpital near the Tower of London. He was alſo an active and uſeful member of the Royal Society at its firſt eſtabliſhment, and held the office of preſident with honour to himſelf, and advantage to the inſtitution, for 15 years viz. from July 1662 till November 1677. Of his works, notwithſtanding his activity in promoting literature and ſcience, there are few extant. Theſe are "Experiments on the recoiling of Guns," publiſhed in Dr. Spratt's Hiſtory of the Royal Society; "An algebraical Paper upon the ſquaring of the Hyperbola," publiſhed in the Philoſophical Tranſactions (See Lowthorp's Abr. vol. i. p. 10, &c.); "Several Letters to Dr. James Uſher, archbiſhop of Armagh," annexed to that primate's life by Dr. Parr; and "A Tranſlation of the Treatiſe of Des Cartes, entitled *Muſicæ Compendium*," publiſhed without his name, but enriched with a variety of obſervations, which ſhew that he was deeply ſkilled in the theory of the ſcience of muſic.

Lord Brounker died at his houſe in St. James's ſtreet, Weſtminſter, April 5, 1684, and was buried in a vault in the middle of the choir belonging to the hoſpital of St. Catharine. Biog. Brit.

BROUSONNETRA, in *Botany*. See Papirius.

BROUSSE, in *Geography*, a town of France, in the department of Puy le Dôme; 6 leagues E. of Clermont,

BROUSSON, Claude, in *Biography*, a French proteſtant, who was a zealous partizan, and at length a martyr of the reformed religion, was born at Niſmes in 1647, and educated to the law. He exerciſed the profeſſion of an advocate for 20 years, firſt at Caſtres and afterwards at Toulouſe, with ſingular reputation for generoſity and diſintereſtedneſs, as well as firmneſs and ability. As he took part in his pleadings with the proteſtant miniſters and churches, an attempt was made to corrupt his integrity by the office of a counſellor's place, which he rejected with contempt. It was at his houſe that the deputies of the proteſtant churches aſſembled in 1683, and here they concurred in the reſolution of continuing to aſſemble for public worſhip though their churches were demoliſhed. The execution of this purpoſe was productive of many tumults, ſeditions, and maſſacres; and though they were terminated by an amneſty iſſued from the court of Louis XIV. this was accompanied by an order for arreſting ſeven or eight perſons who had been principally concerned in framing the reſolution. Brouſſon was one of theſe; and apprehending the conſequence, he had previouſly retired to Niſmes; and as ſoon as he received the intelligence of the propoſed arreſt, he fled to Geneva, and afterwards to Lauſanne. At this latter place he publiſhed his "State of the Reformed in France," 1684; and his "Letters to the French Clergy in favour of the Reformed religion," 1685. About this time he was appointed one of the deputies from the principal refugees in Swiſſerland, for engaging the proteſtant powers to intereſt themſelves in favour of the French reformed that were diſperſed through Europe. At Berlin, he compoſed, by deſire of the elector of Brandenburg, his "Letters from the Proteſtants in France to all other Proteſtants." From Berlin he went to Holland, and had ſeveral conferences with the prince of Orange and penſioner Fagel. Afterwards returning to Swiſſerland, he printed "Letters to the Roman Catholics;" and, with a view to the more effectual diſtribution of them in France, he ventured, in 1689, to viſit that country. On his arrival in the Cevennes, he accepted the office of miniſter to a congregation of proteſtants, which aſſembled on the top of a high mountain, and, notwithſtanding the various proſecutions with which he encountered, he continued the exerciſe of his miniſterial functions in theſe parts for 4 years. In 1698, he returned to Lauſanne, and from thence removed to Holland, where he printed "A ſummary Relation of the Wonders wrought by God in the Cevennes and Lower

Languedoc, for the conſolation and inſtruction of his deſolated Church,'' to which his enemies would naturally aſcribe the character of fanaticiſm. He alſo publiſhed a volume of ſermons, and received from the States of Holland a penſion, as a miniſter. Towards the cloſe of the year 1695, he again viſited France, travelling through moſt of its provinces and employing his pen in various writings. During the negociation for the peace of Ryſwick, he exerted himſelf in exciting the proteſtant powers to treat for the re-eſtabliſhment of the French reformed churches. Failing of ſucceſs in this object, he made another tour through France, and, after encountering a variety of hazards, he was at length apprehended at Oleron in September, 1698, and carried for trial to Montpellier. Having been convicted of preaching in defiance of the royal edict, and of having held correſpondence with the enemies of the ſtate, he was condemned to be broken alive upon the wheel, and he endured the execution of this dreadful ſentence with all the firmneſs appropriate to his character. His eloquence and zeal were univerſally acknowledged, and by his own party he was regarded as a martyr. The States of Holland did honour to his memory, by adding 600 florins, as a penſion to his widow, to the 400 which had been allowed to himſelf. Nouv. Dict. Hiſt.

BROUVELIEURES, in *Geography*, a town of France, in the department of the Voſges, and chief place of a canton, in the diſtrict of St. Dié; one league north of Bruyéres. The place contains 414, and the canton 3574 inhabitants; the territory comprehends 130 kiliometres and 10 communes.

BROUWER, in *Biography*. See Brauwer.

BROUZET, Nicholas, was born in the neighbourhood of Montpellier, where he took his degree of doctor in medicine in the year 1736, whence he went to Paris, and was admitted correſponding member of the Royal Academy of Sciences, and ſoon after was made phyſician to the hoſpital at Fontainbleau. He publiſhed, in 1754, "Eſſai ſur l'Education medicinale des Enfans, et ſur leurs Maladies;" a popular work, by which he obtained much credit. In his chapter on Generation, he follows the ſyſtem of Buffon, and ſuppoſes the organized particles to attract each other, as the particles of ſalt do in forming cryſtals. He alſo contends for the power of the imagination of pregnant women, in marking and deforming the fœtus; but though there are theſe, and other blemiſhes, the work contains many uſeful practical rules for the management of infants, and for the cure of their diſeaſes. It was tranſlated into Engliſh and publiſhed in London, in 1755. Haller Bib. Chir. Eloy. Dict. Hiſt.

BROW-*antler*, the firſt branch of the horn of a hart or buck, ſhooting out from the beam, or main horn, next the head.

Brow-*poſt*, in *Carpentry*, a beam which goes acroſs or overthwart a building.

BROWALLA *Heide*, or Browella *heath*, in *Geography*, a plain of Sweden, in the province of Smaland, lying about two Swediſh miles from Wexio, and famous for being the place where the Danes were totally routed by the heroine Blenda, who commanded the Smaland women, in the defence of their huſbands, who were engaged in another expedition. As a recompence of their bravery, the women of Smaland were honoured with extraordinary privileges, and wore a kind of martial head-dreſs; and they have ſtill an equal ſhare of inheritance with the men.

BROWALLIA, in *Botany*, (named by Linnæus in honour of Browallius, biſhop of Abo, who defended the ſexual ſyſtem againſt Seigeſbeck). Linn. gen. 773. Reich. 834. Schreb. 1036. Juſſ. 123. Gært. 304. Pl. 53. Willd. 1175. La Marck. Pl. 535. Claſs, *Didynamia Angioſpermia*. Nat. Ord. *Luridæ—Scrophulariæ*, Juſſ. Gen. Char. *Cal.* perianth one-leafed, tubular, ſhort, five-toothed, permanent; teeth rather unequal. *Cor.* monopetalous, funnel-ſhaped; tube cylindric, as long again as the calyx; border flat, five-cleſt; ſegments rounded, emarginate, the upper one a little larger than the reſt, and conſtituting the upper lip. *Stam.* filaments four, included in the tube; the two longeſt with larger anthers, which cloſe the throat of the corolla. Anthers ſimple, incurved, converging; the inner ones twin, the outer ones opening at the top with a ſmall hole. *Piſt.* germ ovate, retuſe; ſtyle thread-ſhaped, the length of the tube of the corolla; ſtigma thick, four-lobed. *Peric.* capſule ovate, obtuſe, clothed with the calyx, two-celled, many-ſeeded, two-valved; valves bifid at the top; partition flat, thin, parallel to the valves, and ſeparating from the ſides of the capſule as it advances to maturity, whence Linnæus judged it to be one-celled. (Gært. and Juſſ.) *Seeds* numerous, ſmall.

Eſſ. Ch. *Cal.* five-toothed. *Cor.* border five-cleft, nearly equal, ſpreading; throat cloſed by the two larger anthers.

Sp. 1. B. *demiſſa*, Linn. (La Marck Pl. 535.) "Downy; peduncles alternate, one-flowered." *Root* annual. *Stem* herbaceous, about a foot high, branched. *Leaves* alternate, petioled, ovate-pointed, with ſhort hairs on their petioles and nerves. *Flowers* axillary and terminating, ſolitary, ſhorter than the leaves. *Corolla* of a bright, but pale blue colour. Seeds ſent to Mr. Miller from Panama, in 1735, who named the Plant Dalea, in honour of Mr. Dale, an eminent Engliſh botaniſt, and ſent the ſeeds under that name to Linnæus, who thought proper to change the name to Browallia. 2. B. *elata*, Linn. (Curt. Bot. Mag. 34.) "Rather ſmooth, flowers one or more, terminating." *Root* annual. *Stem* about two feet high, cylindric, ſtiff, much branched. *Leaves* lanceolate. *Flowers* of a beautiful violet-blue. Native of Peru. Both theſe ſpecies muſt be raiſed on a hot-bed in the ſpring, and may afterwards be tranſplanted into a warm flower border, where, if the weather be favourable, they will flower and ripen their ſeeds. 3. B. *alienata*, Linn. "Upper leaves oppoſite, two ſtamens the length of the corolla." Taken up by Linnæus ſolely on the authority of Miller's figure; and as Miller himſelf did not inſert it in the later editions of his Dictionary, it is a dubious plant. 4. B. *humifuſa*, Forſk. "Hiſpid, proſtrate; flowers axillary, nearly ſeſſile, white." *Stems* ſlender, branched, hiſpid. *Leaves* oppoſite, oblong, ſeſſile, narrowed at their baſe. *Peduncles* axillary, ſolitary, very ſhort. *Calyx* hiſpid, cylindric, with five thread-ſhaped diviſions. Tube of the *corolla* ſtraight, half an inch long; border open, almoſt regular, with four oval diviſions. *Capſule* compreſſed, one-celled? many-ſeeded, enveloped by the calyx.

BROWERSHAVEN, in *Geography*, ſo called from *port des Braſſeurs*, the port or haven of brewers, a ſea-port town of Zealand, on the north ſide of the iſland of Schouwen, oppoſite to Goree. In 1426, a bloody battle was fought near this town between Philip, duke of Burgundy, and Humphry, duke of Glouceſter, brother to Henry V. king of England, who came with 3000 Engliſh to the aſſiſtance of Mary de Jaqueline, counteſs of Holland, in which the duke of Glouceſter was defeated; 5 miles S. of Goree and S. S. W. of Helvoetſluys. N. lat. 51° 40'. E. long. 4° 15'.

BROWHEAD, a cape of Ireland, at the eaſtern extremity of Barley Cove, in the ſouth-weſtern part of the county of Cork. N. lat. 51° 23' 30''. W. long. 9° 40'.

BROWN, a duſky kind of colour, inclining ſomewhat towards redneſs. Dyers diſtinguiſh divers ſhades and gradations of brown, a ſad brown, London brown, clove brown, purple brown, walnut-tree brown, &c.

The brown colours are biſtre, brown ochre, Cologne earth, ombre and brown pink; which ſee.

Spaniſh brown is a dull red colour, uſed by houſe-painters chiefly for priming, and by colourmen in preparing cloths for pictures and other coarſe work, as being cheap and eaſy to work. It is obtained from a native earth, which is found in the ſtate and of the colour in which it is uſed. The name ſeems to import that it was formerly brought from abroad; but that which is now uſed is dug up in ſeveral parts of England.

For the method of dyeing browns, ſee Dyeing.

Brown, Robert, in *Biography*, the founder of the ſect denominated Brownists, was the ſon of Anthony Brown, eſq. of Tolthorp, in Rutlandſhire, and the grandſon of Francis Brown, whom king Henry VIII., in the 18th year of his reign, privileged by charter to wear his cap in the preſence of himſelf, his heirs, or any of his nobles; and not to uncover but at his own pleaſure; which charter was confirmed by act of parliament. Thus deſcended of an ancient and reſpectable family, nearly allied to the lord treaſurer Burleigh, he was born at Northampton, towards the middle of the 16th century, ſtudied divinity in the univerſity of Cambridge, and afterwards became a ſchool-maſter in Southwark. Adopting the opinions of Cartwright (ſee Cartwright), he determined to form from them what he conceived to be a more perfect ſyſtem of doctrine and practice; and, about the year 1580, he began to inveigh with intemperate vehemence and ardour againſt the diſcipline and ceremonies of the church of England, repreſenting her government as Antichriſtian, her ſacraments as ſuperſtitious, her liturgy as a mixture of popery and paganiſm, and the miſſion of her clergy as no better than that of Baal's prieſts in the Old Teſtament. In the following year he preached at Norwich to a Dutch congregation, in which were ſeveral perſons inclined to Anabaptiſm; and having in this ſituation gained ſome proſelytes to his opinions, and eſtabliſhed a character for ſanctity and zeal, he formed a connection with a ſchoolmaſter, whoſe name was Richard Harriſon; and, with his aſſiſtance, he collected a number of diſciples, partly Dutch and partly Engliſh, who, diſapproving the forms and ſervice of the eſtabliſhed church, were formed into a ſeparate ſociety under the denomination of Brownists. Upon this, Brown was convened before Dr. Freake, biſhop of Norwich, and other eccleſiaſtical commiſſioners; but as he perſiſted in maintaining his opinions, and behaved in an unbecoming manner before the court, he was committed to the cuſtody of the ſheriff, from which, however, he was releaſed by the interpoſition of his relation, the lord-treaſurer Burleigh, who candidly imputed his error and obſtinacy to zeal rather than malice, and recommended reaſoning rather than harſh treatment, as the moſt likely means of reclaiming him. The lord-treaſurer's letter to the biſhop produced the deſired effect. His lordſhip afterwards requeſted archbiſhop Whitgift to give his kinſman neceſſary inſtruction and counſel; but Brown left the kingdom, and ſettled at Middleburg in Zealand, where he and his followers obtained leave of the States to worſhip God in their own way, and to form a church according to their own model; a ſketch of which was drawn up by Brown, in a treatiſe printed at Middleburg in 1582. This conſiſts of three tracts; the *firſt* entitled "A Treatiſe of Reformation, without tarrying for any, &c.;" the object of which is to excite the people to withdraw from the church, and unite with him, and to exclude the civil magiſtrate from any authority over eccleſiaſtical perſons and concerns: the *ſecond* is, "A Treatiſe upon the 23d chapter of St. Matthew, &c." in which the author exclaims againſt the abuſe of tongues in preaching, that is, againſt the uſe of Hebrew, Greek, or Latin, in ſermons: alſo, againſt the uſe of logic and rhetoric, &c.; againſt diſorderly preaching at St. Paul's croſs, &c.; and againſt pariſh-preachers and hired lecturers: and the *third* is entitled, "A Book which ſheweth the Life and Manners of all true Chriſtians, and how unlike they are unto Turks and Papiſts, and Heathen folk, &c." Some time before the year 1585, Brown left Middleburg, and came over to England; for in this year he was cited to appear before archbiſhop Whitgift, to anſwer to certain matters contained in a book publiſhed by him; and when he had been brought, by the prelate's reaſoning, to a tolerable compliance with the church of England, he was ſent to his father in the country, and recommended by the lord treaſurer to his favour and affection. Brown's opinions, however, were too deeply fixed to be eaſily eradicated; and therefore his father, with a ſeverity very different from the conduct of the lord-treaſurer, diſowned him for his ſon, and expelled him from his houſe. Brown had now no ſettled habitation, and encountered various hardſhips; but at length he ſettled in Northamptonſhire, and perſiſted in zealouſly propagating his tenets. Being cited to appear before the biſhop of Peterborough, he refuſed to obey, and was excommunicated for contempt. This cenſure alarmed and humbled him; and having made his ſubmiſſion, he obtained abſolution. Accordingly, about the year 1590, he renounced his principles of ſeparation, from that time continued in the communion of the church, and was ſoon after preferred to the rectory of a church in Northamptonſhire. Fuller, however, is of opinion, that Brown never formally recanted his opinions with regard to the main points of his doctrine; but that his promiſe of a general compliance with the church of England, improved by the countenance of his patron and kinſman, the earl of Exeter, prevailed upon the archbiſhop, and procured this extraordinary favour for him. He adds, that Brown allowed a ſalary for one to diſcharge his cure; and though he oppoſed his pariſhioners in judgment, yet agreed in taking their tythes. His ſect, however, long ſurvived his revolt; and of its peculiar tenets an account is given under the article Brownists. Brown is repreſented as a man of good parts and ſome learning; but his temper was imperious and uncontrollable; nor was his conduct agreeable to the Sabbatarian ſtrictneſs which was afterwards profeſſed by his followers. Fuller ſays of him, that he had a wife with whom he never lived, and a church in which he never preached, though he received the profits of it: and as all the other ſcenes of his life were ſtormy and turbulent, ſo was his end; for the conſtable of his pariſh requiring ſomewhat roughly the payment of certain rates, his paſſion moved him to blows; of which the conſtable complained to juſtice St. John, who inclined to pity rather than to puniſh him; but Brown behaved with ſuch inſolence, that he was ſent to Northampton gaol, on a feather-bed in a cart, being very infirm, and aged above 80 years, where he ſoon after ſickened and died, in the year 1630; after boaſting of his perſecutions, and "that he had been committed to 32 priſons, in ſome of which he could not ſee his hand at noon day." Biog. Brit.

Brown, Thomas, an ingenious writer, who lived towards the cloſe of the 17th century, was the ſon of a farmer in Shropſhire, and educated at Newport ſchool in that county, where he acquired a conſiderable acquaintance with the Latin, Greek, French, Italian, and Spaniſh languages;

which was farther improved at Chriſt-church, in the univerſity of Oxford. But notwithſtanding his literary attainments, his conduct was ſo irregular, that he was under a neceſſity of quitting the univerſity; and, inſtead of returning to his father, he removed to London, where he was in danger of ſtarving. In theſe circumſtances of penury and diſtreſs, he was relieved, by being appointed ſchool-maſter at Kingſton-upon-Thames; a profeſſion, however, which, being very unſuitable to his diſpoſition, he ſoon abandoned. Returning to London, he commenced author; and employed himſelf in writing for the bookſellers. His publications were very numerous, and conſiſted of dialogues, letters, poems, &c. in which his erudition was enlivened by his humour; for in his writings, as well as in his converſation, he was always ſprightly and facetious. But though he had the reputation of a ſcholar, he was deſtitute of prudence; and, as he indulged his genius for ſatire to an extravagant degree, he was more likely to forfeit than to conciliate the friendſhip of thoſe who were able to aſſiſt him; and it was ſaid of him, that he rather choſe to loſe his friend than his joke. He took pleaſure in libelling both the clergy and laity, and his indecorous treatment of religion laid the foundation for remorſe, which is ſaid to have embittered the laſt moments of his life. Mr. Jacob informs us, that towards the cloſe of his career, he was favoured by the earl of Dorſet; that being invited to dine with him in company with Dryden, and ſome other gentlemen of ſimilar deſcription, he found, to his agreeable ſurpriſe, a bank note of 50l. under his plate, at which time Dryden was preſented with another of 100l. Brown died in 1704, and was interred in the cloiſter of Weſtminſter abbey, near the remains of Mrs. Behn, with whom he had been intimate. His works, conſiſting of dialogues, eſſays, declamations, ſatires, letters from the dead to the living, tranſlations, &c. were printed in 4 vols. 12mo. in 1707. They are not deſtitute of learning, and abound wirh humour, which is juſtly charged with want of delicacy. Biog. Dict.

BROWN, MOSES, vicar of Olney, Berks, and chaplain of Morden college, was born in 1703, and was originally a pen-cutter. In 1723, he publiſhed two dramatic pieces, called "Polidus, or diſtreſſed Love," a tragedy, and "All bedevilled," a farce, both acted at a private theatre in St. Alban's ſtreet. On the inſtitution of the Gentleman's Magazine, he became a contributor to it; and obtained ſome of the prizes offered by Mr. Cave, for the beſt poems; and, in 1739, he publiſhed a volume of poems in 8vo., and, in 1749, "Sunday Thoughts," a poem, 12mo. In 1756, he publiſhed "Percy Lodge," a deſcriptive poem; he alſo edited "Walton's Complete Angler;" and, in 1773, republiſhed his "Piſcatory Eclogues." He alſo tranſlated Zimmermann, and was the author of ſome ſermons. He died Sep. 13th, 1787. Biog. Dict.

BROWN, JOHN, a clergyman of the church of England, and an ingenious writer, was born in 1715 at Rothbury, in Northumberland, and educated, firſt at Wigton, and afterwards at St John's college, Cambridge, where he acquired great reputation. Upon his quitting the univerſity in 1735, he took orders, and firſt ſettled as minor canon and lecturer in the city of Carliſle. In 1739, he took his degree of maſter of arts at Cambridge; and in the year of the rebellion 1745, he diſtinguiſhed himſelf by his zeal for government, and by the intrepidity with which he entered as a volunteer at the ſiege of Carliſle. In the following year, he preached, on occaſion of the trial of ſome of the rebels, two admirable diſcourſes on the connection between religious truth and civil liberty, and between ſuperſtition, tyranny, irreligion, and licentiouſneſs; and his avowed attachment to the principles of whiggiſm recommended him to the patronage of Dr. Oſbaldeſton, biſhop of Carliſle, who obtained for him a living in Weſtmoreland. About this time, his talents for correct and elegant verſification were evinced, in a poem on "Honour," inſcribed to lord Lonſdale, and in an "Eſſay on Satire," addreſſed to Dr. Warburton, and prefixed to this eminent critic's edition of Pope's works. The friendſhip of Warburton was ſoon followed by that of Mr. Ralph Allen of Prior park, who entertained Mr. Brown at his houſe, and offered him pecuniary aſſiſtance. During his viſit at Prior-Park, he preached two ſermons at the abbey-church of Bath; one of which, expoſing the miſchiefs of immoderate gaming, is ſaid to have induced the magiſtrates to iſſue an order for the ſuppreſſion of the public gaming tables. In 1751, he publiſhed a work which may be ſtill regarded as one of his moſt capital productions: viz. "Eſſays on the characteriſtics of the earl of Shaftſbury," comprehending one "On Ridicule, conſidered as a Teſt of Truth;" another, "On the Motives to Virtue, and the Neceſſity of religious Principle;" and a third, "On revealed Religion and Chriſtianity." Theſe eſſays are written with elegance and ſpirit, and, at the ſame time, with candour and politeneſs. They were of courſe much read, and frequently re-publiſhed, ſo that a fifth edition of them appeared in 1764. In 1755, Mr. Brown was honoured with the title of doctor of divinity at Cambridge; and, in the ſame year, he ventured to appear before the public under the new character of a dramatic writer. With the aſſiſtance of Mr. Garrick, his tragedy of "Barbaroſſa," was exhibited on the ſtage with advantage; and this was ſucceeded in the enſuing year by "Athelſtan." Both theſe performances were publiſhed without his name.

The next publication which we ſhall mention, forms a kind of era in the author's life; it appeared in 1757, and was entitled "An Eſtimate of the Manners and Principles of the Times." This work was publiſhed at a time, when the ſpirits of the people were extremely depreſſed by ſome unproſperous events that had occurred at the commencement, and during the progreſs of the war, in which the nation was engaged; and it was deſigned to ſhew, that a vain, luxurious, and ſelfiſh effeminacy, in the higher ranks of life, marked the character of the age, and to point out the cauſes and the effects of this effeminacy. The "Eſtimate," adapted to the circumſtances and diſpoſition of the people, at the time when it appeared, was read with avidity, and ſeven editions of it were called for in little more than a year. It did not paſs, however, unnoticed; it was attacked in a variety of publications; but the moſt effectual reply to it was, as Voltaire obſerves, that the Engliſh, from that period, began to beat their enemies in every quarter of the globe. In 1758, Dr. Brown publiſhed a ſecond volume of the "Eſtimate," and afterwards, "An explanatory Defence of the Eſtimate, by way of Appendix;" but the circumſtances of the country were changed, and the public attention drooped, ſo that theſe pieces, though well written, were much leſs popular. Beſides, the vanity and ſuperior confidence of the author, which had not eſcaped notice in his firſt publication, became now more conſpicuous, and diſguſted even many of his admirers; nor could the avowal of the integrity of his intentions, and the greater modeſty with which he vindicated himſelf, in the "Explanatory Defence," avail to remove the prejudices that had been conceived againſt him. Dr. Brown manifeſted an irritability of temper, and a propenſity to quarrel with his friends and patrons, which prevented him from obtaining thoſe eccleſiaſtical preferments, to which his literary reputation entitled him; ſo that the vicarage of St. Nicholas, in Newcaſtle upon Tyne, with the office of one of the king's chaplains in ordinary, conſtituted the final ſum of his church promotions. In 1760, he publiſhed "An Additional Dialogue of the Dead, between Pericles and Coſmo," which was ſuppoſed to be a vindication of Mr. Pitt's political conduct againſt ſome reflections of lord Lyttelton: and this was followed in 1763, by "The Cure of Saul, a ſacred Ode," which was ſet to muſic, and performed as an oratorio; and by an ingenious and elegant performance, entitled, "A Diſſertation on the Riſe, Union, and Power, the Progreſſions, Separations, and Corruptions of Poetry and Muſic." This diſſertation, though ingenious and critical, advanced fanciful principles, and manifeſted a degree of credulity, with reſpect to the ſuppoſed effect of certain public inſtitutions among the ancients, which gave riſe to a variety of ſtrictures. In 1764, Dr. Brown detached from his "Diſſertation" the ſubſtance of that part which related to poetry, and publiſhed it ſeparately in an octavo treatiſe, entitled "The Hiſtory of the Riſe and Progreſs of Poetry through its ſeveral Species;" and in the ſame year he publiſhed a volume of "Sermons," being chiefly a collection of thoſe which had before been printed ſingly. Of the new are thoſe excellent diſcourſes on education, in which the author has unanſwerably refuted ſome of the poſitions of Rouſſeau in his Emilius, and other ſpeculatiſts, and ſatisfactorily evinced the neceſſity and importance of forming the minds of children to early habits of piety and virtue. The author's attention was again directed towards politics, and in 1765, appeared his "Thoughts on civil Liberty, Licentiouſneſs, and Faction," containing cenſures on thoſe perſons, who, at that time, oppoſed the meaſures of adminiſtration, and cloſing with a preſcribed code of education. As he propoſed that this code ſhould be adopted and enforced by government, it produced the animadverſions of Dr. Prieſtley, in his "Eſſay on the Courſe of a liberal Education, for civil and active Life." The author's diſcourſes on education in general, were followed by a ſermon "On the Female character and education," to which is annexed an appendix, in which he ſtates, in a very liberal manner, the moral and political principles which ſhould be inculcated on the attention of young perſons; and, in his opinion, theſe are ſuch as are evidently founded on the precepts of chriſtianity, and the laws of freedom. He proceeds further to diſcuſs the queſtion, "whether there be any opinions or principles which ought not to be tolerated (or ſuffered to be taught) in a well ordered, free community?" and to this queſtion, he replies, that, in his judgment, there are many opinions or principles, tending evidently to the deſtruction of ſociety or freedom, and which, therefore, ought not to be tolerated in ſuch a community. Accordingly, he alleges inſtances in the three principal kinds, religious, moral, and political, taken from Mr. Locke, and ſupported by his authority. In 1766, appeared Dr. Brown's laſt publication, which was "A Letter to the Rev. Dr. Lowth, occaſioned by his late Letter to the right Rev. Author of the divine Legation of Moſes," and repelling inſinuations, unjuſtly ſuppoſed to have been aimed at his moral character, on account of his adulation and defence of Dr. Warburton. Beſides the works already mentioned, Dr. Brown publiſhed a "Poem on Liberty," and ſome anonymous pamphlets. He had alſo announced an intention of publiſhing "Principles of Chriſtian Legiſlation;" but his deſign was fruſtrated by his death. In his will, however, he gave orders, among other particulars relating to the arrangement and publication of his works, that this treatiſe ſhould be finiſhed; but this part of his will was never executed.

At the time when Dr. Brown's diſcourſes on education were publiſhed, Dr. Dumareſq had been invited to reſide in Ruſſia, and was employed by the empreſs in ſuggeſting regulations for the eſtabliſhment and conduct of ſeveral ſchools, which ſhe was about to erect in various parts of her dominions. On this occaſion, a correſpondence was propoſed by a lady of England, between him and Dr. Brown, who entered largely into the ſubject, ſketched the outline of a grand ſcheme of education, and alſo of legiſlation, for the Ruſſian empire, and voluntarily offered to remove to Ruſſia for the purpoſe of aiding in the execution of it. Dr. Dumareſq, after ſome previous deliberation and conference with Monſ. Muller, his aſſociate in the buſineſs, tranſlated Dr. Brown's paper into French, and preſented it to M. de Panin, who laid it before the empreſs. She was impreſſed by the communication; and Dr. Dumareſq was commiſſioned to invite Dr. Brown to the Ruſſian court. He accepted the invitation; and received a remittance of 1000l. which the empreſs had ordered towards defraying the expences of his journey. The length of the journey, the changes of climate, and various other circumſtances alarmed his friends, who obſerved, that his conſtitution was enfeebled by repeated attacks of the gout: and they diſſuaded him from the undertaking, which, after various preparations, he at length determined to renounce. As he had received only 200l. of the money that had been ordered, and returned above one half of it, after deducting the expences which he had unavoidably incurred; his honour and integrity in the whole tranſaction were unimpeachable; more eſpecially as he continued to tranſmit to the empreſs ſuch obſervations as might ſerve to facilitate the execution of her plans, and render them effectual to the purpoſe for which they were adopted. This negotiation agitated the ſpirits of Dr. Brown; and its iſſue, in which, however, he thought it prudent to acquieſce, diſappointed and mortified him. The pride of his temper, and the ſenſe he entertained of his own importance, contributed, in no ſmall degree, to that dejection of mind, which, concurring with a conſtitutional tendency to inſanity, led him to put an end to his life with a razor, Sept. 23d, 1766, in the 51ſt year of his age. Biog. Brit.

BROWN, SIR WILLIAM, M.D. of a reſpectable family in the county of Norfolk, was born in the year 1692. His father, who was a phyſician, firſt inſpired him with a taſte for the ſtudy of medicine. In 1707, when he was only 15 years of age, he was admitted of Peterhouſe in Cambridge; and having paſſed through the preliminary degrees, he was, in 1721, admitted doctor in medicine. Of the reſpect he retained for his alma mater, and of his fondneſs for literature, he gave evidence, by leaving to the univerſity of Cambridge a ſum of money, the intereſt of which he directed to be laid out every year, in furniſhing three gold medals, to be given to the three moſt ſucceſsful candidates in Greek, and Latin poetry. Of the books left him by his father, he ſays, he kept for his pocket companions, Bleau's Greek Teſtament, Hippocrates' Aphoriſms, and an Elzevir's Horace; "from the firſt to draw divinity, from the ſecond phyſic, and from the laſt good ſenſe and vivacity." Soon after leaving college, he went to Lynn in Norfolk, where he practiſed phyſic nearly thirty years, and as it appears, with reputation and profit; for ſpeaking of his leaving that town to come to London, he ſays, "The manly age and inclination, with conformable ſtudies, I diligently applied to the practice of phyſic, in the country, where, as that age adviſeth, I ſought riches and friendſhips. But being at length ſatiated with friends, whom truth, not flattery, had procured; ſatiated with riches which Galen, not fortune, had preſented; I reſorted to this college (of phyſicians) where I might addict myſelf totally to the ſervice of honour."

This was about the year 1750. He did not, however, decline practice when he came to London, going wherever he was ſent for; but as he was a humouriſt, and had many ſingularities in his dreſs, manners, and converſation, he never became very popular as a phyſician in this place. This did not prevent his receiving all the honours the college could beſtow upon him. They gratified his vanity, his ruling paſſion, by electing him preſident two ſucceeding years. It was the cuſtom, ſir William tells us, in his farewell oration, "to continue the preſident, an entire luſtrum, five years. But two years, he adds, more than ſatisfy me; that each of the elects may, in his turn, hold the ſceptre of prudence, no tenure pleaſing longer than a year." He felt, however, this deviation from their cuſtom, and the college probably loſt a legacy; but they were obliged to paſs him by, as his ſingularities had attracted the notice of Mr. Foot, the Ariſtophanes of the age, who appeared in the Devil upon Two Sticks, one of his farces, in the coſtume of the doctor; the wig, the coat, the glaſs, and every action ſo exactly imitated, that no one could doubt who was intended to be repreſented. At one of the exhibitions of this piece the doctor was preſent, and the next day he ſent a card to Mr. Foot, complimenting him on having ſo happily repreſented him; but finding he had forgot the muff, he had ſent him his own. This good-natured reproof diſarmed Foot, and the imitation was diſcontinued. About the ſame time he became the ſubject of a print, in which he was caricatured not by diſtorting, but by giving an exact delineation of his perſon, dreſs, and geſture: the inſcription is Fuſcus, eques, medicus, rhetor, dux, atque poeta. Ecce! 1771. The doctor, however, took all in good part, and continued rather to follow his own humour, than the manners and faſhions of the world. As proofs of his good nature, and proofs of his being perfectly at peace with himſelf, we may mention that when he was at Lynn, a pamphlet being publiſhed to ridicule him, he nailed it to the outſide of his door, that it might be read by all who paſſed by; and when he was in the 80th year of his age, he went to Batſon's coffee-houſe, on St. Luke's day, in his laced coat and band, with fringed white gloves, to ſhew himſelf to Mr. Croſby, then lord-mayor. A gentleman preſent obſerving how well he looked, the doctor obſerved, "He had neither wife nor debts." He had, however, been married, and left one daughter, who became the wife of Martin Folkes, and mother to ſir Martin Browne Folkes, bart. From the time of his coming to London he lived in Queen ſquare, Great Ormond ſtreet, where he ended his days on the 10th of March, 1774, in the 82d year of his age. He had always been fond of ſcribbling, and in the early part of his life printed (for they could hardly be ſaid to be publiſhed, the circulation of them being nearly confined to his friends) "Tranſlations, or Imitations, of certain Odes of Horace;" and afterwards, when in London, his "Harveian Oration," and "A Vindication of the College of Phyſicians againſt the Licentiates, and their Advocate, ſolicitor-general Murray." Theſe he collected together, and, in 1765, printed under the title of "Opuſcula Varia, &c." He alſo publiſhed a farewell oration, on quitting the preſidency of the college, from which the principal traits of his life here given have been taken. New and General Biog. Dict.

Brown, John, a ſurgeon of eminence in London, publiſhed, in 1678, "A Treatiſe of Glandules, and Strumas, the King's Evil, &c." 4to.; and, in 1681, "A complete Treatiſe of the Muſcles, as they appear in the Human Body," folio, London. This has been tranſlated into Latin, and printed at Leyden, Amſterdam, Berlin, &c. though now ſuperſeded by more accurate deſcriptions. The plates are principally taken from Julius Caſſarius. He alſo communicated to the Royal Society an account of a diſeaſed liver, which is publiſhed in their Tranſactions. Haller. Bib. Anat.

Brown, Patrick, M.D. practiſed medicine at Jamaica, and publiſhed in 1756, folio, "The civil and natural Hiſtory of Jamaica, containing an Account of its natural Productions, Foſſils, Vegetables, and Animals." He deſcribes the manner practiſed there, of cultivating the ſugar-cane, coffee-tree, cotton, ginger, and indigo, and of collecting aloes from inciſions made in the leaves of the plant. Haller. Bib. Bot.

Brown, John, a celebrated teacher of medicine, born in the pariſh of Buncle, in the county of Berwick, in the year 1735, of parents in a mean ſituation in life. In common with the children of other villagers in Scotland, he received his education at a grammar-ſchool. As his mind was much above the rank he was born in, his progreſs in literature was proportionably ſuperior to the reſt of his ſchool-fellows. He there imbibed a taſte for letters; ſo that when he was afterwards put apprentice to a weaver, inſtead of attending to his buſineſs, his whole mind was bent on procuring books, which he read with great eagerneſs. Finding this diſpoſition could not be conquered, his father took him from the loom, and ſent him to the grammar-ſchool at Dunſe, where the famous Duns Scotus had been educated. Here, under the tuition of Mr. Cruickſhanks, he made ſuch progreſs, that he was ſoon regarded as a prodigy. He read all the Latin claſſics with the greateſt facility, and was no mean proficient in the knowledge of the Greek language. "His habits," we are told, "were ſober; he was of a religious turn, and was ſo ſtrongly attached to the ſect of Seceders, or whigs, as they are called in Scotland, in which he had been bred, that he would have thought his ſalvation hazarded, if he had attended the meetings of the eſtabliſhed church. He aſpired to be a preacher of a purer religion." An accident, however, diſguſted him with this ſociety, before he was of an age to be choſen a paſtor, for which it appears he was intended. Having been prevailed on, by ſome of his ſchool-fellows, to attend divine ſervice at the pariſh church at Dunſe, he was ſummoned before the ſeſſion of the ſeceding congregation, to anſwer for this offence; but his high ſpirit not brooking to make an apology, to avoid the cenſures of his brethren, and the ignominy of being expelled their community, he abdicated his principles, and profeſſed himſelf a member of the eſtabliſhed church. As his talents for literature were well known, he was taken, at the age of twenty, to the houſe of a gentleman in the neighbourhood of Dunſe, as tutor to his ſon. Here he did not long reſide, for what cauſe is not known, but went the ſame year, 1755, to Edinburgh, where he applied to the ſtudy of theology, in which he proceeded ſo far as to deliver, in the public hall, a diſcourſe upon a preſcribed portion of ſcripture, the uſual ſtep preliminary to ordination. But here his theological ſtudies appear to have ended, and he ſuddenly left Edinburgh, and returned to Dunſe, and officiated as an uſher in the ſchool where he had been educated. He now exhibited himſelf as a free-liver and free-thinker, his diſcourſe and manners being equally licentious and irregular; which accounts for his dereliction of the ſtudy of theology. At Dunſe he continued twelve months, from Michaelmas 1758, to the ſame time in the year 1759. During this time, a vacancy happening in one of the claſſes in the high ſchool at Edinburgh, Brown appeared as a candidate, but was not ſucceſsful. Soon after he was applied to by a ſtudent in medicine, at Edinburgh, to put his inaugural theſis into Latin. This taſk he performed in ſo ſuperior a manner, that it gained him great reputation: it opened to him a path, which he had not probably before thought of, for turning his erudition to profit. On the ſtrength of the character procured him by this performance, he returned to Edinburgh, and determined to apply to the ſtudy of medicine. "He had now," he ſaid, "diſcovered his ſtrength, and was ambitious of riding in his carriage as a phyſician." At the opening of the ſeſſion, he addreſſed Latin letters to each of the profeſſors, who readily gave him tickets of admiſſion to their lectures, which he attended diligently for ſeveral years; in the interim, teaching Latin to ſuch of the pupils as applied, and aſſiſting them in writing their theſes, or turning them into Latin. The price, when he compoſed the theſis, was ten guineas; when he tranſlated their compoſitions into Latin, five. If he had been now prudent, or had not indulged in the moſt deſtructive exceſſes, he might, it is probable, in a few years, have attained the eminence he promiſed himſelf; but he marred all by his intemperance. In no long time after this, his conſtitution, which had been hardy and robuſt, became debilitated, and he had the face and appearance of a worn-out debauchee. His bad habits had not, however, prevented his getting the friendſhip or aſſiſtance of Dr. Cullen, who, deſirous of availing himſelf of his talents, employed him as a tutor to his ſons, and made uſe of him as an aſſiſtant in his lectures; Brown repeating to his pupils, in the evening, the lecture they had heard in the morning, and explaining to them ſuch parts as were abſtruſe and difficult. In 1765 he married, and took a houſe, which was ſoon filled with boarders; but continuing his improvident courſe, he became a bankrupt at the end of three or four years. He now became a candidate for one of the medical chairs, but failed; and as he attributed his miſſing this promotion to Dr. Cullen, he very unadviſedly broke off his connection with him, and became the declared enemy to him, and his ſyſtem; which he had always before ſtrenuouſly defended. This probably determined him to form a new ſyſtem of medicine, doubtleſs meaning to annihilate that of his former patron. As he had read but few medical books, and was but little verſed in practice, his theory muſt have been rather the reſult of contemplation, than of experience. That in forming it, he was influenced by his attachment to ſpirituous liquors, ſeems probable from internal evidence, and from the effects he attributed to them of diminiſhing the number, as well as the ſeverity of the fits of the gout, under which he ſuffered. He always found them more ſevere and frequent, he ſays, when he lived abſtemiouſly. One of his pupils informed Dr. Beddoes, "that he was uſed, before he began to read his lecture, to take fifty drops of laudanum in a glaſs of whiſky; repeating the doſe four or five times during the lecture. Between the effects of theſe ſtimulants, and voluntary exertions, he ſoon waxed warm, and by degrees his imagination was exalted into phrenzy." His intention ſeems to have been to ſimplify medicine, and to render the knowledge of it eaſily attainable, without the labour of ſtudying other authors. All general, or univerſal diſeaſes, were therefore reduced by him to two great families or claſſes, the ſthenic and the aſthenic; the former depending upon exceſs, the latter upon deficiency of exciting power. The former were to be removed by debilitating, the latter by ſtimulant medicines, of which the moſt valuable and powerful are wine, brandy, and opium." As aſthenic diſeaſes are more numerous, and occur much more frequently than thoſe from an oppoſite cauſe, his opportunities of calling in the aid of theſe powerful ſtimuli were proportionately numerous. "Spaſmodic and convulſive diſorders, and even hemorrhages," he ſays, "were found to proceed from debility; and wine, and brandy, which had been thought hurtful in theſe diſeaſes, he found the moſt powerful of all remedies in removing them." When he had completed his plan, he publiſhed his theory, or ſyſtem, under the title of "Elementa Medicinæ," from his preface to which the preceding quotations have been principally taken. Though he had been eleven or twelve years at Edinburgh, he had not taken his degree of doctor; and as he was now at variance with all the medical profeſſors, not thinking it prudent to offer himſelf there, he went to St. Andrew's, where he was readily admitted to that honour. He now commenced public teacher of medicine, making his Elementa his text book; and convinced, as it ſeems, of the ſoundneſs of his doctrine, he exultingly demands (preface to a new edition of the tranſlation of his Elementa, by Dr. Beddoes) whether the medical art hitherto conjectural, incoherent, and in the great body of its doctrines falſe, was not at laſt reduced to a ſcience of demonſtration, which might be called the ſcience of life." His method in giving his lectures was, firſt to tranſlate the text book, ſentence by ſentence, and then to expatiate upon the paſſage. The novelty of the doctrine procured him at firſt a pretty numerous claſs of pupils; but as he was irregular in his attendance, and his habits of drinking increaſed upon him, they were ſoon reduced in number, and he became ſo involved in his circumſtances, that it became neceſſary for him to quit Edinburgh; he therefore came to London in the autumn of the year 1786. Here, for a time, he was received with favour, but his irregularities in living increaſing upon him, he came to his lodgings, in the evening of the 8th of October in 1788, intoxicated, and taking, as it was his cuſtom, a large doſe of laudanum, he died in the courſe of the night, before he had entered on his career of lecturing, for which he was making preparations. He had the preceding year publiſhed "Obſervations on the old Syſtems of Phyſic," as a prelude to the introduction of his own; but it was little noticed. His opinions have, however, met with patrons in Germany and Italy, as well as in this country, and ſeveral volumes have been written on the ſubject of them; but they are now pretty generally, and deſervedly, abandoned. Beddoes' edition of John Brown's tranſlation of his Elementa Medicinæ, 1795.

Brown, John, an ingenious artiſt and elegant ſcholar, was born at Edinburgh in 1752, and deſtined to the profeſſion of a painter. Whilſt he was at Rome, he became acquainted with ſir William Young and Mr. Townley, and accompanied them, as a draftſman, into Sicily. In this iſland he was employed in taking ſeveral fine views of its antiquities, which were exquiſitely finiſhed, and preſerved the appropriate character of the buildings which he intended to repreſent. Upon his return to his native town, after a reſidence in Italy of more than ten years, he gained the eſteem of many literary perſons by his elegant manners and inſtructive converſation on various ſubjects of art, and particularly on muſic, of which his knowledge was very extenſive and accurate. He was particularly diſtinguiſhed by the attention of lord Monboddo, who, in the fourth volume of the "Origin and Progreſs of Language," repreſents him as eminently ſkilled in the arts of painting, ſculpture, muſic, and poetry: nor was he leſs deſerving of reſpect for his moral qualities than for his literary attainments. In 1786 he viſited London, where he was much employed as a painter of ſmall portraits with black lead pencil, which, beſides being correctly drawn, faithfully exhibited the features and character of the perſons whom they repreſented. Death, however, deprived the public of this ingenious artiſt in 1787, by the progreſs of a diſeaſe, which he bore with a firmneſs of mind that had marked his character through life. Soon after his death, his "Letters on the Poetry and Muſic of the

the Italian Opera," were publiſhed in 12mo., together with an introduction, by lord Monboddo, in one volume, 12mo., 1789, for the benefit of his widow. Mr. Brown left behind him ſeveral very highly finiſhed portraits in pencil, and many exquiſite ſketches in pencil, and in pen and ink, which he had taken of perſons and places in Italy. The peculiar characteriſtics of his hand were delicacy, correctneſs, and taſte; and the leading features of his mind were acuteneſs, liberality, and ſenſibility, joined to a character firm, vigorous, and energetic. His laſt performances were two exquiſite drawings, one from Mr. Townley's celebrated buſt of Homer, and the other from a fine original buſt of Mr. Pope, generally ſuppoſed to have been the work of Ryſbrack. From theſe two drawings, two very beautiful engravings have been made by Mr. Bartolozzi, and his pupil, Mr. Bovi. Biog. Dict.

Brown, Abraham, one of the principal performers on the violin, before the arrival of Giardini, in this country. After the death of Feſting, in 1752, he ſucceeded him at Ranelagh, as leader of the king's band, and at ſeveral concerts. But this performer, who had a clear, ſprightly, and loud tone, with a ſtrong hand, and had travelled through Italy, was ignorant of muſic, and the pieces he played conſiſted of *notes, et rien que des notes*: for he had no ſoul or ſenſe of expreſſion. He brought over a favourite ſolo of Tartini (the ſecond in the ſecond ſet, publiſhed by Walſh), with which alone he figured at all concerts, for at leaſt ſix or ſeven years, without ever entering into Tartini's true ſtyle of playing it, or that of any performer of his ſchool. Mr. Brown, however, had not the mortification either to feel or know his defects; but, on the contrary, was comforted with a full conviction of his ſuperiority.

BROWNE, George, an Iriſh prelate, and the firſt biſhop that eſpouſed and promoted the reformation in that country; was originally an Auguſtine friar of London, and educated in the houſe of his order, near Holywell, in Oxfordſhire. He afterwards became provincial of the Auguſtine monks in England. Having taken the degree of doctor of divinity at ſome foreign univerſity, he was admitted to the ſame degree at Oxford in 1534, and ſoon after at Cambridge. Upon the peruſal of ſome of Luther's writings, he entertained a favourable opinion of his doctrine, and recommended to the people to make their ſupplications ſolely to Chriſt, and not to the Virgin Mary, or the Saints. Theſe ſentiments procured for him the favour of Henry VIII., who promoted him in March, 1535, to the archbiſhopric of Dublin, and ſoon after appointed him one of the commiſſioners for executing the royal mandate, that obliged the Iriſh to renounce the papal ſupremacy. In the conduct of this buſineſs he encountered many difficulties; as he alſo did in carrying through the parliament, which met in Dublin, May 1, 1536, the bill for eſtabliſhing the king's ſupremacy over the church of Ireland. During the progreſs of the reformation, when Henry began to ſuppreſs the monaſteries in England and Ireland, archbiſhop Browne completed the deſign which he had formed of removing all ſuperſtitious relics and images out of the two cathedrals of St. Patrick's and the Holy Trinity, in Dublin, and out of the other churches in his dioceſe; and he placed, in their room, the creed, the Lord's prayer, and the ten commandments, in gold letters. In 1541, the king converted the priory of the Holy Trinity into a cathedral church, conſiſting of a dean and chapter; and the archbiſhop, three years after, founded in it three prebends, from which time it has been denominated Chriſt-Church. The order of king Edward VI. for introducing into all the churches of Ireland the Engliſh liturgy, and the Bible in the vulgar tongue, though warmly oppoſed by the popiſh party, was readily received by archbiſhop Browne; and on the Eaſter-day following, the liturgy was read at Chriſt-Church in the preſence of the mayor and bailiffs of the city, and the lord deputy St. Leger; on which occaſion the archbiſhop preached a ſermon againſt keeping the ſcriptures in the Latin tongue, and againſt the worſhip of images. This ſermon is annexed to the archbiſhop's life. When Dowdall, the primate, was deprived of this dignity, on account of his oppoſition to the royal order, it was conferred, in October 1551, on archbiſhop Browne; but upon the acceſſion of queen Mary, he alſo was deprived both of the primacy and archbiſhopric in 1554, under pretence that he was married; but in reality, becauſe he had been zealous in promoting the reformation. He died about the year 1556, leaving behind him the character of a faithful ſubject, a zealous promoter of religion, and a pattern of meekneſs, cheerfulneſs, and benevolence. Biog. Brit.

Browne, William, an Engliſh poet, was born at Taviſtock in Devonſhire, in 1590, and admitted into Exeter college, Oxford, about the beginning of the reign of king James I. Having made very conſiderable proficiency in claſſical learning and polite literature, he left the college, and removed to the Inner Temple, London, where he devoted himſelf to the muſes, and probably paid little attention to the ſtudy of the law. In 1613, he publiſhed the firſt part of his "Britannia's Paſtorals," fol.; a great part of which he ſeems to have written before he had attained his 20th year. In the following year he publiſhed "The Shepherd's Pipe, in Seven Eclogues," 8vo.; and in 1616, the ſecond part of his "Britannia's Paſtorals," which were well received, and gained him great reputation. He alſo wrote the "Inner Temple Maſque," and ſome other ſmall poems, which are included in the edition of his works publiſhed by Mr. Davies in 1772, in three ſmall volumes. In his Paſtorals there is much poetical imagery, and ſometimes beautiful deſcription, and his verſification is often very harmonious; but though he knew how to move the heart by ſtrokes of genuine nature and paſſion, his writings abound with point and conceit, and other frivolous ornaments, which indicate a vitiated taſte; with a fertile imagination and a vigorous mind, his judgment was perverted by thoſe Italian models, which it was the faſhion of his time to imitate. His deſcriptions, though pictureſque, are extravagant; his conceptions, though ſtrong, have marks of deformity; and his language never flows in a ſtrain of continued purity. He could not plan with preciſion and delicacy, and was unable to join correctneſs with ſpirit. Such is the account given of his writings by an anonymous critic. In 1624, he returned to his college; became tutor to that earl of Carnarvon, who was killed at the battle of Newbury, and who is highly extolled by Clarendon; was created M.A. in that year; and was ſtyled in the univerſity-regiſter "Vir omni humanâ literatura et bonarum artium cognitione inſtructus." He was afterwards taken into the family of the earl of Pembroke; and, as Wood ſays, "got wealth, and purchaſed an eſtate." Towards the cloſe of his life, he is ſuppoſed to have retired into his own country, and to have died there about the year 1645. Biog. Brit.

Browne, *Sir* Thomas, more known now as an antiquary, than as a doctor of phyſic, was born in the pariſh of St. Michael, in Cheapſide, the 19th of November, 1605. Being left by his father, who died when he was young, an ample fortune, he was ſent to Wincheſter ſchool, and having paſſed through the uſual exerciſes there in 1623, he was admitted a gentleman commoner in Pembroke college, Oxford. In 1627, he took his degree of bachelor, and three years after of maſter of arts. During this time, beſides applying with aſſiduity to claſſical literature, in which he made great progreſs, he had attended to the ſtudy of medicine, which he practiſed for a ſmall time at Oxford. With a view of improving himſelf in that art, he determined on viſiting the ſchools on the continent; but he went firſt to Ireland, where his mother then was with her huſband, ſir Thomas Dutton, who held a poſt in that kingdom. With him he travelled over the greateſt part of Ireland; and having collected what might be gathered there, in furtherance of his deſign, he went to France, and ſpent ſome time at Montpellier. He then viſited Padua, and thence proceeded to Leyden, where he continued, until he took his degree of doctor in medicine. This was about the year 1633. In 1634, he came to London, and ſoon rendered his name famous, by the publication of his "Religio Medici;" a work of deep reflection, and evidently the fruit of much ſtudy and attention. It was no ſooner publiſhed, we are told, than it excited the attention of the world, by the novelty of paradoxes, the dignity of ſentiment, the quick ſucceſſion of images, the multitude of abſtruſe alluſions, the ſubtlety of diſquiſition, and the ſtrength of language with which it was written. He begins with declaring himſelf a Chriſtian, though he has been claſſed among the free-thinkers. Whatever might be his inconſiſtency on ſome points, he favoured the notion of guardian angels, allowed the reality of apparitions, and of diabolical illuſions; and affirms from his own knowledge, the certainty of witchcraft. This latter opinion is ſaid to have had no ſmall influence in occaſioning the condemnation of ſome unhappy victims, the execution of whom was one of the lateſt inſtances of the kind that diſgrace the Engliſh annals. His natural diſpoſition, however, was averſe from ſeverity and intolerance; he declares himſelf to be an enemy to perſecution, and he was almoſt tempted by his benevolence, to doubt of the eternity of future puniſhments, and the abſolute condemnation of virtuous heathens. His ſentiments were thoſe of philanthropy, and he inclined to a favourable opinion of mankind in general. In his moral compoſitions, however, he ſeems to have been more influenced by vanity, than by a real deſire of improving mankind. Sir Kenelm Digby publiſhed obſervations upon the "Religio Medici," which are now generally bound up with the work. The remarks are acute and ingenious, but what ſeems moſt wonderful is, that it coſt the writer only twenty-four hours in procuring, reading, and making his annotations on the book. It was ſoon after tranſlated into Latin by Mr. Merryweather, a gentleman of Cambridge, and from his verſion it was again tranſlated into Italian, German, Dutch, and French. An edition of the Latin verſion was publiſhed at Straſburgh, with large notes by L. Nicolaus Moltfarius. The peculiarities of this book raiſed the author, as is uſual, Dr. Johnſon obſerves, many admirers, and many enemies; it was only, however, profeſſedly anſwered, by one writer, Alexander Roſs, in a work, entitled "Medicus Medicatus," which was never much noticed. In 1637, he was incorporated in the univerſity of Oxford, and then went and ſettled at Norwich, where he was much reſorted to, and attained high reputation, Anthony Wood ſays, for his ſkill in his profeſſion, which, in a few years, procured his admiſſion as honorary member of the Royal College of Phyſicians in London. In 1641, he married Mrs. Dorothy Micham, a lady of a good family in Norfolk, and of great perſonal as well as mental endowments. Theſe excellent qualities of the lady did not free him from the ſarcaſms of the wits who remembered the Dr. had expreſſed a wiſh, in his famed works, that procreation or population might go on without the cohabitation of the ſexes; which he called "the fooliſheſt thing a wiſe man did." The doctor and his lady, however, lived together in great harmony for more than forty years, and left a ſon, who was educated to medicine, and three daughters. In 1646, he publiſhed his treatiſe on vulgar errors, "Pſeudodoxia Epidemica." In this he combats, with great learning and ingenuity, numerous notions or opinions on natural and other objects, which had obtained general credit, not only among the common people, but among phyſicians and other literary perſons. The work is, of courſe, miſcellaneous, and occupies as many chapters as there are errors he wiſhed to reform; but as it is in general circulation, and has been frequently reprinted, it is unneceſſary to ſay more of it, than that it added conſiderably to the fame the author had obtained by his former work. In this work, however, he oppoſed the Copernican ſyſtem of aſtronomy, and contended for the immobility of the earth. In 1671, he was knighted by king Charles II. in his paſſage through Norwich, and with particular marks of eſteem. He had before, viz. in 1658, publiſhed "Hydriotaphia, or Diſcourſe on Urn-burial, together with the Garden of Cyrus, or the Quincunxial Lozenge, or Net-work Plantation of the Ancients, &c." In theſe he treats, Dr. Johnſon ſays, with his uſual learning, on the funeral rites of the ancient nations; exhibits their various treatment of the dead; and examines the ſubſtances found in his Norfolcian urns. There is not, perhaps, any one of his works which better exemplifies his reading or memory. It is ſcarcely to be imagined how many particulars he has amaſſed together, in a treatiſe which ſeems to have been occaſionally written; and for which, therefore, no materials could have been previouſly collected. This is the laſt work our author publiſhed; but he continued to live eſteemed for his virtues, as well as for his literary attainments, until he had completed his 77th year, when he was ſeized with an affection in his bowels, which put an end to his life at Norwich, on his birth-day, the 19th of Nov. 1682. "Dr. Browne left ſeveral tracts in his cloſet, which, Whitefoot ſays, he deſigned for the preſs." Of theſe two collections have been publiſhed, one by Dr. Tenniſon, in 1686; the other in 1732, by a nameleſs editor. "It is not on the praiſes of others, but on his own writings, that he is to depend for the eſteem of poſterity, of which he will not eaſily be deprived, while learning ſhall have any reverence among men; for there is no ſcience in which he does not diſcover ſome ſkill; and ſcarce any kind of knowledge, profane or ſacred, abſtruſe or elegant, which he does not appear to have cultivated with ſucceſs. His ſtyle is vigorous, but rugged; learned, but pedantic; deep, but obſcure; it ſtrikes, but does not pleaſe. His tropes are harſh, and his combinations uncouth. In defence, however, of his uncommon words and expreſſions, it ſhould be conſidered, that his ſentiments were uncommon, and that he was not content to expreſs, in many words, that idea for which any language could ſupply a ſingle term." Life of Sir Thomas Browne, by Dr. Samuel Johnſon. Gen. Biog.

Browne, Edward, ſon of ſir Thomas, was born at Norwich, in 1642, where he received the rudiments of his education. In 1657, when he was fifteen years of age, he was ſent to Cambridge, and there continued his ſtudies with diligence until 1665, when he took his degree of bachelor in medicine. He now went to Merton college in Oxford; and at the end of two years proceeded doctor. To perfect himſelf in natural philoſophy, he went to the continent, and travelled over great part of Bohemia, Hungary, and Friuli, countries abounding with mineral productions, which he examined with particular care. On his return, he ſettled in London, and there publiſhed, in 1673, in 4to. the obſervations he had collected during his travels. This was ſo well received, as to induce him to reviſe, correct, and, at length, in 1685, to enlarge it to two volumes in 4to. In London he became ſoon diſtinguiſhed for his ſuperior learning and abilities, and was made fellow of the Royal College of Phyſicians, and of the Royal Society, phyſician to Bartholomew's hoſpital, and firſt phyſician to king Charles II. He aſſiſted Dryden with a tranſlation of the lives of Themiſtocles and Sertorius, toward his verſion of Plutarch's lives, and is ſaid to have given ſome communications to the Royal Society, on the ſubject of chemiſtry, in which we have the teſtimony of Mr. Boyle, he was more than commonly ſkilled. But his manners were as polite as his learning was various and profound, which made king Charles II., no ill judge of the characters of men, ſay, "he was as learned as any of the college, and as well bred as any at court." He was, however, left out of the liſt of court phyſicians by James II. but was afterwards conſulted by his ſucceſſor, king William. In 1705, he was choſen preſident of the college of phyſicians, which office he continued to fill until 1708, the time of his death, which happened in the month of Auguſt in that year, at his ſeat at Northfleet, near Greenhithe, in Kent. Gen. Biog.

Browne, Simon, a learned miniſter, and writer among the Proteſtant diſſenters, was born at Shepton-Mallet, in Somerſetſhire, about the year 1680, and received his academical education at Bridgewater under the inſtruction of the Rev. Mr. Moor. Diſtinguiſhed by his talents and proficiency, he commenced the exerciſe of his miniſtry before he had attained the age of 20 years, and was ſettled for a conſiderable time with a reſpectable congregation at Portſmouth. During his reſidence in this town, he publiſhed, in 1706, his "Caveat againſt evil Company," and, in 1709, "The true Character of the real Chriſtian," in one volume 8vo. In 1716, he removed to London, and took the charge of the congregation in the Old Jewry, which was one of the moſt reſpectable and conſiderable in the kingdom. In 1720, he publiſhed a volume of "Hymns and Spiritual Songs, in Three Books," 12mo.; and, in 1722, a volume of "Sermons." In his addreſs to the congregation, prefixed to this volume, he avows it to have been his "deſign to promote pure, peaceable, and practical religion, without rage or bitterneſs againſt any, and to ſpread the ſpirit of Chriſtianity, not that of a party." He adds, that, "to raiſe the paſſions, without firſt ſetting the judgment right, is to carry the man into all the wilds and wanton freaks of enthuſiaſm."—"But, on the other hand, it will ſignify little to the advancement of real religion to ſet the head right, if we cannot alſo warm and engage the heart. For though the affections ſhould not have the ſupreme direction, they muſt be the immediate ſprings of human action." Such were the principles and views with which he conducted his miniſterial ſervices, and which rendered the congregation at the Old Jewry ſo numerous and ſo reſpectable. The publication of his ſermons was ſoon followed by "A Letter to the Rev. Mr. Thomas Reynolds," in which he reproaches thoſe diſſenters, whoſe zeal for orthodoxy made them anxious to compel their brethren, inconſiſtently with their principles as diſſenters, to make very particular and explicit declarations of their belief in the doctrine of the Trinity, and in which he alſo pointed out the unreaſonableneſs and inefficacy of requiring any ſubſcription to human articles of faith.

Mr. Browne, having continued in the exerciſe of the paſtoral office with great reputation on his own part, and very much to the ſatisfaction and improvement of his congregation for about 7 years, was viſited, in 1723, with a very complicated and ſevere affliction, occaſioned by the loſs of his wife and an only ſon, which diſtreſſed him to ſuch a degree, that he was for ſome time in a ſtate bordering upon diſtraction; but his diſorder at length ſubſided into a melancholy of a very extraordinary nature. He deſiſted from the duties of his functions, and could not be perſuaded to join in any act of worſhip, either public or private. He imagined "that almighty God, by a ſingular inſtance of divine power, had, in a gradual manner, annihilated in him the thinking ſubſtance, and utterly diveſted him of conſciouſneſs: that though he retained the human ſhape, and the faculty of ſpeaking, in a manner that appeared to others rational, he had all the while no more notion of what he ſaid than a parrot. And, very conſiſtently with this, he looked upon himſelf no longer as a moral agent, a ſubject of reward or puniſhment." In this perſuaſion, he continued, with little variation, to the end of his life. He ſeemed to be much grieved, and to think his veracity queſtioned, when he could not perſuade others to think of him as he thought of himſelf. This incredulity, on the part of others, he ſometimes repreſented as the judicial effect of the ſame divine power that had reduced him to his diſtreſſed ſtate. For ſome time he was unwilling that any prayers ſhould be made on his account, and he declined putting up any for himſelf, and refuſed even to ſay grace at table. Being once importuned to ſay grace at the table of a friend, he repeatedly excuſed himſelf; but the requeſt being repeated, and the company kept ſtanding, he manifeſted tokens of great diſtreſs, and, after ſome irreſolute geſtures and heſitation, expreſſed, with great fervour, this ejaculation: "Moſt merciful and Almighty God, let thy ſpirit, which moveth upon the face of the waters, when there was no light, deſcend upon me; that from this darkneſs there may riſe up a man to praiſe thee!" On another occaſion, when he was earneſtly ſolicited to ſay grace, he at length complied, and expreſſed himſelf in the following manner: "Lord, I am nothing, I aſk nothing, and I want nothing; but bleſs theſe good creatures to thoſe who are about to receive them!" It appears, however, that after his retirement into the country, and towards the cloſe of his life, he was leſs uninclined to join in acts of devotion, and that he was even deſirous that prayers ſhould be put up for himſelf. At the commencement of his diſorder, he felt ſo unhappy as to be frequently inclined to deſtroy himſelf; but he afterwards became more calm and compoſed, and ſeemed to experience little or no terror of mind; and he was often not only rational and ſerious, but cheerful and pleaſant in converſation, provided nothing was ſaid relating to his own caſe. It is remarkable, that, whilſt this ſtrange phrenzy continued, his faculties appeared to be in every other reſpect in their full vigour; his conceptions were clear, and his powers of reaſoning ſtrong; and he purſued his ſtudies without intermiſſion. His congregation reſpected him ſo much, that they delayed, for a conſiderable time, appointing a ſucceſſor; but when he was reduced to the neceſſity of quitting the miniſtry, and his place was ſupplied by Mr. (afterwards Dr.) Chandler, Mr. Browne retired to his native town of Shepton-Mallet. He there amuſed himſelf with tranſlating ſeveral parts of the ancient Greek and Latin poets into Engliſh verſe. He afterwards compoſed ſeveral little pieces for the uſe of children, an Engliſh grammar and ſpelling-book, an abſtract of the ſcripture hiſtory, and a collection of fables; the two laſt being in metre. He alſo amaſſed together, in a ſhort compaſs, all the themes of the Latin and Greek tongues, and compiled a dictionary to each of theſe, in order to render the acquiſition of thoſe languages more eaſy and compendious. During the two laſt years of his life, he was employed in defending the truth of Chriſtianity, againſt ſome of the attacks then made againſt it, and in recommending mutual candour to Chriſtians of different ſentiments concerning the doctrine of the Trinity. In 1732, he publiſhed, in 8vo. "A ſober and charitable Diſquiſition concerning the Importance of the Doctrine of the Trinity; particularly with regard to Worſhip, and the Doctrine of Satisfaction; endeavouring to ſhew, that thoſe in the different Schemes ſhould bear with each other in their different Sentiments; nor ſeparate Communion, and caſt one another out of Chriſtian Fellowſhip on this Account." He alſo publiſhed, in the ſame year, "A fit Rebuke to a ludicrous Infidel, in ſome Remarks on Mr. Woolſton's fifth Diſcourſe on the Miracles of our Saviour; with a Preface concerning the Proſecution of ſuch Writers by the Civil Powers;" in which he proves, with great ability, that all ſuch interpoſitions of the civil magiſtrate, to prevent attacks againſt Chriſtianity, were extremely diſhonourable to it. It was alſo in this year that he publiſhed his "Defence of the Religion of Nature, and of the Chriſtian Revelation, &c." In all theſe treatiſes, written in his retirement, where he could derive little aſſiſtance from books, or the converſation of learned friends, he diſplays very extenſive knowledge, and great powers of reaſoning. To the laſt of the above-cited performances he had prefixed a very ſingular dedication to queen Caroline, expreſſing the unhappy deluſion under which he laboured, and which his friends, at the time of the publication, prudently ſuppreſſed. A copy of it, however, was preſerved. It was publiſhed in the "Adventurer," No. 88. vol. iii. p. 155; and as it exhibits a very curious diſplay of the ſtate of his mind, we ſhall here ſubjoin it, for the gratification of thoſe who have not immediate acceſs to the other publication:

'Madam,

'Of all the extraordinary things that have been tendered to your royal hands ſince your firſt happy arrival in Britain, it may be boldly ſaid, what now beſpeaks your majeſty's acceptance is the chief.

'Not in itſelf, indeed; it is a trifle unworthy your exalted rank, and what will hardly prove an entertaining amuſement to one of your majeſty's deep penetration, exact judgment, and fine taſte.

'But on account of the author, who is the firſt being of the kind, and yet without a name.

'He was once a man; and of ſome little name; but of no worth, as his preſent unparalleled caſe makes but too manifeſt; for by the immediate hand of an avenging God, his very thinking ſubſtance has for more than ſeven years been continually waſting away, till it is wholly periſhed out of him, if it be not utterly come to nothing. None, no not the leaſt remembrance of its very ruins, remains, not the ſhadow of an idea is left, nor any ſenſe that, ſo much as one ſingle one, perfect or imperfect, whole or diminiſhed, ever did appear to a mind within him, or was perceived by it.

'Such a preſent from ſuch a thing, however worthleſs in itſelf, may not be wholly unacceptable to your majeſty, the author being ſuch as hiſtory cannot parallel: and if the fact, which is real and no fiction, nor wrong conceit, obtains credit, it muſt be recorded as the moſt memorable and indeed aſtoniſhing event in the reign of George II. that a tract compoſed by ſuch a thing was preſented to the illuſtrious Caroline; his royal conſort needs not be added; fame, if I am not miſinformed, will tell that with pleaſure to all ſucceeding times.

'He has been informed, that your majeſty's piety is as genuine and eminent, as your excellent qualities are great and conſpicuous. This can, indeed, be truly known to the great ſearcher of hearts only; he alone, who can look into them, can diſcern if they are ſincere, and the main intention correſponds with the appearance; and your majeſty cannot take it amiſs, if ſuch an author hints, that his ſecret approbation is of infinitely greater value than the commendation of men, who may be eaſily miſtaken, and are too apt to flatter their ſuperiors.

'But if he has been told the truth, ſuch a caſe as his will certainly ſtrike your majeſty with aſtoniſhment, and may raiſe that commiſeration in your royal breaſt which he has in vain endeavoured to excite in thoſe of his friends; who, by the moſt unreaſonable and ill-founded conceit in the world, have imagined, that a thinking being could for ſeven years together live a ſtranger to its own powers, exerciſes, operations, and ſtate, and to what the great God has been doing in it and to it.

'If your majeſty, in your moſt retired addreſs to the king of kings, ſhould think of ſo ſingular a caſe, you may, perhaps, make it your devout requeſt, that the reign of your beloved ſovereign and conſort may be renowned to all poſterity by the recovery of a ſoul now in the utmoſt ruin, the reſtoration of one utterly loſt at preſent amongſt men.

'And ſhould this caſe affect your royal breaſt, you will recommend it to the piety and prayers of all the truly devout, who have the honour to be known to your majeſty: many ſuch doubtleſs there are; though courts are not uſually the places where the devout reſort, or where devotion reigns. And it is not improbable, that multitudes of the pious throughout the land may take a caſe to heart, that under your majeſty's patronage comes thus recommended.

'Could ſuch a favour as this reſtoration be obtained from heaven by the prayers of your majeſty, with what a tranſport of gratitude would the recovered being throw himſelf at your majeſty's feet, and adoring the divine power and grace, profeſs himſelf,

'Madam,
'Your majeſty's moſt obliged
'and dutiful ſervant,
Simon Browne."

After his retirement into the country, the want of exerciſe, which he could not be perſuaded to uſe, brought on a complication of diſorders, and a mortification in his leg, which terminated his life at the cloſe of the year 1732, in the 52d year of his age. His learning and knowledge were extenſive. His theological ſentiments were liberal, and he was a zealous advocate for freedom of inquiry. His piety and virtue were diſtinguiſhed and exemplary; and he was animated by an ardent zeal for the intereſts of rational and practical religion. None who duly regard the talents he poſſeſſed and the public ſervices of which he was capable, can forbear lamenting the malady under which he laboured. "His abilities," ſays one of his biographers, "made him reſpected, and his virtues rendered him beloved; but ſuch was the peculiarity of his caſe, that he was at once an evidence of the dignity, and of the weakneſs of human nature." Biog. Brit.

Browne, Isaac Hawkins, an ingenious and elegant poet of the laſt century, was born, in 1706, at Burton-upon-Trent, of which pariſh his father was miniſter. Having received his grammatical education, firſt at Litchfield, and afterwards at Weſtminſter-ſchool, where he diſtinguiſhed himſelf by his rapid proficiency, he was admitted, at the age of 16 years, into Trinity college, Cambridge; here he applied with ſingular aſſiduity, principally to claſſical literature, but without neglecting the appropriate ſtudies of the place, or the various branches of mathematics, and the principles of the Newtonian philoſophy; and ſuch was the reputation which he acquired, that he was one of the firſt ſcholars elected upon the foundation, eſtabliſhed in 1724, by king George I. for the ſtudy of modern hiſtory and languages, with a view of qualifying young men for employment at court and in foreign embaſſies. To this circumſtance he alludes in his poem on the death of the founder, which was the firſt of his poetical productions, and much approved. About the year 1727, he ſettled at Lincoln's Inn, and proſecuted the ſtudy of the law with a view to the profeſſion of a barriſter, for which he was originally deſigned; but though he acquired a conſiderable degree of knowledge, he never arrived at any great eminence in the practice of the law, and relinquiſhed it for a long time before his death, that he might have the greater leiſure for gratifying his inclination in literary purſuits. Poſſeſſed of a fortune, which was adequate to his deſires, and which, by preſerving the happy mean between extravagance and avarice, he neither diminiſhed nor increaſed, he was the leſs anxious about the emoluments of his profeſſion. Soon after his ſettlement at Lincoln's Inn, he addreſſed to his friend Mr. Highmore, the painter, a poem on "Deſign and Beauty," in which he adopted the elegant ideas of the Platonic philoſophy. Among other pieces, compoſed by him, the moſt pleaſing and popular was his "Pipe of Tobacco," conſiſting of an imitation of the ſtyles of ſix poetical writers, then living, viz. Cibber, Ambroſe, Philips, Thomſon, Young, Pope, and Swift. In this collection, much admired for the ſtrain of humour and ſpirit of diſcrimination with which it was written, the imitation of A. Philips was the production of his friend Dr. Hoadly, chancellor of the dioceſe of Wincheſter.

In 1744, Mr. Browne married a lady, whoſe amiable temper contributed very much to his domeſtic felicity; and he was choſen twice, viz. in this year, and again in 1748, to ſerve in parliament for the borough of Wenlock, in Shropſhire. For this appoinment he was indebted to the intereſt of William Foreſter, eſq who recommended him to the electors from no other motive than the opinion he entertained of his abilities, and the confidence he had in his integrity and principles. As he had obtained his ſeat without oppoſition or expence, and without incurring obligation to any political party, he was an independent member; and though he ſupported the adminiſtration of Mr. Pelham, he never received any favour, nor deſired any employment. The love of his country, and an ardent zeal for its conſtitution and liberties, formed a diſtinguiſhing part of his character. Although he poſſeſſed an uncommon degree of eloquence in private converſation, he was deterred, by a peculiar kind of delicacy and nervous timidity, from ever appearing as a parliamentary ſpeaker. In 1754, he publiſhed his principal work, which was his Latin poem "De Animi Immortalitate," in 2 books, and which unites the philoſophical learning and elegance of Cicero, with the numbers, and much of the poetry of Lucretius and Virgil. This poem was very much admired by the beſt judges at the time of its publication, and its popularity was ſo great, that ſeveral Engliſh tranſlations of it ſoon appeared. The beſt of theſe is that of Mr. Soame Jenyns, in his "Miſcellanies." It was the author's intention to have added a third book, propoſing to carry natural religion as far as it would go, and in ſo doing, to lay the true foundation of Chriſtianity, of which he was a firm believer: but of this book he only left an imperfect fragment. Having paſſed through a life diſtinguiſhed by private virtues, and graced by a variety of accompliſhments, M. Browne died in 1760, in the 55th year of his age. His only ſon, Mr. Hawkins Browne, to whoſe education he had paid particular attention, and in which he had ſucceeded to his wiſhes, publiſhed an elegant edition of his poems, in large octavo in 1768. Several of them are alſo printed in Dodſley's Collection. Biog. Brit.

Brown *Bay*, in the *Manege*, is underſtood of horſes of a very dark cheſnut colour.

Brown's *Bay*, in *Geography*, lies on the ſouth ſide of Nonſuch harbour, near the eaſt end of the iſland of Antigua in the Weſt Indies.

Brown's *Point*, the north-weſt point of the peninſula called *Iſland Mages*, in the county of Antrim, Ireland, at the entrance into Loch-Larne. N. lat. 54° 51′. W. long. 5° 41′. Huddart.—Alſo, a cape at the ſouthern extremity of the iſland of Tobago, in the Weſt Indies. N. lat. 11° 10′. W. long. 60° 40′.

Brown's *Sound*, lies on the north-weſt coaſt of North America. N. lat. 55° 18′. W. long. 132° 20′. The lands on the eaſt ſide of this ſound are tolerably level; but on the weſt are mountains, which riſe above the clouds, and exhibit in winter a dreary aſpect. The land abounds with various ſorts of pines; the animals in its vicinity are deer, wolves, ſea-otters, and ſeals; the fiſh are ſalmon, holibut, and a ſpecies of cod, &c. in ſummer, ducks, brants, ſhags, &c. are plentiful.

BROWNÆA, in *Botany* (named from Dr. Patrick Browne, author of the hiſtory of Jamaica.) Lin. gen. 833. Reich. 898. Schreb. 1115. Juſſ. 366. Jacq. Amer. 366. Willd. 1272. Lamarck. Boſc. Claſs, *monadelphia endecandria* (*decandria*, Schr.). Nat. Ord. *Lomentaceæ—Leguminoſæ*. Juſſ. Nat. Char. *Calyx* double; outer one-leaved, conical, with two unequal ſegments; inner longer, one-leaved, funnel-ſhaped, with five diviſions. *Cor.* petals five; claws long, inſerted within the tube of the inner calyx; borders ovate, obtuſe. *Stam* filaments ten or eleven, awl-ſhaped, alternately ſhorter, attached to the tube of the inner calyx, and united near the bottom; anthers oblong. *Piſt.* germ oblong, pointed, pedicelled, adhering to the tube of the inner calyx; ſtyle awl-ſhaped; ſtigma blunt. *Pericarp,* legume oblong, compreſſed, bilocular, narrowed about the partition; partition membranaceous. *Seeds* ſolitary, ovate, compreſſed, rather rugged, involved in fungous fibres.

Eſſ. Char. *Calyx* double, outer bifid, inner quinquefid. *Cor.* five-petalled.

Obſ. Linnæus, Jacquin, &c. have conſidered the calyx as ſingle, and the corolla double; but from a careful conſideration of Lamarck's figure of the *coccinea*, we have been induced to adopt the ideas of Juſſieu, and the other French botaniſts.

Sp. 1. B. *coccinea*. Linn. (Jac. Amer. Pl. 121. Lamarck Pl. 575. N° 1.) "Stamens the length of the corolla; peduncles ſomewhat aggregate; branches ſmooth." Willd. A ſhrub from eight to ten feet high, branched. *Leaves* abruptly winged; leaflets in two or three pairs, ovate-lanceolate, ſharply pointed, very entire, ſmooth, on ſhorteſt petioles. *Flowers* lateral, large, ſcarlet, pendent, from ſix to ten together, on very ſhort nearly united peduncles. *Stamens* ten. A native of rocky woods, in South America. 2. B. *grandiceps* (Jacq. Collect. 3. Pl. 22. La Marck Illuſt. Pl. 575. N° 2?). "Stamens the length of the corolla; flowers capitate-ſpiked; branches downy." Willd. *Folioles* net-veined. *Flowers* ſcarlet, in a ſpike five inches long and four broad. A native of mountainous woods in South America. 3. B. *Roſa de Monte* (Bergius in Philoſ. Tranſ. vol. 63. Pl. 8. p. 174. La Marck Illuſt. Pl. 575. N° 3.) "Stamens twice as long as the corolla; flowers in heads." Willd. A tree. *Branches* ſwelling into ſcattered knobs. *Branchlets*, or common petioles, generally alternate, round, ſmooth, rugged at the baſe, ſpreading. *Leaves* leathery, about ſeven inches long, ovate-oblong, very entire, narrowing

ing abruptly towards the end, ſmooth on both ſides, with ſhort petioles; the lower ones gradually diminiſhing; the loweſt ovate, a little heart-ſhaped at the baſe. *Flowers* collected into a head or faſcicle, ſurrounded by a leafy involucre; leaflets or bractes ovate, rather ſharp-pointed, ſomewhat membranaceous, concave, ſmooth, about two inches long, red, including one and ſometimes two or three flowers, deciduous; the outer ones rounded, the inner ſmaller, and gradually becoming linear. *Filaments* conſtantly eleven. Gathered at Porto Bello in America, by a Mr. Pike, and ſent to Bergius.

It does not appear that either of the three ſpecies has been cultivated in Europe.

Brownæa *pauciflora*. Willd. See Palovea.

BROWNFIELD, in *Geography*, a ſmall ſettlement in York county, and diſtrict of Maine, in North America; which, together with Suncook, contains 250 inhabitants; ſo called in 1791 by captain Gray in honour of Sam. Brown, eſq. of Boſton.

BROWNISTS, in *Eccleſiaſtical Hiſtory*, a religious ſect, which ſprung out of the Puritans, towards the cloſe of the 16th century, and derived their appellation from *Robert* Brown.

The revolt of Brown, already mentioned under his article, was far from being followed with the diſſolution of the ſect. On the contrary it daily increaſed; inſomuch that ſir Walter Raleigh, in a ſpeech delivered in the houſe of commons, in 1592, computes no leſs than twenty thouſand followers of it.

The occaſion of the ſeparation of the Browniſts was not any fault they found with the faith, but only with the diſcipline and form of government of the other churches in England. They equally charged corruption on the epiſcopal form, and on that of the preſbyterians, by conſiſtories, claſſes, and ſynods; nor would they join with any other reformed church, becauſe they were not aſſured of the ſanctity and regeneration of the members that compoſed it, and on account of the toleration of ſinners, with whom they maintained it an impiety to communicate. They condemned the ſolemn celebration of marriages in the church, and the uſe of the ring in marriage, as making it a ſacramental ſign, which encouraged the popiſh hereſy, that matrimony is a ſacrament; and maintained, that matrimony being a political contract, the confirmation thereof ought to come from the civil magiſtrate. They would not allow any children to be baptized, whoſe parents were not members of the church, or of ſuch as did not take ſufficient care of the education of thoſe baptized before. They rejected all forms of prayer; and held, that the Lord's prayer was not to be recited as a prayer; being only given for a rule, or model, whereon all our prayers are to be formed. They held, that the evil life of the miniſtry deſtroyed the efficacy of the ſacraments; and they objected againſt bells in churches, becauſe, as they pretended, they were conſecrated to the ſervice of idolatry. They urged alſo many other objections againſt the forms and ceremonies of the eſtabliſhed church, which are recapitulated in a ſmall 4to. pamphlet, publiſhed at Middleburgh in 1599, on occaſion of a controverſy between Francis Johnſon, a Browniſt, and H. Jacob, about ſome of the tenets of the Browniſts, and entitled "A Defence of the Churches and Miniſtery of England, againſt the Reaſons and Objections of Maſter Francis Johnſon, and others of the Separation, commonly called Browniſts; in two treatiſes, publiſhed eſpecially for the benefit of thoſe in theſe parts of the Low Countries."

The form of church government which they eſtabliſhed was *democratical.* When a church was to be gathered, ſuch as deſired to be members of it made a confeſſion of it; and ſigned a covenant, by which they obliged themſelves to walk together in the order of the goſpel. The whole power of admitting and excluding members, with the deciſion of all controverſies, was lodged in the brotherhood. Their church-officers were choſen from among themſelves, for preaching the word, and taking care of the poor, and ſeparated to their ſeveral offices by faſting, prayer, and impoſition of hands of ſome of the brethren. But they did not allow the prieſthood to be any diſtinct order, or to give any indelible character. As the vote of the brotherhood made a man a miniſter, and gave him authority to preach the word, and adminiſter the ſacraments among them; ſo the ſame power could diſcharge him from his office, and reduce him to a mere layman again. And as they maintained the bounds of a church to be no greater than what might accommodate thoſe who could meet together in one place, and join in one communion; ſo the power of theſe officers was preſcribed within the ſame limits. The miniſter or paſtor of one church could not adminiſter the Lord's ſupper to another, nor baptize the children of any but thoſe of his own ſociety. Any lay-brother was allowed the liberty of giving a word of exhortation to the people; and it was uſual for ſome of them, after ſermon, to aſk queſtions, and reaſon upon the doctrines that had been preached. In a word, every church on the "Browniſts" model, is a body corporate, having full power to do every thing which the good of the ſociety requires, without being accountable to any claſſis, ſynod, convocation, or other juriſdiction whatever. It has been ſaid, particularly by Dr Fulke, that if we compare the principles of the Browniſts with thoſe of the ancient Donatiſts (which ſee), we ſhall them find to be the ſame; and that Brown derived them from the Puritans and Separatists. Brown, it is ſaid, was preceded by Bolton, and followed by Barrow, a man of ingenuity and learning, but, like many others of his ſect, of a warm ſpirit, who was condemned and executed, at the inſtigation of the biſhops, very much to the diſgrace of the reign of queen Elizabeth. Indeed the laws were executed with great ſeverity on the Browniſts; their books were prohibited by queen Elizabeth, and their perſons impriſoned, and many of them were hanged. The eccleſiaſtical commiſſion, and the ſtar-chamber, in fine, diſtreſſed them to ſuch a degree, that they reſolved to quit their country. Accordingly, many families retired, and ſettled at Amſterdam, where they formed a church, and choſe Mr. Johnſon for their paſtor; and after him, Mr. Ainſworth, author of the learned commentary on the Pentateuch. This church, notwithſtanding its unhappy inteſtine diviſions, flouriſhed under a ſucceſſion of paſtors for above 100 years. Other Browniſts erected churches after their own model, at Arnheim, Middleburgh, Leyden, and other places. See Ainsworth. The next perſon that appeared as an active ſupporter of Browniſm was Robinſon, who ſomewhat ſoftened the dogmas of Brown, and endeavoured to unite the diſcordant members of his ſect. For ſome time the followers of Robinſon ſteered a middle courſe between the Browniſts and the church of England, calling themſelves "Semi-Separatiſts;" but at length they proceeded farther than the Browniſts themſelves. The Browniſts, though ranged under different leaders, generally retained the name of their founder for ſeveral years after his death; for in the civil war in 1640, &c. we read of a mob of 2000 Browniſts, who entered St. Paul's church in London, when the high-commiſſion court was ſitting, and making a great tumult, cried out "No Biſhops," "No High Commiſſion," &c.: and in 1642, king Charles, in a ſpeech made at the head of his forces on their march towards Shrewſbury, mentions the Browniſts, and by a ſtrange kind of junction, connects them and the Anabaptiſts with *Atheiſts*. In the following year he propoſes to the parliament to frame a good bill for the better preſervation of the book of common prayer from the ſcorn and violence of Browniſts, Anabaptiſts, and other ſectaries. At length, however, the appellation of Browniſts was changed into that of Independents, a denomination aſſumed by thoſe, who adopted many of their tenets, and conformed to their diſcipline. At the preſent enlightened period, when the principles of toleration are underſtood and inculcated, and a liberal ſpirit pervades all ranks of the community, the ſeverity with which the Browniſts were treated, will find no advocates; nor will any one attempt to juſtify or palliate their errors and miſconduct. Their rigid and narrow ſentiments in point of diſcipline; their denying the church of England to be a true church; their maintaining that her government was ſo wholly Popiſh and Antichriſtian, as to render all her ordinances and ſacraments invalid; and their not only renouncing communion with her, but with all other reformed churches, excepting ſuch as ſhould be of their own model, are ſufficient proofs that they did not come behind their perſecutors in bigotry. Nor is it unlikely, but that if they had riſen to power, they would have exerciſed it in a very unjuſtifiable manner. Neal's Hiſtory of the Puritans, vol. i. p. 231—260—363—386—436. 4to. Neal's Hiſt. of New Eng. tom. i. cap. 2. p. 58. Robinſon, Apologia juſta, &c. Browniſtarum et Barrowiſtarum, 12mo. 1619. Biog. Brit. Art. *Robert Brown*. See Independents.

BROWNSBURG, in *Geography*, a town in Rockbridge county, Virginia, containing 20 or 30 houſes; about 15 miles N.E. from Lexington.

BROWNSEA Island, an iſland within the harbour of Poole, in England, containing about 800 acres of land, where the Danes landed in 1015.

BROWNSTOWN Head, a cape on the ſouth coaſt of Ireland, which is the eaſtern point of Tramore bay, on the narrow channel of Rineſhark. N. lat. 52° 7′. W. long. 7° 7′.

BROWNSVILLE, or Red Stone Old Fort, a flouriſhing poſt-town of America, in the county of Fayette, and ſtate of Pennſylvania, on the ſouth-eaſtern bank of Monongahela river, between Dunlap and Red-ſtone creeks, and next to Pittſburg, the moſt conſiderable town in the weſtern part of the ſtate. The town is regularly laid out, and contains about 100 houſes, an Epiſcopalian and Roman catholic church, a brewery, and a diſtillery. It is connected with Bridge-port, a ſmall village on the oppoſite ſide of Dunlap creek, by a bridge 260 feet long. Within a few miles of the town are 4 Friends' meeting-houſes, and 24 griſt, ſaw, oil, and fulling mills. The trade and emigration to Kentucky afford a lucrative employment to boat-builders; 100 boats of 20 tons each being built here annually. Byrd's fort formerly ſtood here, on the ſouth ſide of the mouth of Red-Stone creek, in N. lat. 39° 58′. W. long. 81° 12′ 30″; 37 miles S. from Pittſburg; 13 S. by E. from Waſhington; and 341 W. from Philadelphia.—Alſo, a poſt-town in Oneida county, New York, ſeated on Black River, near its mouth in lake Ontario; 590 miles from Waſhington.

BROWS, or Eye-brows, are two hairy arches above the orbits of the eyes, bunching out by means of ſome fat under the ſkin in this place.

That end next the noſe is called the head, *caput*, the other the tail, *cauda*, of the eye-brow.

The uſe of the eye-brow is partly to break the rays of light deſcending from above, that they may not dart too ſtrongly into the eyes; and partly to be a ſcreen to the eyes from ſweat, duſt, or other matters deſcending from the forehead.

BROWSE, the tops of the branches of trees, whereon beaſts feed. This is ſometimes alſo called brouce, and brutle; probably from the French *brout*, which ſignifies the ſame.

Browse more properly denotes the food which deer find in young copſes, continually ſpringing anew.

Browse, *beaſts of*, or Browsing-*beaſts*, a denomination including all of the fallow kind, as the deer, roe-buck, rupicapra, &c.

Browse-*wood*, the ſame with ſpray or bruſhwood.

BROWTING, *Brouter*, among the *French Gardeners*, ſignifies breaking off the tips of the ſlender branches of trees, when too long in proportion to their ſtrength.

BROYE, in *Geography*, a river of Swiſſerland, which riſes in the canton of Friburg, traverſes lake Morat, and iſſuing from thence, and winding through a marſhy plain, diſcharges itſelf into the lake of Neufchatel.

BROYLE, a harbour, cape, and ſettlement on the eaſt ſide of the iſland of Newfoundland; 15 miles N. E. from the ſettlement of Aquafort, and 30 S. W. from St. John, the capital. N. lat. 47° 7′. W. long. 52° 36′.

BROZZO, a town of Italy, in the principality of Piedmont; 25 miles N. of Turin.

BRSESKIE, or Brsestz, or Brzesk. See Brzesk.

BRSEST, a town of Poland, and capital of a palatinate of that name. in the province of Cajavia; 80 miles W.N.W. of Warſaw. It is ſituated in a marſhy plain, and ſurrounded with a wall, rampart, and moat. N. lat. 52° 31′. E. long. 19° 35′.

BRUA, a river of Iceland, flowing from the ſouth to the north.

BRUANT, in *Ornithology*. See Emberiza Citrinella.

Bruant *de l'Iſle de Bourbon*. See Emberiza Borbonica

BRUARIA Turbaria. See Turbary.

BRUCÆUS, Henry, in *Biography*, ſon of Gerard, one of the magiſtrates of Aloſt, in Flanders, was born in that city in the year 1531. Having paſſed through the uſual ſchool-education, in which he diſtinguiſhed himſelf, he was ſent to Rome, where he taught the mathematics for ſome years; then turning his mind to the ſtudy of medicine, he went to Boulogne, and having completed his ſtudies, and taken his degree of doctor, he travelled, for his further improvement, over a great part of France. At Paris, he was introduced to the acquaintance of Adrian Turneby and Peter Ramus. Returning to Aloſt, he was made phyſician and principal magiſtrate of the city. As he had become a convert to Lutheraniſm, he readily accepted the invitation of John Albert, duke of Mecklenburgh, to ſettle at Roſtock, where he might with ſafety profeſs his religion. He was here appointed profeſſor in mathematics, and ſoon became popular alſo as a phyſician. After reſiding here 25 years, he was ſeized with apoplexy, of which he died, December 31ſt, 1593. His works are, "Propoſitiones de Morbo Gallico," 4to. 1569. He recommends beginning the cure with the decoction of guiacum; that not ſucceeding, to have recourſe to mercurial inunctions. "De Scorbuto Propoſitiones, de quibus publicè diſputandum eſt," Roſtoch. 1589, and again 1591, 8vo. They are printed with Eugalenus, "Liber Obſervationum de Scorbuto," Lipſiæ, 1614, &c. He attributes the origin of the diſeaſe to feeding on dried and ſalted meat, and to living in a cold and damp atmoſphere. "Epiſtolæ de variis Rebus et Argumentis medicis, cum Smetii Miſcellaneis," Francof. 8vo. 1618. Haller. Bib. Med. Eloy. Dict. Hiſt.

BRUCCA, in *Geography*, a town of Italy, in the kingdom of Naples, and Principatro Citra; 13 miles W. of Policaſtro.

BRUCE, James, in *Biography*, was among the moſt celebrated of our modern travellers; and it appears at preſent, as if the general credit of his narrative would ſurvive thoſe prejudices, under which it has long laboured from the ſuppoſed improbability of certain facts altogether repugnant to European habits and opinions.

He was born at Kinnaird houſe, near Falkirk, in Scotland, in the year 1730. His deſcent was ancient and honourable; on the female ſide, to his own inexpreſſible gratification, connecting itſelf even with royalty. He was educated at Harrow, where his proficiency is ſaid to have been highly creditable to his talents. He was afterwards removed to the univerſity of Edinburgh, where he became a law ſtudent. Circumſtances, not neceſſary to the elucidation of his public character, occaſioned him to alter his views, and enter into partnerſhip with a wine-merchant in London, whoſe daughter he married. His wife died in leſs than a twelvemonth, when he went abroad, and did not return, till recalled by the death of his father. The eſtate of Kinnaird devolved to him, and he now began to entertain thoughts of appearing in public life. The firſt overtures of political employment ended in diſappointment to the adventurer; but lord Halifax procured him the conſulſhip at Algiers; a ſituation which he hoped would facilitate the project he already entertained, of penetrating the interior of Africa. He went to Algiers in 1763, where he ſtudied the oriental languages with much diligence. He likewiſe prepared himſelf for his great expedition by what may comparatively be conſidered as *home* travels, of which he never publiſhed any account, through Aſia Minor, the iſlands of Rhodes and Cyprus, and other contiguous countries. Some of his drawings on this expedition are in the king's library at Kew. The oſtentatious traveller has characterized this preſent as "the moſt magnificent ever made in that line by a ſubject to his ſovereign." He ſeems, indeed, to have had very juſt ideas of his ſovereign's dignity, as well as very high ones of his own; for, when the Bey of Cairo deſired to ſee him, and, after a long converſation, ordered him a purſe of ſequins, covered with fruit and flowers, Mr. Bruce accepted of one orange only, but poſitively refuſed the money. The bey requeſted to know the reaſon. "I am," ſaid Mr. Bruce, "an Engliſhman, and the ſervant of the greateſt king in Europe; it is not the cuſtom of my country to receive pecuniary gratuities from foreign princes without the approbation of our ſovereign." The bey being himſelf a ſovereign, was far from being diſpleaſed with the elevated ſentiment of the excuſe.

It was in June, 1768, that he commenced his great journey to the ſources of the Nile. He ſailed to Alexandria, and thence proceeded to Cairo, which he left in December of the ſame year, embarking on the Nile, and navigating as far as Syene. He paſſed through Arabia Deſerta and Arabia Felix, making various excurſions into the latter country. His embarkation on the Red ſea took place in 1769, and in September he arrived at a ſmall iſland on the frontiers of Abyſſinia. In November he gained an entrance into the kingdom, and arrived at Gondar, the capital, in 1770. The limits of this article will not allow us to enter on his adventures, multifarious and oftentimes extraordinary as they were. For a topographical and hiſtorical account of Abyſſinia, we muſt refer to that head in the preſent work. In November, 1770, he arrived at the ſources of the Nile. A conſiderable degree of ſuſpicion has been thrown on his whole narration by the triumph with which he congratulates himſelf on having made a diſcovery that had eluded all prior reſearch, when it is now generally underſtood that the Portugueſe Jeſuits had been at thoſe very fountains before him. If he was acquainted with that fact, his vanity in that inſtance certainly triumphed over his veracity; but it does not ſeem neceſſarily to follow that the whole muſt be treated as a romance. After all, though the intereſt of every journey ſhould be pointed by ſome determinate object, the reader will probably be much more engaged by the detail of circumſtances, and the delineation of manners and cuſtoms, than in a dry controverſy, whether or not the traveller did really diſcover the ſources of the Nile. In this point of view, travelling may be compared with ſporting; the exerciſe is of much more value than the game.

On his return to Gondar, he found Abyſſinia in a ſtate of *civil* war. He engaged on the part of the reigning prince, whoſe favour was attended with the inconvenience of a poſitive refuſal to part with him. The plea of ill health, however, procured his releaſe, and he was permitted to ſet out in the beginning of 1772. The diſtreſs to which he was reduced in this journey was extreme. His camels all periſhed; and he was obliged to abandon his drawings, papers, and inſtruments, which, however, he afterwards retrieved. He arrived at Cairo with much difficulty, and the loſs of nearly all his retinue. He paſſed ſome time with Buffon in France, and returned to England in 1773.

He retired to Kinnaird for the recovery of his health, and for a long time neglected the gratificatson of public curioſity. His time was occupied by the circumſtances attending a ſecond marriage, the improvement of the waſte lands on his paternal eſtate, and the formation of a muſeum, enriched with Arabic and Abyſſinian manuſcripts, and various curioſities both natural and artificial. His work appeared in 1790, in 5 volumes 4to. It was eagerly read; but an air of vanity and arrogance pervading the ſtyle, ſeems to have inſpired the public with a diſpoſition to ſevere criticiſm and incredulity, which the confirmation of many facts by ſubſequent travellers has already in ſome meaſure checked. Mr. Bruce died in April, 1794, in conſequence of a fall in conducting ſome company down ſtairs, which at the time did not threaten ſuch fatal conſequences.

Mr. Bruce's figure was above the common ſize; his limbs athletic, but well proportioned; his complexion ſanguine: his countenance manly and good tempered; and his manners eaſy and polite. The whole outward man was ſuch as to announce a character well calculated to contend with the many difficulties and trying occaſions, which ſo extraordinary a journey could not but have thrown in his way. His internal characters, the features of his underſtanding and diſpoſition, ſeem in a great meaſure to have correſponded with theſe outward lineaments. As a country gentleman, though not without a tincture of haughtineſs, he exhibited the elegance of a man of faſhion, and the hoſpitality of a Briton.

Bruce's *Iſland*, in *Geography*, an iſland in the Red ſea, on the coaſt of Abyſſinia. N. lat. 23° 42′. E. long. 35° 50′. The ſouth of it is high and rocky, and the north low and terminating in a ſloping bank. Bruce gave it his own name.

Bruce *Hill*, a conſiderable mountain in the ſouth-weſtern part of the county of Cavan, in Ireland, from which the river Erne takes its riſe; 11 miles S.S.W. of Cavan.

BRUCEA, in *Botany*, (in honour of James Bruce, who brought the ſeeds into England from Abyſſinia). Schreb. 1508. Juſſ. 373. La Marck. Boſc. Claſs, *diœcia tetrandria*. Nat. Ord. *Terebintaceæ*. Juſſ. Gen. Char. 1. Barren flowers. *Cal.* perianth four-cleft, flat, villous; ſegments lanceolate, acute, ſpreading. *Cor.* petals four, lanceolate, acute, ciliate, ſpreading, ſcarcely larger than the calyx. *Nect.* placed on the receptacle, flat, four-lobed; the lobes obſoletely emarginate, oppoſite to the petals. *Stam.* filaments four, upright, ſhort, oppoſite to the ſegments of the calyx, inſerted on the receptacle between the lobes of the nectary. *Anthers* roundiſh. 2. Fertile flowers. *Cal.* and *Cor.* as in the former. *Nect.* the inner margin of the receptacle thickened, four-lobed; lobes emarginate.

Stam. filaments four, inſerted into the receptacle on the outſide of the diviſions of the nectary, thread-ſhaped, thicker towards the ſummit, rather ſharp, a little ſhorter than the petals; anthers none. *Piſt.* germs four, ſuperior, ovate, compreſſed on the inner ſide; ſtyles awl-ſhaped, reflexed, incumbent on the germens; ſtigmas ſharp. *Pericarp* unknown (Schreb.); capſules four (L'Heretier.) *Seeds* ſingle.

Eſſen. Char. *Cal.* four-cleft. *Cor.* four-petalled. *Peric.* four, one-ſeeded.

Species. B. *ferruginea*, L'Heretier; *antidyſenterica*, Bruce. (Bruce, V. 69. L'Heretier, Pl. 10. La Marck, Pl. 810.) A ſhrub of the middling ſize. *Stem* upright. *Branches* few, alternate, ſpreading, ſtraight, leafy at the ſummit, with broad ſcars below left by the fallen leaves. *Leaves* crowded, crowning the extremity of the branch; lower ones pendent, a foot long, unequally pinnated, on round, tomentoſe, rufous petioles. *Leaflets* eleven or thirteen, on ſhort petioles, oblong-ovate, entire, acuminate, veined, villous. *Spikes* of flowers axillary, linear, tomentoſe, nearly as long as the leaves. *Flowers* on the common peduncle whorled in ſhort ſpikelets or bunches, of an herbaceous colour tinged with red or ruſſet.

The male plant began to flower in the ſtove of the Paris botanic garden, in May and June, 1780 or 1781, when it was between two and three feet high. The female plant has flowered in the royal garden at Kew, where it was introduced in 1775. The root is uſed in Abyſſinia as a ſpecific in the dyſentery. It is a plain, ſimple bitter, without any reſinous or aromatic taſte.

Obſ. The figure in Bruce's Travels is monœcious.

BRUCH, or **Broich**, in *Geography*, a ſigniory of Germany, in the circle of Weſtphalia, and duchy of Berg, about 4 leagues in circuit, deriving its name from a caſtle, 4 miles E. of Duiſburg.

Bruch, a town of France, in the department of the Lot and Garonne, and diſtrict of Nerac; 5 miles N.N.E. of Nerac.

BRUCHHAUSEN, a town of Germany, in the circle of Weſtphalia, and county of Hoya; 5 miles W. of Hoya.

BRUCHIUM, in *Ancient Geography*. See Alexandria.

BRUCHSAL, in *Geography*, a pretty ſmall town of Germany, in the circle of the Upper Rhine, and biſhopric of Spire, ſeated on the Salza; where the biſhop has a handſome palace, and an arſenal; 11 miles S.E. of Spire, and 5 miles S.E. of Philipſburg. In its vicinity is a very large ſalt-work; and the ſurrounding country has many ſpacious foreſts, which, however, are interſected by ſeveral well cultivated vales. Theſe woods, the timber of which is carried to Holland by the Rhine, conſtitute the principal revenue of the courts of Spire and Carlſrugh.

BRUCHUS, in *Entomology*, a genus of Coleopterous inſects, with filiform antennæ, equal filiform feelers, and acuminated lip. Gmel. The ſpecies of this genus are piſi, umbellatarum, robiniæ, gibboſus, ſcabroſus, clathratus, cacao, undatus, theobromatis, marginalis, canalis, bipunctatus, varius, gleditſchiæ, ſpinoſus, bactris, ruſipes, granarius, ciſti, abdominalis, ſeminarius, maculatus, mimoſæ, ſerraticornis, pectinicornis.—B. abdominalis is a native of India. It is black: abdomen cinereous, and without ſpots; anterior legs teſtaceous. Fabricius.

BRUCIOLI, **Antony**, in *Biography*, an Italian writer, was born at Florence about the cloſe of the 15th century; and having engaged in the conſpiracy againſt cardinal Julio de Medici, he was obliged to ſeek refuge in France, whence he returned on the expulſion of the Medici family in 1527; but being ſuſpected of hereſy, on account of the freedom with which he ſpoke of monks and prieſts, he left Florence in 1529, and repaired to Venice, where, in 1532, he publiſhed his Italian verſion of the Bible, which was dedicated to Francis I., king of France. This verſion was accompanied with an ample commentary in 7 volumes folio; containing ſome ſtrictures, which excited a ſuſpicion, that the author had imbibed ſome of the principles of the reformers. Although he pretended that he had tranſlated directly from the originals, father Simon demonſtrated that he had little knowledge of the Hebrew, and that he had generally uſed the Latin verſion of Pagninus. His work was condemned by the Catholics, but approved and encouraged by the Reformers; ſeveral editions of it were printed, the laſt of which is that of Venice in 1546—48, 3 vols. folio. Brucioli lived at Venice, without moleſtation; and employed himſelf in a variety of literary works. Beſides Italian tranſlations of Pliny's natural hiſtory, and of ſeveral pieces of Ariſtotle and Cicero, and editions, with notes, of Petrarch and Boccacio, he publiſhed a folio volume of "Dialognes." Aretine writing to him in 1542, ſays, "Are you not ſatisfied with having compoſed more volumes than you are years old; and with having ſpread your name through the whole world?" He was ſtill living in 1554. Nouv. Dict. Hiſt. Gen. Biog.

BRUCK, in *Geography*, a town of Germany, in the circle of Franconia, and principality of Culmbach, ſeated on the Rednitz.

Bruck, or **Brugg**, a town of Germany, in the archduchy of Auſtria, ſituate on the river Leyta. In the environs of this town aſparagus grows ſpontaneouſly without culture. It is diſtant 25 miles E. from Baden, and 20 E.S.E. from Vienna.

Bruck, a town of Germany, in the circle of Upper Saxony, and electorate of Saxony; 10 miles S.W. of Potzdam.

Bruck, or **Pruck**, a town of Germany, in the circle of Bavaria and Upper Palatinate; 18 miles N.N.E. of Ratiſbon. See Pruck.

BRUCKENAU, a town of Germany, in the circle of the Upper Rhine, and biſhopric of Fulda; 14 miles S. of Fulda.

BRUCKER, **John-James**, in *Biography*, a learned Lutheran clergyman, was born Jan. 22, 1696, at Augſburg, and educated at Jena, where, in 1718, he took his degree of maſter of arts. In 1720 he returned to the place of his nativity; in 1724 he became rector at Kaſbeueren; and in 1731, he was choſen a member of the Academy of Sciences at Berlin. At Augſburg he was afterwards paſtor of St. Ulric's church, and ſenior miniſter; and died there in 1770. Among his works are the following, viz. "Tentamen Introductionis in Hiſtoriam Doctrinæ de Ideis," Jena, 1719, 4to.; "Meditationes Philoſophicæ de falſa virtute exemplo Alexandri magni illuſtrata," Ibid. 1720, 4to.; "Hiſtoria Philoſophica Doctrinæ de Ideis," Augſb. 1723, 8vo.; "De Vita et Scriptis Cl. Etringeri," Ibid. 1724, 8vo; "Otium Vindelicum, ſive Meletematum Hiſtorico-philoſophicorum Triga," Ibid. 1721, 8vo; "Hiſtoria Vitæ Adolphorum Occonum," Lipſ 1734, 4to.; "Diſſertatio Epiſtol. de Vita Hier. Wolfii," Ibid. 1739, 4to.; "De Hoeſchelii Meritis in Rem Literariam," Ibid. 1739, 4to.; "Inſtitutiones Hiſtoriæ Philoſophicæ," Ibid. 1727, 8vo. and 1756, 4to. But the moſt important work, to which he owes his chief reputation, in his "Hiſtoria Critica Philoſophiæ," publiſhed at Leipſic between the years 1742 and 1744, in four large volumes 4to. and re-printed at the ſame place in 1767, with large improvements and additions, in 6 vols. 4to. To Dr. Enfield the Engliſh reader is indebted for an excellent abridged tranſlation of this comprehenſive and learned work, publiſhed

1791, in 2 vols. 4to. In this inſtructive work the author compriſes the hiſtory of philoſophy under three periods: the *firſt*, commencing from the earlieſt times, and extending to the decline of the Roman empire, comprehends the Barbaric and the Grecian philoſophy: the *ſecond*, from the decline of the Roman republic to the revival of letters, comprehends the philoſophy of the Romans, the oriental philoſophy, that of the Jews, that of the Saracens or Arabians, and that of the Chriſtians: and the *third* period, from the revival of letters to the beginning of the 18th century, includes attempts to reſtore and correct the Sectarian philoſophy, attempts to introduce new methods of philoſophiſing, and attempts to improve philoſophy in the true Eclectic method.

BRUCKLAW, in *Geography*, a town of Germany, in the circle of Upper Saxony, and county of Reus; 8 miles W.N.W. of Greitz.

BRUCKMAN, FRANCIS-ERNEST, in *Biography*, was born at Helmſtadt, in 1697, and, having completed his ſtudies, was created doctor in medicine, at the univerſity there, in the year 1721. As his taſte inclined him to botany, he travelled over Bohemia, Auſtria, and a great part of Germany, examining and collecting plants indigenous to thoſe countries, and other natural productions. In return for his communications to the Academia Nat. Curioſ. and of Berlin; he was made correſponding member of thoſe ſocieties. Having finiſhed his travels, he ſettled at Brunſwick, where he continued in requeſt to the time of his death, March 21ſt, 1753. When young, and before he had taken the degree of doctor, he publiſhed, "Specimen Botanicum, exhibens fungos ſubterraneos, vulgo tubera terræ dictos," Helmſt. 1720, 4to. with engravings. He conſidered the black ſpots on the bark as ſeeds. In 1727, "Opuſcula Medico botanica," 4to. Brunſwick. In this he treats of the medical qualities of various vegetable productions, among others of coffee, the uſe of which he condemns. "Epiſtolæ Itinerariæ," containing his obſervations on vegetable and other natural productions, collected during his travels. The epiſtles are 300 in number, the firſt century was publiſhed in 1742; the two laſt in 1749, 4to. They contain a great body of uſeful information. The titles of a few of the epiſtles follow, for the reſt, or ſuch of them as are moſt curious, conſult Haller's Bib. Botan. "De Terreſtricole, ſeu Phallo;" "De Alga Saccharifera;" "Animadverſiones in Piſonis et Boetii Libros;" "De Muſcis nondum deſcriptis;" "De Melone Aquiformi;" "De Solani tuberos, radice infantem referente;" "De Uſu Corticis Sambuci in Hydrope," &c. &c. Haller. Bib. Bot. and Chirurg. Eloy. Dict. Hiſt.

BRUCKOBEL, in *Geography*, a town of Germany, in the circle of the Upper Rhine, and county of Hanau Munzenberg; 2 miles N. of Hanau.

BRUCTERII, in *Ancient Geography*, a people of Germany, placed by moſt geographers next to the Friſii, between the Amiſia, now the Ems, and the lake Flevus, now the Zuyder Zee. They were powerful and warlike; but before the time when Tacitus wrote, (ſee Germ. 37.) that is, before Trajan's ſecond conſulſhip, they had been extirpated by their neighbours, who had conſpired againſt them; and their place was occupied by the Charnavi and Angrivarii. They were conquered by Druſus in a naval fight, on occaſion of his firſt German campaign; again by Tiberius in the 4th year of the Chriſtian era; and afterwards, A. D. 14 and 15, by Germanicus. In the year 69 they joined Civilis in his attack upon the Romans. Towards the commencement of the 4th century, Conſtantine, having paſſed the Rhine, entered their country and laid it waſte with fire and ſword. Their villages were burnt, their cattle ſlaughtered, their men and women maſſacred, and thoſe that eſcaped the ſword, and were made priſoners, met with a ſtill more cruel fate. As he judged them incapable of ever performing any really uſeful ſervice, on account of their perfidy and invincible ferocity, they were condemned to the ſame puniſhment as the kings of the Franks, whom he had vanquiſhed, and delivered to wild beaſts, whoſe ſavage diſpoſition they imitated.

BRUDUS, EMANUEL, in *Biography*, ſon of the phyſician Dionyſius, of Paris, practiſed medicine for ſome years in England. He publiſhed, in 1544, at Venice. "De Ratione Victus in ſingulis Febribus ad Anglos," 8vo. It is a thick and bulky volume, and has been ſeveral times reprinted, once by Geſner, in 1555. He appears to have read the old Greek and Arabian writers with attention, and to have drawn his doctrine principally from them. Too ſlender a diet ſhould not be given to the Engliſh in fevers, but care ſhould be taken to keep up the ſtrength of the patients. This ſhould be done in all fevers, of which he deſcribes the different ſtages, with the treatment in each. He is every where prolix, but ſome good practical rules may be deduced. "Dialogus circa quaſdam Queſtiones in Medicina," 4to. without date. Haller. Bib. Med.

BRUEGEL, in *Geography*, a town of Upper Guelderland; 10 miles S.E. of Venloo.

BRUEHL, WALTER, or BRAUT, in *Biography*, a German phyſician, publiſhed in 1579, Antw. fol. "Praxis Medica, Theorica et Empirica, familiariſſima, in qua morborum internorum cognitio, et curatio traditur." The work, though little noticed now, was in much eſtimation, as appears by its having paſſed through eight editions, the laſt printed at Venice in 1602, 8vo. It is dedicated to the earl of Huntington, which makes it probable the author had been in this country. Haller. Bib. Med. Pract. Eloy Dict. Hiſt.

BRUEL, in *Geography*, a town of Germany, in the circle of Lower Saxony, and duchy of Mecklenburg; 12 miles N.E. of Schwerin.

BRUEL, *Brughl*, or *Brugl*, a town of Germany, in the circle of the Lower Rhine, and electorate of Cologn; 6 miles S. of Cologn.

BRUE'RE, a town of France, in the department of the Cher, and diſtrict of St. Amand, ſeated on the Cher; 1½ league N.W. of St. Amand.

BRUEYS, DAVID-AUGUSTIN, in *Biography*, a French writer, was born of a proteſtant family, at Aix, in 1640, and educated for the bar, but his inclination to controverſial theology led him to abandon the profeſſion of an advocate; and, in 1682, he publiſhed an anſwer to biſhop Boſſuet's expoſition of the doctrine of the church. The biſhop, however, converted him to the catholic faith; and after he had buried his wife, he entered into the eccleſiaſtical ſtate, and diſtinguiſhed himſelf as the champion of popery againſt Jurieu, Lenfant, and other proteſtant divines. Of the ſincerity of his converſion his ſubſequent conduct afforded ſome ground of ſuſpicion; as he diverted his attention from theology and devoted it to dramatic ſubjects. Accordingly he compoſed ſeveral pieces for the ſtage, ſome of which were written in conjuction with his friend Palaprat. Of theſe the moſt celebrated are the comedy of "Le Grondeur," (the Grumbler), which Voltaire prefers to all the lighter pieces of Moliere, and a revived ancient piece, called "L'Avocat Patelin," diſtinguiſhed for its humourous ſimplicity. At a more advanced age he again reſumed theological controverſy, and wrote "The Hiſtory of Fanaticiſm in our own times," relating to the ſtate of religion in the

Cevennes. The Abbé Brueys, as he was uſually ſtyled, died at Montpellier in 1723. His dramatic works were collected into 3 vols. in 1735. Nouv. Dict. Hiſt.

BRUFF, in *Geography*, a ſmall poſt and market town of Ireland, in the county of Limerick; ſituate on the road from Cork to Limerick; 12 miles S. of the latter city, and 106 miles S. W. of Dublin.

BRUFFIER, La, a town of France, in the department of the Vendée, and diſtrict of Montaigu; 13 leagues E.N.E. of Montaigu.

BRUGD, in *Ichthyology*. See Squalus Maximus, *great ſhark*.

BRUGES, John of, in *Biography*. See Eyck.

Bruges, in *Geography*, a town of France, in the department of the Lower Pyrenées, and diſtrict of Pau; 4 leagues S. of Pau.

Bruges, once a commercial, flouriſhing, and populous city of the Auſtrian Netherlands, and a biſhop's ſee, and now, ſince the French revolution, the capital of a diſtrict, in the department of the Lys, which is divided into five parts; the firſt part containing, according to Tinſeau's ſtatiſtical view of France, 9508 inhabitants, the canton 14,444, and its territory comprehending 207½ kiliometres, and five communes: the ſecond part includes 7049, and its canton 13,022 inhabitants; its territory comprehends 70 kiliometres, and 4 communes: the third part contains 7553, and the canton 13,896 inhabitants; its territory includes 105 kiliometres, and 7 communes: the fourth part contains 6796, and its canton 14,320 inhabitants; its territory comprehends 107½ kiliometres, and 11 communes: and the fifth part contains 2821, and its canton 11,974 inhabitants; its territory includes 147½ kiliometres, and 12 communes. According to this ſtatement the population of Bruges amounts to 33,700 perſons; but others, by a more moderate computation, eſtimate the number at 20,000. Bruges is about a league and a half in circumference; is advantageouſly ſituated for commerce, about 8 miles from the ſea; and communicates, by means of navigable canals, with Ghent, Oſtend, Nieuport, Furnes, Damme, Sluys, &c. As the adjacent country is nearly level, the water about it has no perceptible current; but it is eaſily changed in half an hour's time, by opening the ſluices, and diſcharging it into the ſea. According to Guiccardini, this city was firſt founded about the year 760; and took its name from a bridge called "Brugſtock," in its vicinity, between Oudembourg and Radembourg or Ardembourg, which are two maritime towns, ſaid to have had conſiderable commerce in this country, till they were ruined by the Danes or Normans. Out of the ruins of Oudembourg was built the original town or caſtle of Bruges. In the 13th and 14th centuries, Bruges was the greateſt emporium in all Europe. Navigation was then ſo imperfect, that a voyage between the Baltic and the Mediterranean could not be performed in one ſummer; and, therefore, it became neceſſary to eſtabliſh a magazine or ſtorehouſe about midway between the commercial cities in the North and thoſe in Italy. Bruges was ſelected as the moſt convenient ſtation; and this choice of courſe introduced vaſt wealth into the Low Countries. Bruges was at once the ſtaple for Engliſh wool; for the woollen and linen manufactures of the Netherlands; for the naval ſtores, and other bulky commodities of the North; and for the Indian commodities, as well as domeſtic productions, imported by the Italian ſtates. The extent of its commerce in Indian goods, with Venice alone, appears from one fact. In the year 318, five Venetian galeaſſes laden with Indian commodities arrived at Bruges, in order to diſpoſe of their cargoes at the fair. Theſe galeaſſes were veſſels of conſiderable burden. The citizens of Bruges, enriched by its commerce, diſplayed in their dreſs, their buildings, and their mode of living, ſuch magnificence as even to mortify the pride and excite the envy of royalty. To this purpoſe we may mention a ſingular inſtance. In 1301, Joanna of Navarre, the wife of Philip le Bel, king of France, having been ſome days in Bruges, was ſo much ſtruck with the grandeur and wealth of that city, and particularly with the ſplendid appearance of the wives of the citizens, that ſhe was moved (ſays Guiccardini, Deſcrit. de Paeſi Baſſi, p. 408,) by female envy to exclaim with indignation, "I thought that I had been the only queen here, but I find there are many hundreds more." However, in the year 1487, this city, become rich and alſo inſolent, in conſequence of its extenſive commerce, had the audacity to ſeize on Maximilian, king of the Romans, and to kill ſome of his miniſters in his preſence. This violent inſult brought about its ruin; for the emperor Frederick, father of Maximilian, took occaſion to block up Sluys, its proper haven, by the aſſiſtance of Antwerp and Amſterdam, which had been for ſome time envious of its engroſſing the whole trade of the Low Countries; upon which the commerce removed from Bruges to Dort. and from thence ſoon after to Antwerp. According to Thuanus and Guiccardini, it removed directly to Antwerp, which ſoon vied with Bruges in opulence and ſplendour. "Till this time (ſays biſhop Huet, in his "Memoirs of the Dutch trade,") there was ſcarce a nation in Europe, how inconſiderable ſoever, that had not their proper mercantile magazine or ſtore-houſe at Bruges, and a company or factory there reſiding; as the Engliſh, French, Scots, Caſtilians, Portugueſe. thoſe of Arragon, Catalonia, Biſcay, Venice, Florence, Genoa, Lucca. Milan, Germany, Denmark, Sweden, and all the Hanſe towns." The penſionary, De Wit, in his "Intereſt of Holland," accounts in a ſomewhat different manner for the loſs of its commerce, which Bruges ſuſtained. He ſays, that the fiſheries and manufactures of the Netherlands increaſed more and more, together with the traffic by ſea to Bruges, which laſted till the year 1482, when Flanders had wars with the archduke Maximilian, about the guardianſhip of his ſon and his dominions, which continued for ten years. In the mean time, Sluys, the ſea-port of Bruges, being moſt diſturbed, thoſe of Antwerp and Amſterdam, in order to draw the trade to their own cities, aſſiſted the archduke in his unbridled tyranny and barbarous deſtruction of that country, and thereby regained his favour, and attained their own ends. Notwithſtanding the decline of its commerce, Bruges, having a communication with the ſea from Oſtend by means of a navigable canal, is ſtill a place of conſiderable trade; and has various manufactures of broad ſays, baize, and other woollens.

Bruges was formerly in the dioceſe of Tournay; but in 1559, it was erected into a biſhopric, by Philip II. king of Spain, ſubject to the archbiſhop of Malines. In 1430, Philip the Good, duke of Burgundy, inſtituted at Bruges the order of the golden fleece. The parts about the city which belong to this order are called "Franc of Bruges," and contain 37 villages, and accordingly enjoy certain immunities. The ſtreets of Bruges, which are about 260 in number, are ſpacious, and the houſes, though old, well built; it has ſeven gates, and ſix grand markets; but, having neither fountain nor river, the city is ſupplied with water from the rivers Lys and Scheldt, conveyed from Ghent by means of pipes. The principal buildings are the town-houſe, built in the Gothic manner, and ſituate in the large ſquare called the Burg, the halls, the mint, &c. At the end of the ſquare, called the grand market, is a fine ſteeple, ſupported by four pillars, which is one of the moſt beautiful of the kind in Europe, 533 ſteps in height, and furniſhed with bells and chimes, which play a different tune every quarter of an hour. On the ſide of the great ſquare is an edifice ſerving as a magazine for cloth, built over a canal, and ſo ſuſtained by pillars, that ſmall veſſels may paſs under it, in order to croſs the city from the canal of Oſtend to that of Ghent. The ſquare in which the Wedneſday's market is kept, contains ſeveral walks between rows of trees, and a new guard houſe in the middle. At Bruges there are ſeveral fine churches. The cathedral is dedicated to St. Donat, but the church of Notre Dame is the moſt beautiful, and its ſteeple ſerves as a ſea mark for the ſhips that are coming to Oſtend; within it are two tombs of gilt copper, of extraordinary magnificence, and the rich veſtments of Thomas à Becket, adorned with precious ſtones. In the high altar in the cathedral is a picture by Segers, viz. "The Adoration of the Magi," which is conſidered by ſir Joſhua Reynolds as one of the beſt of that painter's works; and in the ſacriſty is a picture by Jean Van Eyck, of the "Virgin and Child, with St. George, and the other Saints." Beſides the cathedral and two collegiate churches, there are five pariſh churches, 14 chapels, and 12 convents for men and women. Bruges has alſo ſeveral alms-houſes and ſchools, and it is diſtinguiſhed by the proviſion which it affords for widows and orphans. There are ſtill remaining 17 palaces or houſes, that were the ancient habitations of ſo many conſuls of trade. The magiſtracy of Bruges is compoſed of two burgo-maſters, 12 echevins, 12 counſellors, 6 penſionaries, and two greffiers. This city, which is but indifferently fortified, was unſucceſsfully bombarded by the Dutch, July 4, 1704; in 1706 it ſubmitted to the allies, after the battle of Ramilies; in 1708 it was inveſted by the French and obliged to ſurrender; in 1709 the allies re-entered it, by virtue of a capitulation ſigned on the capture of Ghent, Dec. 30, 1709; and on the 24th of July, 1794, the magiſtrates opened the gates to the French troops, and ſigned a formal ſubmiſſion to the French republic. Bruges is 8 miles E. of Oſtend, 24 N.W. of Ghent, and 46 W. of Antwerp. N. lat. 51° 15′. E. long. 3° 15′.

BRUGG, or Bruck, a town of Swiſſerland, in the canton of Argow, ſeated on the river Aar. It formerly belonged to the counts of Hapſburg, of the houſe of Auſtria; the inhabitants embraced the proteſtant religion in 1529. N. lat. 47° 23′. E. long. 8° 5′.

BRUGGEN, a town of Germany, in the circle of Lower Saxony; and biſhopric of Hildeſheim, on the eaſt ſide of the Leine; 4 leagues S. W. from Hildeſheim.

Bruggen, or *Bruck*, a town of Germany, in the circle of Weſtphalia, and duchy of Juliers, on the Schwalm; 6 miles N. E. of Ruremond. On the 2d of March 1793, a battle was fought near this town, between the Pruſſians, under the command of prince Frederick of Brunſwick, and the French, in which the latttr were defeated, with the loſs of 1300 killed and 700 priſoners.

BRUGHAN, a river of North Wales, which runs into the Severn, about 2 miles above Llanydlos, in the county of Montgomery.

BRUGHAT, a town of France, in the department of the Allier, and diſtrict of Gannat; 2½ leagues E. of Gannat.

BRUGNETTO, a town of Genoa, ſituate at the foot of the Apennines; the ſee of a biſhop, ſuffragan of Genoa; 35 miles E.S.E. of Genoa.

BRUGUIERA, in *Botany*, (named in honour of Bruguiere, the well-known French botaniſt,) a new genus, formed by La Marck, for a plant placed by Linnæus in the genus Rhizophora, to which it is cloſely allied, but differs in having a polygonous fruit. La Marck Illuſt. Pl. 397. Boſc. Claſs, *dodecandria monogynia*. Nat. Ord. *Holeraceæ*. *Caprifolia*, Juſſ. Gen. Char. *Cal.* one-leaved, open, permanent; ſegments ten or twelve, linear, acuminate, keeled without, channelled within, a little fleſhy. *Cor.* petals ten or twelve, oblong, bifid at the ſummit, pointed, folded together lengthways ſo as to appear in ſome degree bivalved, ciliated, villous at the baſe, ſhorter than the ſegments of the calyx and alternating with them. *Stam.* from twenty to twenty two; filaments attached by pairs to the baſe of each petal, and encloſed within its fold; anthers upright, oblong. *Piſt.* germ inferior, ſtyle triangular; ſtigmas three. *Fruit*, conſiſting at firſt of a capſule, which is ſemi-inferior, terminated by the permanent ſtyle, one-celled, one-ſeeded, formed in ſome degree out of the calyx: but when the ſeed contained in the capſule is come to maturity, its ſummit is prolonged into a nearly cylindrical body, a little angular, furrowed, with a blunt point, very ſmooth and ſhining; and from four or five inches to a foot long. This appearance is no other than the germination of the ſeed; and the prolongation is the radicle of the embryo plant, which having by its weight detached the ſeed from the capſule, fixes itſelf in the mud, into which it has fallen perpendicularly, in conſequence of the capſule's having changed its original upright for a pendent poſition. This mode of germination is common alſo to all the ſpecies of the true Rhizophora. Eſſ. Ch. *Calyx* ſuperior, divided into ten or twelve ſegments; petals ten or twelve, doubled, bearing the ſtamens; ſtamens from twenty to twenty-two. *Style*, one; capſule one-ſeeded.

Spec. B. *gymnorhiza*, "Leaves ovate-lanceolate, root above ground." Linn.; a ſpecific character formed to diſtinguiſh it from the different ſpecies of Rhizophora. A tree about ten or twelve feet high. *Trunk* commonly crooked, covered with a thick, brown, rugged, cracked bark. *Branches* very numerous, extending in all directions, the lower ones throwing out naked flexible ſhoots, which ſtrike into the earth, and, like the fig-tree of Bengal, produce new trunks, ſo that it is often difficult to determine the parent ſtock; the whole forming by the intermixture of the branches an impenetrable thicket. *Leaves* oppoſite, decuſſate, ovate, acuminate, ſmooth, very entire, on ſhort petioles. *Flowers* ſolitary, axillary or lateral, greeniſh yellow, pendent. A native of the banks of ſalt-water rivers, and on the ſea-ſhore in the Eaſt Indies. See Ray. Hiſt. Plant. and Savigny in Encyclopedie Methodique, under Paletuvier.

BRUGUIERE, John, in *Biography*, a phyſician of Montpellier, founded a college for the maintenance and inſtruction of two young men, to be brought up to the practice of medicine, and dying without children in 1452, he left 800 ecus d'or, to purchaſe a piece of land, the rent of which was to be appropriated to the ſupport of his inſtitution, to which he alſo left his library. Aſtruc. Mem. pour ſervir a l'Hiſt de la faculte de Med. de Montp.

Bruguiere, *La*, in *Geography*, a town of France, in the department of the Tarn, and chief place of a canton, in the diſtrict of Caſtres, 1½ league S. of Caſtres; the place contains 3929, and the canton 6896 inhabitants: the territory comprehends 137½ kiliometres and 7 communes.

Bruguieres, a town of France, in the department of the Upper Garonne, and chief place of a canton, in the diſtrict of Toulouſe; 3 leagues N. of Toulouſe.

BRUHESIUS, Peter, or Peter van Bruhezen, in *Biography*, a phyſician of Brabant, born the early part of the 16th century, was ſo much eſteemed as to be made phyſician to Eleonora of Auſtria, ſiſter to the emperor Charles V., while ſhe was reſident in the Low Countries. He afterwards ſettled in Bruges, and was appointed penſionary phyſician to that city. The time of his death is not known, but his memory was honoured by an epitaph, written in 1571, by the poet Nicolaius, who ſpeaks highly of his profeſſional abilities. He publiſhed, "De Thermarum Aquiſgranenſium Viribus, Cauſa, et legitimo Uſu, Epiſtolæ duæ," 1550 and 1555. Antwerp, 12mo. "De Ratione medendi Morbi Articularis, 1592, in Henry Garret's Conſilia Variorum de Arthritide." "De Uſu et Ratione Cauteriorum," in the ſame collection. He was a believer in judicial aſtrology, and publiſhed "An Almanac," at Bruges, in which he ſets down the preciſe times, or circumſtances, under which bleeding, purging, and other operations might be ſafely undergone. Eloy Dict. Hiſt.

BRUHIER, JOHN JAMES, born at Beauvais, the end of the 17th century, ſtudied medicine at Angers, where he was admitted to the degree of doctor; he afterwards ſettled in Paris, and acquired conſiderable reputation by his practice, and by his writings. He died October 24th, 1756. In 1733, he publiſhed a tranſlation of Deventer's Treatiſe on Midwifery, under the title of "Obſervations ſur le Manuel des Accouchmens," 4to. Paris, and afterwards ſeveral of Hoffman's, works; his "Medicus Politicus," 12mo. "Medicina rationalis," in 9 volumes, his treatiſe on fevers, 3 vols. 12mo. "Le Caprices d'Imagination," &c. But the works by which he is moſt known, were his warnings againſt burying perſons, ſuppoſed to be dead, too early. "Diſſertation ſur l'Incertitude des Signes de la Mort, et l'Abus des Enterremens, et Embaumemens præcipites," Paris 1742. He was at the pains of collecting hiſtories of perſons who had revived, after being ſuppoſed to be dead, ſome of whom had been buried. Bodies ought not to be interred, he ſays, until putrefaction has commenced. "Memoire ſur la Neceſſite d'un Ræglement general au Sujet des Enterremens," 1745. No one ſhould be buried until the fourth day from their dying. "Addition aux memoires," &c. adding to the number of examples of perſons who had been buried alive, or had revived after being interred. Theſe works have paſſed through numerous editions, and have been tranſlated into every modern European language, and have doubtleſs been the means of preſerving many lives. M. de la Soriniere, on his being received into the Royal Academy at Angers, read a copy of verſes he had compoſed on the ſubject, beginning

Bruhier, ton immortel ouvrage,
Ouvre les yeux a bieu des gens,
Sur l'abus, la cruel uſage,
D'enterrer les morts, tout vivans, &c.

Haller Bib. Chirurg. Eloy. Dict. Hiſt.

BRUHL, a town of France, in the department of the Roer, and chief place of a canton, in the diſtrict of Cologne. The place contains 1932, and the canton 14,967 inhabitants; and the territory includes 31 communes.

BRUJA, BUFF, in *Ornithology*. See LANIUS MADAGASCARIENSIS, Gmel.

BRUIN, JOHN DE, in *Biography*, profeſſor of natural philoſophy and mathematics at Utrecht, was born at Gorcum in 1620; and having purſued a courſe of philoſophy at Leyden, and proſecuted his ſtudies at Bois-le-Duc, and Utrecht, he removed to Leyden, where he taught mathematics. He afterwards became profeſſor at Utrecht, and beſides his official duties, made diſſections in private and read lectures on Grotius's treatiſe, "De Jure Belli et Pacis." He was diſtinguiſhed by his attachment to experimental philoſophy, and by his obſervations in aſtronomy. As an author, he publiſhed diſſertations, "De Vi Altrice," "De Corporum Gravitate et Levitate," "De Cognitione Dei naturali," "De Lucis Cauſa et Origine," &c. He alſo maintained the Carteſian hypotheſis in a diſpute with Iſaac Voſſius, and wrote an apology firſt againſt a divine named Vogelſang. In 1655, he married the ſiſter of the wife of Daniel Elzevir, the famous bookſeller of Amſterdam, and died in 1675

BRUIN, JOHN DE, born at Amſterdam in 1681, was early initiated into the knowledge of ſurgery; but in 1700, determining to confine himſelf to the practice of midwifery, he entered as a pupil to Roger Roonhuyſen, to learn of him the art of delivery in caſes of difficulty, by means of an inſtrument he had invented, and which obtained the name of Roonhuyſen's lever. Aided with this inſtrument, he was enabled to relieve and bring down the head of a fœtus, that was firmly fixed in the pelvis, without injury to the mother or the child. As this inſtrument, and the manner of uſing it, were kept ſecret by Roonhuyſen, De Bruin paid a ſtipulated price for obtaining the knowledge of it; and became ſo ſkilful in uſing it, that he was conſulted in all caſes of difficulty. On his death, which happened January 23d, 1753, the ſecret was purchaſed by De Viſcher, and Van de Pool, phyſicians at Amſterdam, and through them communicated to the world. Eloy Dict. Hiſt.

BRUISE, in *Surgery*. See CONTUSION.

BRUISER, in *Mechanics*, the name of a concave tool uſed for grinding and poliſhing the ſpecula of teleſcopes. It is made of braſs, about a quarter of an inch thick, and hammered as near to the gage as poſſible. It is tinned on the convex ſide, and made equally broad at bottom and top. This ſerves to reduce the figure of the hones, when it is too convex, and to rub down any gritty matter that happens to be mixed with the putty, before the ſpeculum is applied to the poliſher. See Phil. Tranſ. vol. lxvii. part i. art. 16. and Smith's Optics, book iii. chap. 2.

BRUISING, in *Pharmacy*, ſignifies the operation of breaking or pounding a thing coarſely, or by halves; frequently practiſed on roots, woods, and other hard bodies, to make them yield their juice or virtue more freely than they would do whole.

BRUIT, FR., NOISE. The editors of the New French Encyclopedie, as well as Rouſſeau, have honoured this ſworn foe to muſic, and perſecutor of refined ears, with a long article. Rouſſeau defines noiſe in general to be every motion of the air which ſtrikes the tympanum, and is perceptible by the auricular organ; but, in muſic, noiſe is oppoſed to ſound, and extends to every ſenſation of the ear which is not ſonorous and appreciable. To explain the difference muſically, we may ſuppoſe that every muſical ſound is accompanied by its harmonies, and that noiſe having no ſuch coincident vibrations, has no determined tone or type in the harmonical ſyſtem. Noiſe may, perhaps, be of the ſame nature as ſound, but being produced by violence, and the aggregate of a confuſed multitude of different ſounds heard at once, they mutually counteract the undulations of each other. All elaſtic bodies ſeem ſonorous in proportion as their matter is homogeneous, as the degree of coheſion is more equal throughout, and its body not divided into numerous ſmall maſſes, which being of different ſolidity, conſequently give birth to warring ſounds. Why ſhould not noiſe produce ſound, ſince it can excite it? For every violent noiſe makes the ſtrings of a harpſichord ſound, nor, indeed, any ſingle ſtrings as a muſical tone does, but the whole inſtrument at once; becauſe no one finds its uniſon or harmonies. Again, why ſhould not noiſe give the ſenſation of ſound, ſince with ſound noiſe is produced? Put down all the keys of a harpſichord or piano-forte at once, and a ſenſation of nothing but noiſe will be the conſequence, and its effect will continue no longer than that of any other noiſe. Why ſhould not noiſe be ſound, ſince a muſical ſtring forced, or a pipe over-blown, is only noiſe, any more than a voice which ſcreams with all its might, or a great bell heard in the belfry? Becauſe it is impoſſible to diſcriminate one ſound from another; though the tone of the ſame bell at a diſtance is eaſily aſcertained, as would the ſcreaming voice if ſoftened and rendered tuneable.

But it may be aſked, whence comes this great change of noiſe into ſound. It is from the diminiſhed violence of the vibrations, which had cauſed ſo many aliquot parts to ſound at once that the total became mere noiſe. For the aliquot parts in vibration are not only the half, the third part, the fourth, and all the conſequences, but the ſeventh part, the ninth, the hundredth, and ſtill more; all which have the ſame effect as the putting down all the keys at once, the bell in the belfry, and the voice of a ſcreamer; and thus ſound itſelf becomes noiſe, and noiſe ſound. A coarſe, confuſed, and diſſonant muſic, is contemptuouſly called noiſe; as a bad opera ill performed is ſaid to produce a great noiſe, but no effect." Thus far the citizen of Geneva, with his uſual force and ingenuity, has deſcribed noiſe. A paſſage is given from "La Poetique de la Muſique," of M. De la Cepide, in ſupport of Rouſſeau's doctrine, which in this inſtance ſeems to want no ſupport.

Meſſrs. Ginguené and Framerie have taken up the ſubject after M. De la Cepide, merely to expand and amplify Rouſſeau's arguments, without fortifying them by any additional matter, except in cenſuring the augmentation of force in an orcheſtra by ſacbuts, cymbals, double drums, and tromboni, which producing nothing but noiſe themſelves, prevent us from hearing every thing that deſerves the name of muſic.

Inſtruments of percuſſion may be of uſe in the open air to mark the ſteps of an army on its march, and the ſcreaming and clamour of the reſt during battle, to drown the cries of the wounded and groans of the dying; but in an incloſed theatre or concert-room, they only torture delicate ears, and change into puniſhment the pleaſures of ſenſibility.

BRUKA, or Bruko, in *Geography*, a town of Africa, on the ſouth coaſt of the river Gambia; 160 miles from the ſea.

BRUKSAL, an iſland of Africa, near the mouth of the river Senegal.

BRULE, or Brullos, *Cape*, lies on the coaſt of Egypt; 11 leagues W.N.W. northerly from Damietta, or the ancient Peluſium.—Alſo, a cape on the coaſt of Cape Breton, in North America, near the gulf of St. Lawrence, ſeparating the bay of Morienne from the bay of Miray.

BRULON, a town of France, in the department of the Sarthe, and chief place of a canton, in the diſtrict of La Fléche; 3 leagues north of Sablé. The town contains 1310, and the canton 10,994 inhabitants; the territory includes 200 kiliometres, and 16 communes.

BRUMALIA, or Bromalia, a feaſt of Bacchus, celebrated among the ancient Romans, during the ſpace of 30 days; commencing on the 24th of November, and ending the 26th of December. Some ſay this feaſt was celebrated twice a year, viz. on the 12th of the calends of March, and on the 18th of the calends of September.

The word comes from *bruma*, the day of the winter ſolſtice; in regard of the time when the feaſt was held: though others derive it from *Brumus*, or *Bromius*, names of Bacchus.

The brumalia were inſtituted by Romulus, who uſed, during this time, to entertain the ſenate. During this feaſt indications were taken of the felicity of the remaining part of winter.

The *Brumalia* were alſo called *Hiemalia*.

BRUMALIS, in *Ornithology*, a ſpecies of Emberiza that inhabits the Tyroleſe country, called by Latham the Brumal Bunting. Scopoli thus deſcribes this little bird: body beneath, the front, and region of the eyes citron colour: hind head and neck cinereous.—Obſ. The back is yellow brown, vent citron, thighs whitiſh, quill-feathers brown, having the exterior margin citron.

BRUMATA, in *Entomology*, a ſpecies of Phalæna *(Geometra)* the wings of which are yellowiſh, with a black ſtreak, and a paler one behind. The female is apterous, or without wings, and ſpotted with black. Linn. Found on apple trees.

BRUMATH, in *Geography*, a town of France, in the department of the Lower Rhine, and chief place of a canton, in the diſtrict of Straſburg, 3 leagues N. of Straſburg. The town contains 2671, and the canton 12,951 inhabitants; the territory comprehends 182½ kiliometres, and 21 communes.

BRUMEL, Anthony, the moſt ancient contrapuntiſt of the French ſchool of whoſe compoſitions we have been able to find any remains, was contemporary with Juſquin, and ſcholar of Okenheim; and though he is not likely to be inquired after by the preſent age, he was ſo reſpected in his day, that his name ſhould not be conſigned to the gulph of oblivion while a veſtige of his works remains; and ſeveral ſtill ſubſiſt in Glarcanus, and the Muſeum collection. The fame of the great muſicians of antiquity is ſo eſtabliſhed in books, that, though not a ſingle relic of their works has been extant theſe two thouſand years, their names and renown are ſtill held in veneration by mankind.

BRUMOY, Peter, in *Biography*, a celebrated French writer, of the order of the Jeſuits, was born at Rouen in 1688, commenced his noviciate at Paris in 1704, and finiſhed his ſtudies at Caen. Having been for ſome time employed in teaching rhetoric in different parts of the country, he took the vows of his order at Paris in 1722, and undertook the education of the prince de Talmont. He engaged for ſeveral years in the Journal de Trevoux, but in conſequence of publiſhing father Margat's hiſtory of Tamerlane, he was exiled from Paris. On his return, he continued his "Hiſtory of the Gallican Church;" but having nearly finiſhed the 12th volume, he was taken off by a paralytic ſtroke in 1742, leaving behind him the character of an amiable man and an eſteemed writer. The work from which he acquired the greateſt reputation was his "Théatre des Grecs," in 3 vols. 4to.; containing proſe tranſlations and analyſes of the principal Greek tragedies, with diſſertations on the Greek theatre, &c. The author, whoſe erudition and taſte are much eſteemed by the beſt judges, has been cenſured by ſome writers for manifeſting too ſtrong a bias towards the ancients, and Voltaire in particular is diſpleaſed for his not having allowed the ſuperiority of the French theatre above the Greek. Brumoy publiſhed likewiſe, in 1741, a collection of his own pieces, in 4 vols. 12mo. conſiſting of Latin poems, founded upon the model of Lucretius, epiſtles, and dramatic pieces, tragic, comic, and paſtoral. His poem on the "Paſſions" has been much extolled for the elevation of its ſentiments, and its poetic beauties. The diſcriminating excellence of his tragedies conſiſts in the delineation of the tender paſſions. The "Revolutions of Spain," begun by father Orleans, were finiſhed by Brumoy. Nouv. Dict. Hiſt.

BRUN, Charles Le, an eminent French painter, was the ſon of a ſculptor, deſcended from a Scots family probably of the name of "Brown," and born at Paris in 1619. Manifeſting in very early life the bent of his genius, ſo that at the age of four years he took coals from the fire for drawing figures on the floor, and at the age of twelve years made a good portrait of his grandfather, he was placed under the inſtruction of Vouet, whom he aſtoniſhed by his rapid progreſs. In 1642 he was ſent by the chancellor Seguier to Italy, where he continued 6 years, boarding in the houſe of the famous Pouſſin, and employing himſelf in copying the works of the principal maſters, and in ſtudying the *coſtume* of different ages and nations, ſo as to acquire the character of a learned painter. He alſo imitated the taſte of Pouſſin ſo exactly as to deceive ſeveral connoiſſeurs. On his return from Rome to Paris, in 1648, he was received into the Academy, and as he engaged in the higheſt branch of his art, hiſtorical and allegorical painting, and ſelected great works, he roſe to the moſt diſtinguiſhed rank in his profeſſion. He was patronized by the ſuperintendant Fouquet, and by him recommended to Cardinal Mazarin, and by his interpoſition, to the king. By the intereſt of Colbert, he was afterwards made the king's firſt painter, and ennobled in 1662. Lewis XIV honoured him with peculiar tokens of favour, and frequently attended him whilſt he was painting the family of Darius at Fontainbleau. In his five large pieces of the hiſtory of Alexander the Great, he is ſaid to have exhibited the exploits of that conqueror in a more glorious light than Quintus Curtius in his hiſtory. As an evidence of his attention to truth and nature, it is reported that he cauſed Perſian horſes to be drawn at Aleppo as models for thoſe which he painted in Alexander's battles. He was employed by Colbert in painting the chapel and pavilion of Aurora at his ſeat of Sceaux, and by his intereſt he had the direction of the royal works, and particularly of the Gobelin manufactory, for the tapeſtry of which he made deſigns of the four ſeaſons and four elements, that were engraved by Le Clerc. At the Gobelins he had handſome lodgings, and he was allowed a conſiderable penſion. The Academy of painting was altogether under his direction, and he contributed in an eminent degree, by procuring an eſtabliſhment at Rome for the gratuitous education of young artiſts ſelected from Paris, and in a variety of other ways, to the promotion of the fine arts in France, and to the peculiar magnificence of the reign of Lewis XIV. With a particular view to this laſt object, he was occupied for fourteen years in repreſenting by hiſtory and allegory, in the great gallery at Verſailles, the ſplendid events of this period down to the peace of Nimeguen. But the work, though he devoted to it much time and attention, became the ſubject of criticiſm, ſo that his reputation derived little advantage from it. When Louvois ſucceeded Colbert as ſuperintendant of the royal edifices, Mignard was ſet up as a rival to Le Brun, and the mortification he experienced preyed upon his ſpirits, ſo that he fell into a decline, and died in 1690, leaving a wife but no children. Le Brun maintained, in his manners and ſtyle of living, the dignity of a man of quality: foreign princes teſtified their reſpect for his talents by the eagerneſs with which they endeavoured to obtain poſſeſſion of his works, and the grand duke of Tuſcany paid him the compliment of requeſting a portrait of him for his gallery. Thus flattered and honoured, both at home and abroad, it is no wonder that his pride ſhould be mortified by the advancement of a rival; more eſpecially when we conſider, that he manifeſted a jealouſy of competitors in his conduct towards Le Sueur, which was unworthy of his talents and character. When this great genius lay on his death bed, Le Brun, after having viſited him, ſaid on his departure, "that death was taking a great thorn out of his foot;" an expreſſion which indicated want of becoming ſenſibility, and which occaſioned the unfounded report that he had procured poiſon to be adminiſtered to his rival.

The diſtinguiſhing merits of Le Brun as a painter are greatneſs of conception, good ordonnance, expreſſion and elevation: but he is cenſured for too much of the French flutter and affectation, a want of variety in his attitudes and draperies, and deficiency of colouring. Among the moſt eſtimable of his performances we may reckon the "Battles of Alexander," the merit of which has been more conſpicuous by the excellent engravings of Girard Audran, the "Penitent Magdalen" much admired, the "Carrying of the Croſs," the "Crucifixion," and "St. John in the lake of Patmos." His deſigns have been copied by many capital engravers: and he himſelf etched for his amuſement ſeveral plates, in a dark bold ſtyle, manifeſting the hand of the maſter, among which are the "Four times of the Day" and an "Infant kneeling upon the Croſs," from his own deſigns.

As a writer, he is known for two works: one "On Phyſiognomy," and another "On the Paſſions," which latter has ſupplied various models for drawing. D'Argenville, Gen. Dict. Pilkington. Strutt.

Brun, Peter Le, a learned eccleſiaſtical writer, was born at Brignole, in Provence, in 1661, became a prieſt of the oratory, and was engaged for 13 years in giving lectures, at the ſeminary of St. Magloire, at Paris, on the Scriptures, councils, and eccleſiaſtical hiſtory. In 1693 he publiſhed "Letters to prove the illuſion of Philoſophers on the Divining Rod," afterwards publiſhed under the title of "Critical Hiſtory of the Superſtitious Practices which have ſeduced the Vulgar and embarraſſed the Learned, with the Method and Principles for diſcriminating the natural from the ſupernatural Effects," three vols. 12mo. in which the author admits the reality of diabolical illuſions in his attempt to give a natural explanation of fraudulent deceptions. He alſo wrote "An hiſtorical and doctrinal Treatiſe on theatrical Spectacles," 12mo. in which he maintains their unlawfulneſs to a Chriſtian. At the requeſt of the Abbe Bignon, he publiſhed an elaborate work on "Liturgies," in 4 vols. 8vo. the firſt of which appeared in 1716, and three others in 1726. The opinions which he advanced on the conſecration of the maſs, involved him in a controverſy, during the proſecution of which his life was terminated by a diſorder in the breaſt, in January, 1729. As a writer, he was profound and methodical, with a clear and ſimple ſtyle; and his piety was equal to his erudition. Nouv. Dict. Hiſt.

Brun, or Browne, Cape, in *Geography*, lies in the N.N.E. point of the entrance into the great road of Toulon, on the coaſt of France, in the Mediterranean.

BRUNCA, La, a ſea-port town on the weſt coaſt of the iſland of Sicily, at the entrance of the gulf of Catania, 16 miles ſouth of Catania.

BRUNDISI, or Brundisium. See Brindisi.

BRUNELLA, in *Botany*. See Prunella.

BRUNELLESCHI, Philip, in *Biography*, an eminent Italian architect, was born at Florence in 1377; and in early life having a taſte for mathematics and mechanics, and a deſire to learn ſculpture, he became acquainted with Donatelli, a riſing artiſt in this department, and accompanied him to Rome, in order to ſurvey the monuments of architecture and ſculpture in that capital. Here Brunelleſchi employed his whole time with indefatigable aſſiduity, in making drawings and taking meaſures of all the famous relics of antiquity; and having conceived a deſign of eſtabliſhing his fame, by erecting, on a new plan, a dome for the cathedral of St. Maria del Fiore at Florence, he remained in Rome, after the departure of his friend, in order to qualify himſelf for this undertaking. As in his youth he had been initiated into the buſineſs of a goldſmith, he now found his knowledge uſeful in procuring a maintenance by ſetting jewels for the goldſmiths. In 1407 ſickneſs obliged him to return to Florence; and at this time the Florentines had convoked an aſſembly of architects and engineers to deliberate on the completion of the cathedral. Brunelleſchi gave his opinion and then returned to Rome. Many plans were propoſed for erecting the propoſed dome; but Brunelleſchi was ſingular in aſſerting that a double dome might be raiſed to a ſufficient height, without that immenſe maſs of timber-work which others had thought to be neceſſary. Having communicated his deſigns, he engaged the confidence of the magiſtrates, and he was employed in the execution of the work. He proceeded in it with ardour, and lived to complete the dome as far as the lantern; carrying it to ſuch a height, and executing it with ſuch beauty, as aſtoniſhed the whole country. Such indeed was the beauty with which it was executed, that Michael Angelo afterwards ſaid, it would be very difficult to imitate, and perhaps impoſſible to ſurpaſs it. Brunelleſchi was employed by Coſmo the Great in building the abbey of canons regular at Feſoli, and in forming for him the model of a palace, which his prudence and moderation would not allow him to execute. But as Coſmo preferred the more humble plan of Michelozzi, Brunelleſchi was ſo indignant that he deſtroyed his model, though its ſuperiority was acknowledged by Coſmo. He afterwards undertook the conſtruction of the Pitti palace, and carried it up to the ſecond ſtory; but the completion of it after his death, was the work of Ammanati. The church of St. Lorenzo in Florence, was almoſt entirely the work of Brunelleſchi. He was no leſs ſkilled in military, than in civil architecture; and in this department, he gave to the duke of Milan the plan of a fortreſs for his capital; and he alſo contrived the two citadels of Piſa, and other fortifications in that part of Italy. As a civil engineer, he was employed in 1445, by the marquis of Mantua in conſtructing dykes for reſtraining the Po to its bed; and ſoon after the completion of this work, he died at the age of 69, much regretted by his brother-artiſts, and more ſo by the poor, to whom he was a father. His merit was more generally acknowledged after his death than during his life; for he had the mortification of ſeeing ſeveral of his undertakings left unfiniſhed for want of due encouragement. Brunelleſchi was alſo a cultivator of Italian poetry, and ſome of his burleſque verſes have been printed along with thoſe of Burchiello. D'Argenville. Tiraboſchi.

BRUNELLIA, in *Botany*. Claſs, *dodecandria pentagynia*. Gen. Char. *Calyx* with five ovate ſegments, permanent. *Cor.* none. *Stam.* filaments eleven, villous at their baſe. *Nect.* eleven permanent glands, alternating with the ſtamens. *Piſt.* germs five, ſuperior; ſtyles tubular; ſtigmas ſimple. *Peric.* capſules five, diſpoſed in the form of a ſtar, oblong, pointed, one-celled, one-valved, opening lengthways. *Seeds* two, pedicelled, incloſed in an aril. Two trees of this genus are figured in the Flor. Peruv. pl. 12. Boſc.

BRUNET, in *Ornithology*, the name aſſigned by Buffon to *Fringilla pecoris*, which ſee. Thus alſo *Brunet du Cap de Bonne Eſperance*, Buff. is *turdus capenſis*, which ſee.

Brunet, in *Geography*, a ſmall iſland near the ſouth coaſt of Newfoundland, at the entrance into Fortune bay. N. lat. 47° 15′. W. long. 55° 4′.

Brunet, *Cape*, is the ſouth point of the entrance into the bay of Arcaſſon, on the weſt coaſt of France, from which a tail ſtretches off towards the ſea, in the direction of W.S.W.

BRUNETTE, La, a ſtrong and well garriſoned fortreſs of Piedmont, near Suſa, commanding two vallies. By an article in the peace concluded between the French and the king of Sardinia, in April 1796, this fortreſs was to be diſmantled.

BRUNFELSIA, in *Botany*, (named by Plumier from Otto Brunfelſius of Mentz, who publiſhed the firſt good figures of plants in 1530, and died in 1534). Linn. 260. Reich. 281. Schreb. 1013. Willden. 1151. Juſſ. 127. La Marck. Boſc. Claſs, *pentandria monogynia*, Linnæus, Reichard, and Boſc; *didynamia angioſpermia*. Gmelin, Schreber, Willdenow, and La Marck. Nat. Ord. *Perſonatæ—Solaneæ*. Juſſ. Gen. Char. *Cal.* one-leafed, bell-ſhaped, five-toothed, obtuſe, very ſmall, permanent. *Cor.* one-petalled, funnel-ſhaped; tube very long, ſlightly curved inwards; border flat, with five blunt, nearly equal lobes. *Stam.* filaments four, very ſhort; anthers two, a little higher than the others, prominent from the mouth of the tube (a fifth filament very ſmall, abortive, Juſſ. & Boſc.) *Piſt.* germ roundiſh, ſmall; ſtyle thread-ſhaped, the length of the tube; ſtigma rather thick. *Pericarp*, a berry, Linn. Swartz, Juſſ. La Marck, Boſc; a capſule berried on the outſide, one-celled, two-valved, opening by a diſtinct ſuture from the ſummit to the baſe, Schreb. Willd. Martyn. *Seeds* many, compreſſed, convex on one ſide, angular on the other, rugged, with little points.

Eſſ. Char. *Calyx* five-toothed, narrow; tube of the corolla very long; capſule one-celled, many-ſeeded, with a large fleſhy receptacle.

Sp. 1. B. *Americana*, Linn. trumpet-flower. (La Marck Illuſt. Pl. 548.) "Leaves elliptic, acuminate, on longiſh petioles; tube of the corolla erect; lobes of the border entire." Swartz. A tree of a moderate ſize. *Trunk*, the thickneſs of the human body. *Branches* looſe. *Leaves* alternate, very entire, narrowed towards the baſe, ſmooth. *Flowers* growing three or four together at the ends of the branches. *Tube* of a pale colour, ſprinkled with violet ſpots; border at firſt very white, at length pale yellow. *Fruit* nearly ſpherical, a little larger than a nut, of an orange colour, containing numerous ruſſet ſeeds placed between the external covering and a fleſhy ſucculent ſubſtance which occupies all the inſide. La Marck. A native of Jamaica, Martinico, and other Weſt Indian iſlands. Cultivated by Mr. Miller, in 1739 2. B. *undulata*. "Leaves lanceolate-ovate, drawn to a point at both ends; petioles very ſhort; tube of the corolla curved; border waved." Swartz. A native alſo of Jamaica, &c.

Obſ. Schreber's deſcription of the receptacle not being reconcileable with La Marck's, and not being in itſelf very intelligible, has been omitted.

Both theſe ſpecies may be raiſed in the ſpring, either from ſeeds or cuttings, and ſhould be treated like other tropical plants. In ſummer they ſhould have much freſh air; but in winter muſt be kept cloſe. With proper management they will produce flowers every ſeaſon in June and July.

BRUNI, Leonard, in *Biography*. See Aretino.

BRUNIA, in *Botany*, (from Cornelius Brun, the celebrated traveller). Linn. 274. Reich. 293. Schreb. 376. Juſſ. 381. Gært. 152. Pl. 30. Willd. 428. Ventenat. vol. iii. p. 474. A genus formed by Linnæus for ſeveral ſhrubby plants, which have ſome reſemblance in habit to *erica* and *protea*, and are allied in their mode of infloreſcence to *ſtatice*; but its diſtinguiſhing characters were not accurately fixed: for Linnæus afterwards ſeparated from it two of the original ſpecies, annexing one to *dioſmæ*, and the other to *protea*, and admitted an additional one, which he had formerly referred to *phyſica*. Reichard was ſenſible that the ſpecies of Linnæus differ from each other in the number of ſtyles and ſituation of the germ, but left them as he found them. Gærtner alſo obſerved, that the genus ſtood in need of a thorough inveſtigation; and that the plants with an inferior ought to be ſeparated from thoſe which have a ſuperior germ. In conformity with this idea, Schreber formed a new genus for the former, with the additional characters of two ſtyles, either quite ſeparate, or joined together, and filaments inſerted on the calyx. This genus he called *leviſanus*; but in honour of one of Linnæus's diſciples, it has ſince been named *ſtaavia*. The eſſential character of *brunia*, as it ſtands in Schreber, conſiſts of a ſuperior germ, ſingle ſtyle, and ſtamens inſerted on the claws of the petals. But the confuſion was not yet completely removed; for two of the ſpecies with a ſuperior germ have decidedly two ſtyles. It was therefore neceſſary either to divide the original genus into three, or to allow to *brunia* a greater latitude with reſpect to the ſtyle. The latter has been preferred by the preſent French botaniſts, except La Marck; and we do not heſitate to adopt Ventenat's generic character of *brunia*, eſpecially as it correſponds with Willdenow's diſpoſition of the ſpecies, though the eſſential characters of *brunia* and *ſtaavia* in the German author are both erroneous. We ſhall only add, that ſome obſcurity nevertheleſs muſt remain, till we have new and accurate detailed deſcriptions of all the ſpecies taken from recent and complete ſpecimens. Gen. Char. *Receptacle common*, chaffy. *Calyx common*, many-leaved. *Cal. proper*, inferior, with five ſegments. *Petals* five, elongate, upright, clawed. *Stam.* five, attached to the claws of the petals. *Piſt.* germ ſuperior; ſtyle ſingle or double; ſtigmas two. *Pericarp*, a dry ovate drupe, containing a hard, two-celled nut, with but few ſeeds.

Eſſ. Char. *Stamens* on the claws of the petals; germ ſuperior. *Pericarp*, a dry, two-celled drupe.

Species, 1. B. *nodiflora*, Linn. (La Marck, Illuſt. Pl. 126.) "Leaves three-ſided, curved inwards; heads of flowers terminal, on the lateral branches." Thun. A branched, evergreen underſhrub. *Leaves* very ſmall, pointed, upright, cloſely imbricated, forming in the ſlender branches five longitudinal, ſomewhat ſpiral, angles. *Heads of flowers* whitiſh, about the ſize of a ſmall cherry. *Styles* two. 2. B. *paleacea*. Linn. "Leaves three-ſided, upright, cloſely preſſed to the ſtem; heads corymboſe, chaffy; chaff longer than the flowers." Willd. Similar to the foregoing. *Leaves* ſmaller. *Heads of flowers* many, panicled. *Receptacle* villous. *Styles* two. 3. B. *lanuginoſa*. Linn. "Leaves linear, very ſlender, ſpreading, ſmooth: heads of flowers globular, ſmoothiſh, aggregate, terminal." La Marck. Little *branches* reticulated, with a woolly ſubſtance, in the manner of a ſpider's web, whence the trivial name. *Leaves* numerous, very ſmall, ſmooth, tipped with a black point. *Heads of flowers* white, ſmall, ſmooth, numerous. Bergius ſays, that the germ is inferior; but it appeared to La Marck in a dried ſpecimen to be ſuperior, incorporated with the top-ſhaped baſe of the flower. *Style* awl-ſhaped; ſtigma ſimple. If Bergius ſhould prove to be right, and if, as the ſimple ſtigma ſeems to indicate, the fruit ſhould be found one-celled, it muſt be removed to *ſtaavia*. 4. B. *abrotanoides*, Linn. "Leaves linear-lanceolate, ſpreading, with three flat ſides, callous at the points." Linn. A much branched underſhrub, about a foot and a half high. *Leaves* ſmooth, rounded. *Heads of flowers* ſmall, ſmooth, terminating, many together, diſpoſed ſomewhat in the form of an umbel. *Style* one, emarginate. 5. B. *verticillata*, Linn. jun. "Leaves with three flat ſides, obtuſe, ſmooth; little *branches* whorled faſtigiate; *heads* terminating." Linn. jun. *Heads* not globular. 6. B. *ſuperba*, Willd. "Leaves with three flat ſides, thread-ſhaped, with callous points, ſpreading, ciliate-villous." Willd. "Edges of the leaves thinly ciliated with long hairs." 7. B. *fraganoides*, Willd. "Leaves with three flat ſides, preſſed to the ſtem; the edges and the midrib thickly ciliated." Willd. Theſe two are inſerted from their habit; the flowers not being known. 8. B. *ciliata*, Linn. "Leaves ovate, acuminate, ciliate." Linn. *Style* bifid. All the ſpecies are natives of Southern Africa.

Obſerv. La Marck, in the letter-preſs to his plates, has retained all the ſpecies under *brunia*; and, in contradiction to his own deſcriptions publiſhed ſome time before in the alphabetical part, has made a ſuperior calyx part of its eſſential character. The germ of B. *nodiflora*, he now ſays, is certainly inferior; and it muſt be confeſſed, that he is in ſome degree ſupported by the high authority of Gærtner, who has figured the fruit of this ſpecies, and calls it ſemi-inferior: but through a ſtrange inattention in the eſſential character, he deſcribes the fruit as a capſule; in the general one, as a dry berry. He divides the genus into two families: 1. With globular heads of flowers deſtitute of leaves, compriſing the ſpecies deſcribed above, except the two introduced by Willdenow, and the *ciliata* of Linnæus, which he appears to have diſcarded. 2. With heads ſurrounded by a lengthened, coloured calyx, forming a kind of involucre. This family conſiſts of the two ſpecies, which have been referred to *ſtaavia*.

Profeſſor Martyn has inſerted under *brunia*, only the *lanuginoſa*, *ciliata*, and *verticillata*; aſſigning to *leviſanus*, the *nodiflora*, *paleacea*, and *abrotanoides*, as well as the *radiata*, and *glutinoſa*, which conſtitute the *ſtaavia* of Willdenow, Ventenat, and Roſe. See Staavia.

Brunia *leviſanus*. See Protea *Leviſanus*.

Brunia *uniflora*. See Diosma *Cupreſſina*.

BRUNIQUEL, in *Geography*, a town of France, in the department of the Lot, and diſtrict of Montauban; 8 leagues S.S.E. of Cahors.

BRUNN, John-James, in *Biography*, was born at Baſle in the year 1591. Applying to the ſtudy of medicine, he was admitted to the degree of doctor in that faculty in 1615; and in ſucceſſion was advanced to the rank of profeſſor in anatomy, botany, and in the practice of medicine. To the laſt he was appointed in the year 1529, and he continued performing the duties of theſe offices to the time of his death, in 1660. His work is "Syſtema Materiæ Medicæ, continens Medicamentorum ſimplicium et compoſitorum Seriem ac Sylvam, Methodo medendi ac Formulis Remediorum præſcribendis accommodatum," Baſ. 1630, 8vo. The work has been many times re-publiſhed; and in 1680, with notes, by Gerard Blaſius. Hall. Bib. Med. Eloy. Dict. Hiſt.

Brunn, in *Geography*, a town of Germany, in the archduchy of Auſtria, 4 miles W. of Horn.—Alſo, a town of the ſame archduchy, 8 miles W. of Ebenfurth.

Brunn, or Briun, a city and royal borough, the ſecond town in rank, and the firſt in commerce, of Moravia, the capital of a circle of the ſame name, ſituated at the conflux of the rivers Schwartſchaw and Surtawa. Although this city is not large, it is well-built and populous; the number of inhabitants being eſtimated at 18,000. It has conſiderable manufactures of cloth, velvets, and pluſh. The diets of the ſtate are held here, alternately with Olmutz. It is defended by a ſtrong fortreſs called "Spilberg," erected on an eminence near the town, at the foot of which ſtand two cloiſters of nuns, and an hoſpital of the knights of

Malta. The Pruſſians laid ſiege to this fortreſs in 1742, but were obliged to abandon the enterpriſe. In the town are ſix cloiſters, the biſhop's palace, a collegiate church, and a college of Jeſuits. The cloiſter of Auguſtine hermits is famous for an image of the virgin Mary, pretended to have been made by St. Luke, and a foundation for young ladies. Brunn is diſtant about 32 miles S.W. of Olmutz, 100 S.E. of Prague, and 156 S.E. of Dreſden. N. lat. 49° 10′. E. long. 16° 15′.

Brunn, a circle of Moravia, bounded on the north by Bohemia, on the eaſt by the circle of Olmutz and Hradiſh, on the ſouth by Auſtria, and on the weſt by the circle of Iglau and Znaym. In this circle are many iron-mines and forges, medicinal ſprings, quarries of marble, glaſs-houſes, and alum-works. It is ſaid to contain 70 towns, and above 20,781 houſes. The capital is Brunn.

BRUNNEA, in *Entomology*, a name given to a ſpecies of Musca, that is entirely of a brown colour. Linn. This is a native of Europe.

Brunnea, an Eaſt Indian ſpecies of Veſpa of the larger kinds. The prevailing colour is dull, ferruginous; firſt and ſecond ſegment black at the baſe. Fabr.

The legs and antennæ of this inſect are ferruginous.

Brunnea, a ſpecies of Phalæna, having brown wings, with a large tranſverſe yellow ſpot in the middle; margin cheſnut brown. This is of the *Noctua* family, and inhabits Germany.

Brunnea, a ſpecies of Chryſomela, of a ſmall ſize, that inhabits New Holland. It is teſtaceous, with the ſuture of the elytra, and a ſmall line in the middle, fuſcous. Fabr., &c.

Brunnea, in *Natural Hiſtory*, a ſpecies of Planaria, of an oblong ſhape, and brown colour, with a longitudinal black line. Müll. Hiſt. Verm. Its habitat unknown. This is nearly allied to *nigra*, another ſpecies of Planaria.

BRUNNEARIA, in *Entomology*, a ſpecies of Phalæna (*Geometra*), the wings of which are deep yellow, with a black margin above, and two black ſtreaks beneath. This is a native of Italy.

BRUNNEATA, a ſpecies of Phalæna (*Geometra*), with ferruginous wings, and four abrupt brown bands. Inhabits Upſal. Borgſtr. Inſ.

BRUNNEN, in *Geography*, a populous village of Swiſſerland, in the canton of Schweitz, ſituate in the midſt of a bay formed by a branch of the lake Lucern, or lake of the four cantons; celebrated for the treaty concluded in 1315, between Uri, Schweitz, and Underwalden, which gave birth to the Helvetic confederacy. It was again diſtinguiſhed in April 1798, by being the place where deputies from the cantons of Uri, Schweitz, Underwalden, and Glarus, unanimouſly determined to maintain their independence, and to reſiſt the innovations of the French. Brunnen is ſeparated from Schweitz by a pleaſant and fertile plain, laid out in meadows, and planted with fruit trees, and diſtant from it about 2½ miles S.W. N. lat. 46° 56′. E. long. 8° 26′.

BRUNNEOLUS, in *Entomology*, a Linnæan ſpecies of Ichneumon, peculiar to Europe. The pervading colour is black; abdomen and legs reddiſh; antennæ reddiſh, with the baſe black; poſterior brown.

BRUNNER, Balthazar, in *Biography*, born at Hall, in Saxony, the middle of the 16th century; addicting himſelf to the ſtudy of medicine, was ſent to the univerſity at Erford, and afterwards to Leipſic, where he was admitted to the degree of doctor in that faculty. He then travelled over part of Italy, France, and England, and having paſſed three years in thoſe countries, returned to Hall, where he acquired much reputation for his learning and for his ſkill in his profeſſion. He died in 1604. A few years after his death, were publiſhed, collected from his papers, "Conſilia medica, ſummo ſtudio collecta et reviſa, a Laurentio Hoffman, Halæ Sax." 1617, 4to. "De Scorbuto Tractatus duo," 8vo.: ſince printed with the treatiſe of Eugalenus, written in a methodical manner, and giving an accurate account of the diſeaſe. Among other remedies, he recommends the juice of water-creſſes taken in milk-whey. Though attached to chemiſtry, in which he was allowed to be expert, he left no written documents on that ſubject. Haller Bib. Med. Eloy. Dict. Hiſt.

Brunner, John Conrad, a Swiſs phyſician and anatomiſt of eminence, was born at Dieſſenhofen, the 16th of January 1653. After paſſing through the uſual ſchool education, he was ſent, at the age of 16, to Straſburg, where, applying aſſiduouſly to the ſtudy of phyſic and anatomy, he was created doctor in medicine in 1672. For his theſis, he gave the anatomy of a child with two heads, which it was his fortune to meet with. He now went to Paris, and attended the ſchools and hoſpitals there, with ſuch aſſiduity, as to attract the notice, and gain him the intimacy of Dionis and du Verny, who were preſent while he made the experiments on the pancreas, which enabled him, ſome years after, to publiſh a more accurate deſcription of that viſcus, than had been before given, under the title of "Experimenta nova circa Pancreas. Accedit Diatribe de Lympha et genuino Pancreatis uſu," 8vo. 1682, Leidæ. He proved that the fluid ſecreted by the pancreas is not neceſſary to digeſtion, and that an animal may live after that viſcus is taken out of the body, having tried the experiment upon a dog, which perfectly recovered from the operation. On quitting Paris, he came to London, and was introduced to Dr. Willis, Lower, and Henry Oldenburg, ſecretary to the royal ſociety. From England, he paſſed to Holland, and ſtudied for ſome months at Leyden. At Amſterdam, he viſited Swammerdam and Ruyſch, with whom he afterwards correſponded. Returning home, he was made profeſſor of medicine at Heidelberg, and firſt phyſician to the elector palatine, who conferred on him the title of baron de Brunn in Hamerſtein. About the ſame time, he married one of the daughters of the celebrated Wepfer, and was elected honorary member of the academia naturæ curioſ. in return for ſome ingenious diſſertations which he had communicated to them. In 1688, he publiſhed "Diſſertatio Anatomica de Glandula pituitaria," 4to. Heidelb. From this time, he became in ſuch great requeſt, for his knowledge and ſucceſs in practice, that he was, in ſucceſſion, conſulted by moſt of the princes in Germany. Among others, in 1720, he was ſent for to Hanover, to attend the prince of Wales, afterwards king George II. In 1715, he publiſhed at Heidelberg, "Glandula Duodeni ſeu Pancreas ſecundum detectum," 4to. which was only an improved edition of his "De Glandulis in Duodeno Inteſtino detectis," which had been before twice printed. There are ſome other leſſer works, the titles and accounts of which are given by Haller, in his Bib. Anat. In the later edition of Wepfer's works are given diſſections by our author, of the heads of ſome perſons who died of apoplexy, of whom he had had the care. Though early afflicted with gravel, and in the latter part of his life with gout, he continued to attend to the calls of his patients, though living a great diſtance from his reſidence. When, in his 74th year, he went in great haſte to Munich, to attend the elector Maximilian Emanuel, on his return, he was ſeized with a fever, which, in a few days, put an end to his exiſtence, on the 2d of October 1727. Haller Bib. Anat. Eloy. Dict. Hiſt.

BRUNNEUM, in *Entomology*, a ſpecies of Hister, deſcribed as a Swediſh inſect. The colour is ferruginous; wing-caſes ſomewhat ſtriated. Linn.

BRUNNEUS, a ſpecies of Curculio of a large ſize, found at the Cape of Good Hope. The general colour is brown; beak fuſcous; wing-caſes teſtaceous, and ſtreaked with dots. Fabr. Gmel. &c.

Brunneus, a ſpecies of Ptinus of a brown colour, with the wing-caſes very ſmooth, with pubeſcent ſtriæ. Linn. &c. A native of Europe.

Brunneus, a ſpecies of Cryptocephalus, found in Europe, that is deſcribed by Linnæus. The colour is brown; abdomen fuſcous; wing-caſes ſmooth.

Brunneus, a ſpecies of Elater that inhabits Europe. The thorax is rufous, in the middle black; wing-caſes and body ferruginous. Linn.

Brunneus, a ſpecies of Cimex, of an ovate form, and brown colour, except the wings, which are white. This is found in Europe, and is deſcribed as above by Linnæus.

Brunneus, a ſpecies of Asilus, the thorax of which is cinereous, lineated with black; abdomen and legs brown, with black ſpots. Fabr. This kind is a native of Cayenne. The head is whitiſh; ſnout black; antennæ brown; abdomen cylindrical; wings white; legs at the tips black.

Brunneus, in *Zoology* a ſpecies of Coluber of a brown colour, ſpotted with white; abdomen whitiſh. Boddaert. This is ſerpens cobellas of Seba.

BRUNNICHAND, in *Entomology*, a ſmall inſect of the *Tortrix* tribe of Phalæna, named in compliment to Brunnich. This ſpecies, which inhabits Germany, and the north of Europe, has the wings of a fuſcous colour, with a common rhomboid white ſpot on the back. Fabr.

BRUNNICHELLA, a ſpecies of Phalæna of the *Tinea* tribe, named after Brunnich. It is of a black colour with three violaceous bands. Vandelli, &c. Inhabits Europe.

BRUNNIPES, a ſpecies of Tenebrio, the ſize of which is ſmall. It is of a black colour, very ſmooth and gloſſy; wing-caſes ſtriated; antennæ and legs ferruginous. Fabr. &c. Inhabits Europe.

Brunnipes, a ſpecies of Staphylinus of a black colour, with the legs and antennæ at the baſe and tip ferruginous. Inhabits Europe.

BRUNNUS, a ſpecies of Cerambyx of a brown colour; thorax armed with three ſpines; wing-caſes obtuſe, with two obſcure elevated ſtriæ; antennæ compreſſed and ſhort. Inhabits North America. Gmel. &c. *Obſ.* The Cerambyx penſylvanicus of Degeer.

Brunnus, a ſpecies of Sphinx, (*Seſia*), the wings of which are brown, and without ſpots; poſterior ones emarginate. A native of Surinam. Fabr.

BRUNO, Giordano, in *Biography*, a bold innovating philoſopher of the 16th century, was born at Nola, in the kingdom of Naples; and, though he firſt entered among the Dominicans, the freedom of his religious opinions rendered it expedient for him to ſeek a refuge at Geneva in 1582. But the rigid ſyſtem of orthodoxy, inculcated by Calvin and Beza, obliged him to leave this city, after a reſidence in it of two years, and to return to Paris; where, notwithſtanding his oppoſition to the Ariſtotelian philoſophy, he was allowed, for ſome time, to deliver public lectures in the univerſity. In 1586, he defended for three days, at a ſolemn diſputation, opinions concerning nature and the world, which he publiſhed in 1588, at Wittemberg, under the title of "Acrotiſmus, ſeu Rationes Articulorum Phyſicorum adverſus Peripateticos Pariſiis propoſitorum." Before this time, he took a journey to England, and formed an acquaintance with ſir Fulk Greville, and ſir Philip Sydney, to the latter of whom he dedicated two works. From Paris he removed to Wittemberg, and made an open profeſſion of Lutheraniſm. After a temporary reſidence at Helmſtadt, and at Frankfort, where he ſuperintended an edition of his numerous works, printed by John Wechel, he ſettled at Padua; but being arreſted, he was firſt confined in the priſon of the inquiſition at Venice, and afterwards at Rome. After two years' confinement, he was condemned by the inquiſitorial tribunal, and burnt alive in February 1600. The crimes that have been alledged againſt him, were his Lutheran hereſy, his deſertion from the Dominicans, and his atheiſtical opinions. Bruno was of a paradoxical turn of mind, and of a confident ſanguine diſpoſition; fond of advancing novel and fanciful ſentiments, but confuſed and obſcure in his method of explaining them. Bayle and La Croze have charged him with founding his philoſophy on the principles of Spinoza; but, in reality, he attempted to unite the ancient emanative and atomic ſyſtems. In his works are found obſcure hints of the vortices of Des Cartes, the atoms of Gaſſendi, the optimiſm of Leibnitz, and the celeſtial phyſics of Copernicus; but his ſuggeſtions on theſe topics are very darkly and inaccurately expreſſed; and he ſeems to have been more diſtinguiſhed by his bold attack of ancient errors, than by his introduction and eſtabliſhment of new truths. One of his moſt famous works is "Spaccio della Beſtia triomphante," or the demolition of the triumphant beaſt; Lond. 1584, a work ſatyrizing many received ſyſtems of religion, and charged with advancing atheiſtical opinions. Beſides ſeveral philoſophical and theological writings, he was the author of an Italian comedy in proſe, entitled "Il Candelajo," and of ſome Latin poetry.

Toland's Poſthumous works, vol. i. Gen. Dict. Brucker's Hiſt. Philoſ. by Enfield, vol. ii. Spectator, N° 389. vol. v.

Bruno, a ſaint of the Roman church, and founder of the order of Carthuſians, was born at Cologne about the year 1040, and ſtudied at Rheims, where he became a canon and regent of the public ſchool. Compelled to leave Rheims by the tyranny of Manaſſes, the archbiſhop, he determined, in 1080, to retire from the world to the deſert of Chartreux, where, in 1084, he founded his new order. After reſiding in this ſolitude for 6 years, he was ſummoned to Rome by pope Urban II., who had been his ſcholar at Rheims; but diſguſted with the manners of the capital, he withdrew to Calabria; and declining to accept the archbiſhopric of Reggio, he obtained from count Roger a foreſt, with its adjacent diſtrict, named la Torre, near Squillace, where he founded the ſecond houſe of his order. In this retreat he died in 1101; and he was canonized by pope Leo X. in 1514. His works, which are enumerated by Cave, have been confounded with thoſe of his contemporary St. Bruno of Segni, who flouriſhed about the year 1087, and died in 1125. The principal treatiſes of Bruno, the Carthuſian, are, a "Commentary on the Pſalms," and another "On St. Paul's Epiſtles," beſides ſeveral collections of ſermons, and two letters to his diſciples. A collection of his works was printed at Paris in 1524, and at Cologne in 1611, 3 vols. fol. Cave's Hiſt. Lit. vol. ii. p. 158.

For an account of the order eſtabliſhed by Bruno, ſee Carthusians.

Bruno, James Pancrace, born at Altdorf on the 23d of January 1629, after receiving a liberal education in his own country was ſent to Padua, where he was admitted doctor in medicine in 1653. Returning thence, he ſettled at Nuremburg, and ſoon became diſtinguiſhed for ſuperior learning and abilities. In 1662, he was invited to accept the chair of profeſſor in medicine by the univerſity at Altdorf, his native city, and he continued in that office to the time of his death, October 13, 1709. Beſides his commentaries upon many parts of the works of Hippocrates, and his edition of the Iſagoge medica of Gaſpar Hoffman, Bruno publiſhed "Oratio de Vita, Moribus, et Scriptis Gaſp. Hoffmanni, Lipſi." 1664, 12mo. "Dogmata Medicinæ generalia in ordinem noviter redacta," Norib. 1670, 8vo. "Caſtellus renovatus, hoc eſt, Lexicon Medicum correctum et amplificatum," 1682, 4to. The additions to this work are numerous and valuable, and the volume, ſo improved, has been frequently reprinted. "Mantiſſa Nomenclaturæ Medicæ hexaglottæ; Vocabula Latina Ordine alphabetico, cum annexis Arabicis, Hebræis, Græcis, Gallicis et Italicis præponentis," Noribergæ 1682, 4to. "Epitome, Elementa veræ Medicinæ complectens," Alt. 1696, 8vo. "Monita et poriſmata Medicinæ miſcellanea," ibid. 1698. 4to. His ſon Frederic James, born at Altdorf in 1665, following the ſteps of his father, was made doctor in medicine at the univerſity there, in 1697, and practiſed in that art with conſiderable credit, to the time of his death, 1727. Haller Bib. Eloy. Dict. Hiſt.

Bruno, in *Geography*, a river of Italy, which runs into the lake of Caſtiglione, near Buriano, in the duchy of Tuſcany.

BRUNOR, Buffon, in *Ornithology*. See Loxia Bicolor, or orange-bellied groſbeak.

BRUNOY, in *Geography*, a town of France, in the department of the Seine and Oiſe, and diſtrict of Corbeil; 2 leagues N. of Corbeil.

BRUNSBERG, a town of Germany, in the circle of Weſtphalia, belonging to the order of Corvey; 4 miles W.N.W. of Hoxter.

BRUNSBUTTLE, a ſea-port town of Germany, ſubject to Denmark, in the circle of Lower Saxony, and duchy of Holſtein, on the north ſide of the Elbe; 40 miles N.W. of Hamburg. N. lat. 44° 30'. E. long. 8° 42'.

BRUNSFELS, Otho, in *Biography*, a celebrated reſtorer and improver of botany, was born at Mentz, the end of the 15th century. He received his education at Solmes, a town in that neighbourhood; and having taken the degree of maſter of arts, entered a monaſtery of Carthuſians at Mentz, where he reſided ſome years. Embracing at length the tenets of Luther, he left the monaſtery, and went to Straſburg, and opened a ſchool for the inſtruction of youth. In this employment, undertaken to procure a maintenance, he continued nine years, reading, during the vacations, the Greek, Arabic, and Latin writers on medicine; in which he became ſo expert, that, in the year 1531, he was enabled to publiſh new editions of the works of Serapion, Averhoes, and Rhazes. He had the preceding year taken his degree of doctor in medicine at Baſle. Soon after he ſettled at Berlin, and was made phyſician to that city, where he died on the 10th of November 1534. Whilſt at Straſburg, he publiſhed two ſmall tracts to facilitate the ſtudy of grammar to children, annotations on the goſpels, and on the acts of the apoſtles, and an anſwer to Eraſmus's Spongia, in defence of Hutten. The following are the principal of his botanical and medical works. "Catalogus illuſtrium Medicorum," 4to. 1530. "Herbarum vivæ icones, ad Naturæ imitationem, ſumma cum diligentia et artificio efficiatæ, cum effectibus earundem," fol. vol. iii. 1530, 1531, 1536. The plates are much commended by Haller, who, on account of this work, ranks the author among the reſtorers of botany. "Theſes, ſeu communes loci totius Medicinæ, etiam de uſu Pharmacorum, Argentinæ," 1522, 8vo. "Onomaſticon Medicinæ, nomina continens omnium ſtirpium, &c. Argent." 1534. folio. For his great ſkill in medicine, he was thought deſerving of the following:

"Te nato, defuncta fere medicina revixit:
Pæonii vindex nominis unus eras."

Adami Vitæ Medic. German. Haller Bib. Botan.

BRUNSFELSIA, in *Botany*. See Brunfelsia.

BRUNSTATT, in *Geography*, a town of France, in the department of the Upper Rhine, and diſtrict of Altkirch; 7 miles N. of Altkirch.

BRUNSTEIN, a mountainous bailiwick of Germany, in the principality of Calenberg, lying on the Leine and Ruhme, and comprehending 6 villages. The chief trade of the inhabitants conſiſts of thread and linen.

BRUNSVIGIA (Heiſt.), in *Botany*. See Amaryllis Orientalis.

BRUNSWICK, *duchy of*, in *Geography*, is a diſtrict of Germany, in the circle of Lower Saxony, bounded on the north by the duchy of Lunenburg, on the eaſt, by the duchy of Magdeburg and the principalities of Anhalt and Halberſtadt, on the ſouth, by Thuringia and Heſſe, and on the weſt, by the principality of Minden, and county of Lippe, or by the circle of Weſtphalia, from which it is ſeparated by the river Weſer. Its capital is Brunſwick. The territory of the duke of Brunſwick, commonly called the principality of Wolfenbuttle, from a leſs important town than Brunſwick, includes 1472 ſquare miles, and 170,000, or, as ſome ſay, 185,000 inhabitants. It is fertile in corn and paſtures, and abounds with mines and game: it has alſo ſeveral medicinal ſprings and extenſive foreſts; but its manufactures and commerce, which were once flouriſhing, have ſuſtained conſiderable injury by the German wars of the 17th century. Its principal rivers are the Weſer, Ocker, Leyne, Ilmenau, and Viper. The territories belonging to the houſe of Brunſwick extend far beyond the limits of this duchy, and comprehend, beſides Wolfenbuttle, Grubenhagen, Calenberg, and Gottingen, the principalities and duchies of Lunenburg, Hanover, Zell, Ultzen, Danneberg, Marpuy, Gifſhorn, Eimbeck, and Hamelen, which ſee reſpectively.

Brunswick, a city of Germany, in the circle of Lower Saxony, and diſtrict of Wolfenbuttle. It is the capital of the preceding duchy, and the reſidence of the prince, to whom it belongs, and who is uſually ſtyled the "duke of Brunſwick and Wolfenbuttle." The town is ſituated in a plain, on the banks of the Ocker, which enters the plain by two branches, but within it, ſeparates into a greater number of ſtreams, that unite again at its iſſue out of the city. It is accordingly divided into five different parts, called the Old Town, the New Town, the Hagen or Burg, the Old Wieck, and the Sack. The form of the town is nearly ſquare, and its extent about 2 miles in circumference. The houſes in general are old, and conſtructed of wood; but many new buildings have been lately erected, and the city is every day acquiring freſh beauty. It has ſeveral churches, one of which is for the accommodation of the Lutheran worſhip, which is the prevalent religion of the place, and others appropriated to the French and Dutch calviniſts, and to the Roman catholics. Among the public buildings, we may reckon the prince's palace, to which is annexed a library, containing a curious collection of ſcarce and curious bibles, or fragments of bibles in ſeveral languages, to the number of above 1000 volumes; the academy for martial exerciſes; the armoury; the Caroline college founded by duke Charles, and erected in 1745; the opera-houſe; the play-houſe; the "packhofe," where all goods, imported or exported, are rated and taxed; the council-houſe, where the magiſtrates meet; the "Autorkof," aſſigned in 1681 to the foreign dealers, at the fair, for the ſecurity and more convenient ſale of their goods; the mint; the work-houſe or houſe of correction; the orphan-houſe, which, ſince the year 1753, has had annexed to it a Latin ſchool, with a printing-houſe and book-ſhop; two gymnaſiums, with an anatomy and ſurgery ſchool, founded by duke Charles, and opened in 1751; a college for the ſtudy of phyſic, inſtituted in 1757; a large lazaretto; and a hoſpital. With reſpect to the academy at Brunſwick, Dr. Moore informs us, (View of Society and Manners in France, &c. vol. ii. p. 70.) that it has been new modelled, and the plan of education improved, by the attention, and under the patronage of the hereditary prince. Students now reſort to it from many parts of Germany, and ſome even from Great Britain. Such of them as are intended for a military life, will find advantages in this academy, ſuperior to thoſe that may be had at any other place on the continent. They will here be under the protection of a family partial to the Britiſh nation; every branch of ſcience is taught by maſters of known abilities; the young ſtudents will ſee garriſon duty regularly performed, and may, by the intereſt of the prince, obtain liberty to attend the reviews of the Pruſſian troops at Magdeburg and Berlin: and they will have few temptations to expence in a town, where they can ſee no examples of extravagance; they will have few opportunities of diſſipation, and none of groſs debauchery.

The reigning prince of Brunſwick is ſaid to adminiſter the finances of the ſtate with wiſe frugality, and to diminiſh the debts, in which, at his acceſſion to the duchy, he found himſelf involved. As the father of his people, he employs his power to increaſe their proſperity and happineſs. Many of their former burdens are already diminiſhed, and property is not heavily taxed, and the finances are daily advancing to a better condition.

Brunſwick is ſtrongly fortified; and on the ramparts it has a mortar-piece of braſs, 10½ feet in length, and 9 feet 2 inches in circumference, and weighing 1800 quintals, which will carry a ball of 730lbs. weight to the diſtance of 33,000 paces, and throw a bomb of 1000 lbs. weight; but it requires 52 lbs. of powder for a charge. Although fortifications have occaſioned much calamity to many towns in Germany, by attracting the vengeance of enemies, ſo that many of them are now diſmantled; thoſe of Brunſwick were of ſingular utility in 1761, when they preſerved the town from being pillaged, and afforded prince Frederick an opportunity of gaining ſignal honour. When the town was beſieged by a body of 20,000 men under prince Xavier of Saxony, prince Ferdinand detached 5000 of his army under his nephew Frederick, aſſiſted by general Luckner, with order to make an attempt for raiſing the ſiege, and ſaving his native city. The prince diſpatched a meſſenger to the governor, with a letter wrapped round a bullet, and which he was inſtructed to ſwallow, in caſe of his being taken by the enemy. However, he had the good fortune to make his way into the town; and the prince, in the middle of the night ſpecified in the letter to the governor, fell ſuddenly on the enemy's cavalry, who, unſuſpicious of his approach, were encamped careleſsly within a mile of the town; and having by this ſudden movement diſperſed the cavalry, he produced an alarm among the infantry, which occaſioned their retreat. Early in the morning, the young prince entered Brunſwick, amidſt the acclamations of his fellow-citizens, whom he had relieved from the horrors of a ſiege. On the arrival of his brother, the hereditary prince, at his father's palace, he found Frederick at table, entertaining the French officers, who had been taken the preceding night.

Brunſwick was formerly one of the Hanſe towns, and governed as a republic: but when it became a fortified city, its commerce was injured, and its population diminiſhed. Its number of inhabitants is now eſtimated at about 22,000; the peaſants are ſober and laborious, and as they are robuſt, though clowniſh, they make good ſoldiers. They have ſeveral manufactures in the town; but one of the chief employments of the people is ſpinning wool and flax: and they are provided with an excellent inſtitution for ſupplying the poor with theſe means of ſubſiſtence. This inſtitution furniſhes all who chooſe to apply with the materials, and they are paid for their labour on the ſame terms with thoſe of the manufacturers; and yet, what ariſes from the ſale of the yarn and thread, is ſufficient to defray all the expences of the eſtabliſhment. Adults perform this work at their own habitations; but 200 children work every day in the houſe, and are there alſo inſtructed in reading and writing. The firſt ſpinning wheels are ſaid to have been invented in this place in 1530, by a ſtatuary, named Jurgen. The ſtrong beer of Brunſwick, called "Mum," after the name of its inventor, Chriſtian Mummen, is exported to various parts of Europe, and even Aſia. Brunſwick has two conſiderable fairs every year.

Brunſwick appears to have been in being ſo early as the 8th century. In 775, it is ſaid, that the emperor Charles the Great came to the Ocker, which runs through "Brunonis vicum," or Brunſwick; and it is alſo related, that in the beginning of the 8th century, biſhop Swibert with his train of followers went to Saxony, and coming to a large town called Brunſwick, preached there, and converted great numbers. Hence, it has been thought not improbable, that the place was founded by duke Bruno, ſon-in-law to duke Witikind, if not by his father duke Bruno of Enjern. Bruno I. margrave of Saxony, is ſaid to have enlarged and embelliſhed this city A.D. 955. In the time of Henry the Lion, it conſiſted of five precincts, within its ſeparate wall; but this duke, in 1177, incloſed them all within one wall. In 1314, the burghers of Brunſwick were diſcharged from all kinds of villainage; and in 1345, the citizens by mortgage acquired the government of the town, and arrogated other immunities, which were the occaſion of ſevere and tedious conteſts between them and the duke. At length, in 1671, duke Rodolphus Auguſtus made himſelf maſter of the town after a long ſiege, by means of the cannon which had been lent him by the inhabitants for another purpoſe; and he erected a citadel to ſecure their ſubjection. In 1757, it was taken by the French, but evacuated in the following year: and an unſucceſsful attempt was made againſt it in 1761. Brunſwick is diſtant 7 miles N. of Wolfenbuttle; in N. lat. 52° 15′ 43′. E. long. 10° 35′.

BRUNSWICK, *Family of*, in *Hiſtory*. This ancient and illuſtrious houſe is deſcended from the marquis of Azo of Eſte, who was proprietor of the Milaneſe, the ſtate of Genoa, and ſeveral other countries in Lombardy. About the year 1040 he married Cunigunda, or Cuniza, heireſs of the firſt Welphs, or Guelfs, earls of Altorf, in Suabia; and their ſon Welph, or Guelf, obtained the duchy of Bavaria of Henry IV. in 1071. His grandſon, Henry duke of Bavaria, acquired Brunſwick along with Saxony. In 1195, William, ſon of Henry the Lion, and of Matilda, or Maude, eldeſt daughter of king Henry II. of England, in whom was united the Anglo-Saxon and Norman blood, acquired Lunenburg; and his ſon Otho, in 1235, was the firſt duke of Brunſwick and Lunenburg. His ſon, Albert I. in 1252, was ſurnamed the Great. Magnus II. in 1368, was ſurnamed Torquatus, from a large chain which he wore. His ſon, Bernard, retained Lunenburg; while Brunſwick paſſed to Henry the ſecond's ſon, and continued in the lines of his deſcendants till the year 1634. The dukes of Lunenburg acquired ſome ſmall portions of adjacent territory. Henry being put to the ban of the empire, in 1521, was ſucceeded by his ſon, who only aſſumed the title of duke of Zell, a title which continued till the reign of George William, in 1665. In 1617, Chriſtian, duke of Zell, obtained poſſeſſion of Grubenhagen. In 1692, George William, duke of Zell, conſented that the electorate, inſtituted in favour of his family, ſhould be conferred on his younger brother, as he had no male heir. Erneſt died in 1698, having married Sophia, daughter of Elizabeth, daughter of James I. of England. He was ſucceeded by his ſon George Lewis, elector, in 1698, and king of England, in 1714, who, in 1715, added to his family the duchy of Bremen, with the principality of Verden. In 1727, he was ſucceeded in the Britiſh throne and electorate by his only ſon, George Auguſtus, or George II. from whom, in 1760, they devolved upon his grandſon, our preſent ſovereign, George III.

Brunswick *Lunenburg*, or *Luneburg*, in *Geography*, an electorate of Germany, the territories of which are chiefly ſituated in the circle of Lower Saxony, is frequently denominated, from its capital, the electorate of Hanover; which ſee. See alſo Luneburg.

Brunswick, *Wolfenbuttle*. See *Duchy of* Brunswick and Wolfenbuttle.

Brunswick, *New*, a province in the northern part of Nova Scotia, according to the diviſion of 1784, the other retaining the original name, lies on the north weſt of the bay of Fundy, and is bounded on the ſouth by the north ſhores of this bay, and by the river Miſſiquaſh to its ſource, and from thence by a due eaſt line to Verte bay, and on the weſt by a line running due north from the main ſource of St. Croix river, in Paſſamaquoddy, to the high lands, which divide the ſtreams that fall into the river St. Lawrence, and the bay of Fundy; and from thence by the ſouthern boundary of the colony of Quebec, until it touches the ſea-ſhore at the weſtern extremity of the bay of Chaleur; then following the courſe of the ſea-ſhore to the bay of Verte, in the ſtraits of Northumberland, until it meets the termination of the eaſtern line, produced from the ſource of the Miſſiquaſh already mentioned, including all the iſlands within the ſaid limits. The towns of this province are the capital Fredericktown, ſeated about 90 miles from the æſtuary of the river St. John, St. Ann's almoſt oppoſite to it, St. Andrew's and St. John's. In 1784, another town, near the mouth of the river St. John, was erected, under the appellation of New Brunſwick, into the metropolis of the province ſo called. There are ſome other ſettlements near the bay of Fundy, with a fort called Howe. A tribe of ſavages, called the Marechites, inhabits this province, and they are eſtimated at 140 fighting men. It has two conſiderable bays, ſeveral lakes, among which the grand lake is 30 miles long and about 9 broad; and its chief rivers are St. John's, Magegadavik, or eaſtern river, Dickweſſet, St. Croix, Merrimichi, Petitcodiac, and Memram-Cook, all of which, except the three laſt, diſcharge themſelves into Paſſamaquoddy bay. St. John's river is navigable for veſſels of 50 tons about 60 miles, and for boats about 200; the tide flowing about 80. It opens into a vaſt extent of country, in which are rich vales and meadows under cultivation; and the upland is in general well-timbered; the trees being pine and ſpruce, hemlock, and hard-wood, principally beech, birch, maple, and ſome oak. The pines on St. John's river are the largeſt in Britiſh America, and afford a conſiderable ſupply of maſts for the royal navy. The fiſh are ſalmon, baſs, and ſturgeon. This river affords a common and near route to Quebec. The river St. Croix ſeparates New Brunſwick from the province of Maine, belonging to the United States. The rivers which fall into Paſſamaquoddy bay have on their banks meadows and vales, and muſt formerly have been covered with a large growth of timber, as the remains of large trunks are ſtill viſible. The great chain of the Appalachian mountains paſſes on the north-weſt of this province, probably terminating at the gulf of St. Lawrence. The chief products of this province are timber and fiſh. See Nova Scotia.

Brunswick, a county of America, in Virginia, lying between Nottaway and Meherrin rivers; is about 38 miles long, and 35 broad, and contains 6917 free inhabitants, and 9422 ſlaves.—Alſo, a maritime county, in the diſtrict of Wilmington, North Carolina, containing 4110 inhabitants, of whom 1614 are ſlaves. This is the moſt ſoutherly county of the ſtate, having South Carolina on the ſouth-weſt, and bounded by cape Fear river on the eaſt. Smithville is the ſeat of juſtice.—Alſo, the chief town in the above county, ſeated on the weſt ſide of cape Fear river; and formerly the beſt built in the whole ſtate, and carrying on the moſt extenſive trade. It lies about 17 miles S.W. of Wilmington, and was formerly the ſeat of government; but in 1780 it was conſumed by the Britiſh forces, and has now only three or four houſes, and an elegant church in ruins. N. lat. 34° 2'. W. long. 78° 12'.—Alſo, a townſhip in Eſſex county, Vermont, on the weſt bank of Connecticut river, oppoſite to Stratford, in New Hampſhire.—Alſo, a city in Middleſex county, New Jerſey, ſituate on the ſouth-weſt bank of Rariton river, in a low ſituation, under a hill riſing to the weſt of the town. It has about 300 houſes, and about 3000 inhabitants, one-half of whom conſiſts of Dutch. This town has a conſiderable inland trade, and over the river, oppoſite to this city, is one of the moſt elegant and expenſive bridges in America. It is 18 miles N.E. from Princetown, 60 N.E. from Philadelphia, and 35 S.W. from New York. N. lat. 40° 30'. W. long. 74° 30'.—Alſo, a poſt town of Cumberland county, in the diſtrict of Maine, lying 30 miles N.E. of Portland, and of Boſton 151, on the ſouth ſide of Merry-meeting bay, and partly on the ſouth-weſtern ſide of Androſcoggin river. It contains 1809 inhabitants; and is the ſcite of Bowdoin college. N. lat. 43° 52'. W. long. 69° 58.—Alſo, the chief town of Glynn county, in Georgia, ſituated at the mouth of Turtle river, where it empties into St. Simon's ſound. N. lat. 31° 10'. The harbour is ſafe and ſpacious enough to contain a large fleet. The town is regularly laid out, but not finiſhed. From its advantageous ſituation, and the fertility of the back country, it promiſes to be one of the moſt commercial and flouriſhing places in the ſtate. It is diſtant 19 miles S. of Darien, 60 S.S.W. of Savannah, and 110 S.E. of Louiſville. N. lat. 31° 14'. W. long. 81° 45'.

Brunswick *Houſe*, one of the Hudſon-bay company's ſettlements, ſituate on Mooſe river, half way from its mouth; S.W. from James's bay, and N.E. from Lake Superior. N. lat. 50° 13'. W. long. 83° 31'.

Brunswick-*green*, *Friezland-green*. This colour is largely uſed for the bluiſh greens of paper-hangings, and other coarſe kinds of painting in water colours. It is prepared in the following way. Take a barrel, or any other cloſe veſſel of wood or earthen ware, and fill it half full of filings or clippings of copper; then pour in a ſaturated ſolution of ſal-ammoniac, ſufficient to moiſten the whole thoroughly: put on the cover of the veſſel, and ſet it in a warm place. In a few hours the copper will begin to decompoſe the ſal-ammoniac, and form muriat of copper, ammonia being at the ſame time diſengaged. The muriated oxyd abſorbs a conſiderable quantity of moiſture, on which account it is requiſite from time to time to add freſh portions of diſſolved ſal-ammoniac, till, in the courſe of a few weeks, nearly the whole of the copper is converted into oxyd. The contents of the barrel are now to be emptied and paſſed through a ſieve in a tub of water, by which the unoxydated copper will be ſeparated from the pigment, which will paſs into the water.' This being well waſhed and ſlowly dried in the ſhade, is pure Brunſwick green. Three parts muriat of ammonia, and two of copper yield ſix parts of the green. It is rarely, however, that pure Brunſwick green is met with, as it is largely adulterated with ceruſſe.

BRUNTRUT, or Pruntrut, in *Geography*. See Porentru.

BRUNUS, in *Biography*, an Italian phyſician and ſurgeon of great name in his time, flouriſhed in the early part of the 14th century, and is ſaid to have been intimate with Petrarch. He was author of "Chirurgia Magna et Parva," publiſhed at Venice in 1490 in a collection of chirurgical treatiſes, fol. which has been ſeveral times reprinted. The Chirurgia is a compilation, taken from the Greek and Arabian phyſicians, principally from Albucaſis, from whom he deſcribes the operation of cutting for the ſtone in the bladder. In the fiſtula of the anus he recommends opening the ſinuſes, without which, we cannot, he ſays, be certain of curing. Haller. Bib. Chirurg. Eloy Dict. Hiſt.

BRUNUSEE, in *Geography*, a town of Germany, in the duchy of Stiria; 12 miles W. of Rackeſburg.

BRUSA, a town of Turkey, in Aſia, built by Pruſias, the friend of Hannibal. It is ſtill extenſive and populous, but the ſtreets are narrow. Many houſes are built ſo much againſt the hill, that the upper rooms open into the gardens. They reckon 70 moſques, but moſt of them are neglected, or abſolutely in ruins. The police is eccleſiaſtic. The bezeſtan is ample, and one of the khans is ſingularly commodious. The ſale of raw and manufactured ſilks conſtitutes its commerce.

BRUSA-Sorci, in *Biography*. See Riccio.

BRUSCH, in *Geography*, a river of France, which runs into the Rhine at Straſburg. It forms a canal by means of ſluices from Molſheim.

BRUSCIO, a town of Swiſſerland, in the Valteline, ſituated near a river which diſcharges itſelf into the Adda. N. lat. 46° 9'. E. long. 10° 3'.

BRUSCUS, in *Botany*. Ger. See Ruscus.

BRUSEGANA, in *Geography*, a town of Italy, in the Paduan; 4 miles W.N.W. of Padua.

BRUSH, an aſſemblage of hairs or hog's briſtles, faſtened in the holes of a wooden handle or board, pierced for that purpoſe, and ſerving to cleanſe divers bodies by rubbing therewith. Of bruſhes there are a round, a flat, or ſquare bruſh, cloaths-bruſh, head-bruſh, horſe bruſh, beard-bruſh, comb-bruſh, weavers-bruſh, and the like. The manner of making bruſhes, is by folding the hair or briſtle in two, and bringing it by means of a pack-thread, or wire, engaged in the fold, through the holes wherewith the wood is pierced all over, or faſtened therein with glue or pitch. When the holes are thus all filled, they cut the ends of the hair to make the ſurface even.

Brush, *Painter's*. See Pencil.

Brush, *Sheermen's*, is made of wild boars' briſtles, and ſerves to lay the wool or nap of cloth, after ſheering it for the laſt time.

The fleſh-bruſh is of uſe in medicine, eſpecially in caſe of rheumatiſms, and certain cutaneous diſorders. See Friction.

The bruſh is alſo applied to the ſoles of the feet of new-born infants, when fainting, to find whether they be alive or dead.

Brush, in *Electricity*, denotes the luminous appearance of the electric matter, iſſuing in a parcel of diverging rays, from a point. Beccaria aſcribes this appearance to the force with which the electric fluid, going out of a point, divides the contiguous air, and paſſes through it to that which is more remote. See *Plate, Electricity*. See Star.

Brushes, *wire*, are uſed by ſilver-ſmiths and gilders, for ſcrubbing ſilver, copper, or braſs pieces, in order to the gilding of them.

There is a method of dying or colouring leather, performed by only rubbing the colour of the ſkin with a bruſh. This the French leather-guilders called *brouſſure;* being the loweſt of all the ſorts of dye allowed by their ſtatutes.

Brush *of a fox*, among *Sportſmen*, ſignifies his drag or tail, the tip or end of which is called the chape.

Brush *iron-ore*, ſignifies a kind of ore full of *ſtriæ*, reſembling the hair of a bruſh.

Brush is alſo uſed in ſpeaking of a ſmall thicket or coppice. In this ſenſe, the word is formed from the middle age Latin *bruſcia*, *bruſcus*, which ſignifies the ſame.

Brush-*wood* denotes ſmaller ſlender wood or ſpray. See Browse.

BRUSHING. Among *Jockies*, a bruſhing gallop denotes a briſk one: a horſe ſhould have his bruſhing gallop in a morning before watering.

BRUSINSKOI, in *Geography*, an iſland of Ruſſia, in the lake of Ouezkoe; 40 miles S.E. of Petrovadſkoi.

BRUSKAU, a town of Poland, in the palatinate of Braclaw; 48 miles N.N.W. of Braclaw.

BRUSLEE Island, lies on the coaſt of France, in the Engliſh channel, below the Seven Iſlands, and Lanion haven and river.

BRUSQUET, Le, a town of France, in the department of the Lower Alps, and diſtrict of Digne; 5 miles N.N.E. of Digne.

BRUSSELS, in Latin *Bruxellæ*, in Flemiſh *Bruxellas*, a large and handſome town, annexed to France, being the chief place of the department de la Dyle. It was formerly the capital city of Brabant, and of the Auſtrian Netherlands; where the governor-general held his court with all the ſplendour of royalty. It is ſituated partly on a hill and partly in a vale, on the banks of the river Senne, which runs through the town. Various etymologies are given to the name of Bruſſels; it has been derived from *Brugge-Senne*, bridge on the Senne; from *Brugſel*, hermitage bridge; from *Broyſell*, a neſt of ſwans, on account of the number of thoſe birds found in the adjacent river and marſhes; and from *Broſſailles*, buſhes, it being formerly ſurrounded by woods. It is highly probable that the ancient foreſt of Ardennes extended to this place; and that the preſent foreſt de Soigne was part of it. Bruſſels was not exiſting in the 7th century. It owes its origin to a little iſland formed by two branches of the river, on which St. Gery, or Gaugerie, biſhop of Cambray, built a chapel and preached the goſpel to the heathens who were ſeated in the vicinity; he died in 619. In 1044, the town, being conſiderably enlarged, was ſurrounded by a wall, and fortified with towers, of which traces are ſtill remaining. A ſecond, more extenſive incloſure, took place in 1379, and now exiſts, but the town extends itſelf far beyond; ſince many villages are become its ſuburbs, by a continuity of buildings and ſtreets. Bruſſels is ornamented by many handſome public ſtructures. The principal church is collegiate, dedicated to St. Gudule, and was built in 1047, but rebuilt between 1226 and 1273. The palace diſplays conſiderable taſte and magnificence, and formerly contained one of the moſt beautiful chapels in Europe, which eſcaped the great conflagration in 1731, but was pulled down in 1777 to make way for the erection of the new ſquare called Place Royale. The town-houſe, or guildhall, was built in 1442; it has a ſteeple 364 feet high, ſurmounted by a coloſſal ſtatue, 17 feet high, of St. Michael with the dragon under his feet, which turning on a pivot, acts as a vane. The park in the upper town (anciently part of the foreſt de Soigne,) is a beautiful promenade, and has a public pleaſure-garden in one of its groves. The green walk near the canal has a pleaſing appearance, being two miles in length. Beſides the place royale, Bruſſels is ornamented with ſeven ſquares or market-places. The principal are the great market, the place St. Michael, the corn-market, the petit ſablon, and the grand ſablon, where a beautiful fountain was erected by lord Ayleſbury. In this town are twenty public fountains, adorned with ſtatues, &c. the moſt remarkable is the manneke pitt, on which is repreſented a child in braſs, which is ſo admirably executed that it has excited the notice of many connoiſſeurs, and particularly the elector palatine in 1698, and Lewis XV. in 1747. The population of Bruſſels is eſtimated at 80,000. In Tinſeau's Statiſtical View of France, its four parts or cantons are repreſented as containing 66,297 inhabitants, and including 7½ kiliometres, and one commune. It had formerly conſiderable trade in the manufacture of camlet and tapeſtry, which is now on the decline: but its lace is ſtill in high eſtimation, as the moſt beautiful in the world. Its carpets are alſo noted all over Europe. This town has ſuffered frequently by war: it was bombarded in 1695 by mareſchal Villeroy; and beſieged, in 1708, by the elector of Bavaria, and in 1746, by mareſchal Saxe. It was taken by the French in the ſummer of 1794. Charles II. king of England, and his brother the duke of York, made Bruſſels their occaſional reſidence during the uſurpation of Cromwell. This town has given birth to many celebrated men: among others are, Duqueſnoy, Vanhelmont, St. Aldegonde, Breugh Champaigne, D'Artois, and other painters. Bruſſels is 21 miles S. of Antwerp, 26 S.E. of Ghent, and 141 N. by E. of Paris. N. lat. 48° 51′. E. long. 4° 28′.

Bruſſels, Roger *of*, in *Biography*. See Vander Weyde.

BRUSSOW, in *Geography*, a town of Germany, in the circle of Upper Saxony, and Ucker Mark of Brandenburg; 12 miles N.E of Prenzlow.

BRUSTERVORT Point is ſituate in the Baltic ſea; 3 leagues N. by W. from Koningſburg deep, and 16 leagues N E. by N. from Memel deep.

BRUSZILOW, a town of Poland, in the palatinate of Kiov; 46 miles W. of Kiov.

BRUTA, in *Zoology*, is the ſecond order of animals in the Mammalia claſs, the character of which conſiſts in having no fore teeth in either jaw. The genera of this claſs are *bradypus*, *myrmecophaga*, *manis*, *daſypus*, *rhinoceros*, *elephas*, and *trichecus*; which ſee.

BRUTE, or Beast, a term generally applied to quadrupeds, and alſo to other animals, and implying inferiority of intellect.

Among brutes, the monkey kind, both in the external ſhape and internal ſtructure, bear the neareſt reſemblance to man. In the monkey-kind, the higheſt and the moſt nearly approaching the likeneſs of man, is the orang-outang, or *homo ſylveſtris*.

Philoſophers are much divided about the eſſential characters of brutes. Some define brute as an animal not riſible, or a living creature incapable of laughter; others, a mute animal, or a living thing deſtitute of ſpeech; the Peripatetics, an animal endowed with a ſenſitive power, but without a rational one. The Platoniſts allow reaſon and underſtanding, as well as ſenſe to brutes, though in a degree leſs pure and refined than that of men. Indeed, the generality of the ancient philoſophers thought that brutes reaſoned: this, among the heathens, was the opinion of Anaxagoras, Porphyry, Celſus, Galen, Plutarch, as well as Plato and others. Plutarch has a dialogue under this title, that brutes uſe reaſon (Op. vol. ii. p. 988.) The whole Pythagorean ſect ſhould alſo be of the ſame ſentiment, becauſe the metempſychoſis imports, that human ſouls paſs into the bodies of brutes. The Stoics alſo holding that the Divine Being is diffuſed through all creatures, were neceſſitated to maintain the ſouls of brutes to be divine, and, conſequently, that they had reaſon. Among Chriſtians, Lactantius, and the whole body of Manichees and Gnoſtics, aſſert the ſame. Can any perſon, ſays Lactantius (Inſt. Div. l. iii. c. 10.), deny that brutes have reaſon, when they often outwit man himſelf? He allows every thing to brutes which men have, except a ſenſe of religion. Some Sceptics have aſcribed religion and virtue to brutes; and they ſay that Solomon (Eccleſ. iii. 18, 19.) ſeems to aſſures us, that the ſouls of men have no pre-eminence over thoſe of brutes. Sextus Empiricus, in particular (Pyrrhon, l. i. c. 13.), inſtitutes a compariſon between dogs and the human kind. The former excel the latter as to ſenſe; they have a quicker ſcent, by which they purſue beaſts that are unſeen; they diſcover them ſooner by the eye, and their hearing is more acute. Accordingly it is alleged, that a dog is not deſtitute of the faculty of reaſoning, from the famous inſtance mentioned by Chryſippus, who obſerved that a hound coming into a road which ſeparates into three directions, makes choice of the third by virtue of an induction or ſyllogiſm; becauſe after having ſcented the two ways by which the beaſt did not paſs, he runs ſtraight upon the third without ſcenting it; where the reaſon is obvious: the beaſt paſſed either that way, or that way, or this way; but he paſſed neither that way nor that way, and therefore this way. See Stanley's Hiſt. Philoſ. p. 780. That a dog is poſſeſſed of what they call internal reaſon, appears, from his chooſing things convenient, flying the hurtful, purſuing his food, and running away from the whip; and when wounded or ſick, acting prudently, as the circumſtances of his caſe, and his abilities and opportunities dictate. It has alſo been argued, though certainly with no great appearance of reaſon, that we owe the diſcovery of many medicines, and the invention of many arts, to brutes. Thus, it is ſaid, that from the ſpider man learned the art of weaving; from the ſwallow he borrowed architecture; from the gooſe ſwimming, from fiſh navigation; from ſilk-worms ſewing; to omit many other inſtances of the like kind alleged by Plutarch (De Solert. Animal. Op. tom. ii. p. 974.), Voſſius (De Orig. Idol. l. iii. c. 27.), and others. How many actions of brutes, it is ſaid, are to be obſerved, which cannot be accounted for without the firſt proceſſes of reaſoning? If we ſay, that dogs, by long habits and force of rewards and puniſhment, may be taught many things, do not this docility, and remembrance of blows, argue memory, fear, and deſire, which cannot ſubſiſt without knowledge, ſenſe, pleaſure, and pain? And if brutes have knowledge, it is allowed that they muſt alſo have judgment and reaſon. The Carteſians, on the other hand, maintain, that brutes are mere machines, wholly deſtitute not only of reaſon and thought, but of every degree of perception: and that they perform their various functions as mere "automata," excited to motion only by means of animal ſpirits, which act upon the nerves and muſcles. This extravagant and paradoxical opinion Des Cartes has been ſuſpected of borrowing from Gomez Pereira, a Spaniſh phyſician, who employed 30 years in compoſing a treatiſe, which he entitles "Antoniana Margarita," from the Chriſtian names of his father and mother, publiſhed in 1554; but it is more probable, that it was a concluſion originally deduced from his notion of the animal ſpirits in the economy of human nature. However this be, the notion was revived by Des Cartes, and further aſſerted by Le Grand, d'Armaſon, and others of his followers, who were led to adopt this doctrine from that principle of his philoſophy, that the eſſence of the ſoul conſiſts in thinking; ſo that, ſuppoſing knowledge and thought in brutes, they muſt have ſouls like thoſe of men; the ſenſitive ſoul of the Ariſtotelians being held by him a mere chimera. But Pereira does not appear to have been the firſt inventor of the doctrine; ſomething like it having been held by ſome of the ancients, as we find from Plutarch (De Placit. Phil. l. v. c. 20.), and St. Auguſtin (de Quant. Animæ Paſch. Invent. Nov. Antiq. c. 3.) Des Cartes was probably led to adopt this opinion of the mere mechaniſm of brutes in order to obviate two great objections; one againſt the immortality of the ſouls of brutes, if they were allowed to have any; and the other againſt the goodneſs of God, in ſuffering creatures who had never ſinned to be obnoxious to ſo many evils. In favour of this opinion it has been argued, that many human actions are merely mechanical, being performed without the perception of the agent, and any direction from his will; and theſe muſt be aſcribed to the impreſſion of objects, and the original diſpoſition of the machine, in which the influence of the ſoul has no concern: ſo that in ſuch circumſtances often occurring with regard to actions that are habitual, human beings are no better than automata. 2. Some natural movements of the body are ſo involuntary, that we cannot reſtrain them, and ſeem to depend altogether on mechaniſm. 3. To this mechaniſm we are alſo to attribute thoſe likings and antipathies for and againſt particular objects, which precede knowledge and diſcrimination, and which in advanced life baffle and controul reaſon; and they furniſh ſtriking proofs of that irreſiſtible influence which certain objects have on the human frame. 4. Our paſſions are known to depend on the motion of the blood, and the reciprocal impreſſions cauſed by the animal ſpirits between the heart and brain, that are ſo intimately connected by their nerves; and hence it is inferred, that if effects of this kind may be produced by ſuch ſimple mechanical means as the mere increaſe of motion in the blood, without any direction of the will, we need not wonder that the actions of brutes ſhould reſult merely from a refined mechaniſm, without thought or perception. 5. It has been further urged, that human ingenuity has produced many ſurpriſing phenomena by mechanical means, ſuch as are exhibited in automata of human contrivances; and as the mechaniſm of the body of the meaneſt animal muſt infinitely ſurpaſs that of the moſt curious machines of this nature, the effects produced by it muſt be proportionably more ſurpriſing. In reply to theſe arguments, it has been alleged, that they only prove, if we allow their full force, the poſſibility of the caſe, that brutes are mere machines, or that the power of God might produce certain actions by mechaniſm, but not that he has actually done ſo; and, moreover, that if they be admitted, they will prove too much, or that human beings may be mere machines, and not only irrational but inſenſible too. To the Carteſian hypotheſis it has been more directly objected, that the phenomena of perception, foreſight, memory, volition, and ſpontaneous exertion, and of various paſſions of joy, ſorrow, fear, anger, gratitude, love, &c. exhibited by brutes, are inexplicable by any mechanical principles and laws. We have the ſame evidence in many caſes of the ſenſibility of brutes which we have of that of mankind; and that they are alſo endowed with the powers of reflection and reaſoning, as well as with ſenſation. If beaſts were automata or machines, they could have no perception of pleaſure or pain, and conſequently no cruelty could be exerciſed towards them; which is contrary to the common ſenſe and obſervation of mankind, and ſeemingly contrary to thoſe declarations of ſcripture, which obviouſly intimate that they are the objects of ſevere and of mild and merciful treatment. Prov. xii. 10. Ray's Wiſdom of God in the Creation, p. 56.

The late profeſſor Bergmann, in an ingenious treatiſe, written in German, and entitled "Inauguralfrage, &c." or "Reſearches deſigned to ſhew what the Brute Animals certainly *are not*, and, alſo, what they probably *are*, &c." 8vo. Mentz, 1785, has produced a variety of arguments in order to prove that brutes are not machines. But if they are not mere machines, what are they? manifeſtly ſenſitive beings, with an immaterial principle; and thinking, or reaſoning beings to a *certain degree*. In certain claſſes of animals this appears evident to the profeſſor, who ſeems to have obſerved, with great ſagacity and attention, their various operations and proceedings, their ways and means, &c. He thinks it impoſſible to deduce this variety of action in any animals (if we except thoſe of the loweſt claſſes in the gradation of intelligence) from a general and uniform inſtinct: for they accommodate their operations to times and circumſtances. They combine: they chooſe the favourable moment; they avail themſelves of the occaſion; and ſeem to receive inſtruction by experience. Many of their operations announce reflection; the bird repairs a ſhattered neſt, inſtead of conſtructing, inſtinctively, a new one; the hen, who has been robbed of her eggs, changes her place, in order to lay the remainder with more ſecurity; the cat diſcovers both care and artifice in concealing her kittens. Again, it is evident that, on many occaſions, animals know their faults and miſtakes, and correct them: they ſometimes contrive the moſt ingenious methods of obtaining their ends; and when one method fails, have recourſe to another; and they have, without doubt, a kind of language for the mutual communication of their ideas. How is all this to be accounted for, (ſays Bergmann,) unleſs we ſuppoſe them endowed with the power of perceiving, thinking, remembering, comparing, and judging? They have theſe powers, indeed, in a degree, inferior to that in which they are poſſeſſed by the human ſpecies, and form claſſes below them in the graduated ſcale of intelligent beings. But though it ſeems to him unreaſonable to exclude them from the place which the principles of ſound philoſophy, and facts aſcertained by conſtant obſervation, aſſign to them in the great and diverſified ſphere of life, ſenſation, and intelligence; he does not, however, conſider them as beings, whoſe actions are directed to *moral* ends, nor, conſequently, as accountable and proper ſubjects for *reward* or *puniſhment* in a future world.

That brutes poſſeſs reflection and ſentiment, and are ſuſceptible of the kind as well as the iraſcible paſſions, independently of ſexual attachment and natural affection, is evident from the numerous inſtances of affection and gratitude daily obſervable in different animals, particularly the dog. Of theſe, and other ſentiments, ſuch as pride, and even a ſenſe of glory, the elephant exhibits proofs equally ſurpriſing and unqueſtionable; for which we refer to the article ELEPHANT. The brute creation manifeſts alſo a wonderful ſpirit of ſociality, independent of ſexual attachment. It is well known that horſes, which are perfectly quiet in company, cannot be kept by any fences in a field by themſelves; oxen and cows will not fatten by themſelves, but neglect the fineſt paſture that is not recommended by ſociety; ſheep conſtantly flock together. Nor is a propenſity to aſſociate reſtricted to animals of the ſame kind and ſize. Inſtances to this purpoſe are enumerated in White's Natural Hiſtory of Selborne, to which we refer the reader. From theſe inſtances we may conclude that Milton, when he puts the following ſentiment in the mouth of Adam, ſeems to have been miſtaken:

"Much leſs can bird with beaſt, or fiſh with fowl
So well converſe, nor with the ox the ape."

Mr. Locke (Eſſay, vol. i. p. 120, 148.) maintains, that the ſouls of brutes are wholly material: that they do not poſſeſs the power of abſtraction; and that the having of *general ideas* is that which puts a perfect diſtinction between men and brutes. Accordingly, he ſuppoſes that they have no uſe of words, or any general ſigns by which to expreſs their ideas. It has, however, been a ſubject of diſpute, whether brute animals have any language intelligible to one another. Some have pretended, that they have a kind of jargon, by which they can make a mutual communication of their ſentiments; and Porphyry relates, that Tireſias and Apollonius Tyanæus underſtood this language. There is at leaſt a ſimilitude of ſpeech in brutes; for they know each other by their voices, and have their ſigns whereby they expreſs anger, joy, and other paſſions. Thus, a dog aſſaults in one ſtrain, fawns in another, howls in another, and cries when beaten in another. To us, indeed, their ſpeech, if it may be ſo called, appears rude and inarticulate; but perhaps ours, though underſtood by them, is the ſame in their ears. But if the voice of brutes be unintelligible to us, does not the ſame hold of the language of our own kind, till we have been inſtructed in it? And the language of foreigners, what is it but a confuſed unmeaning heap of ſounds? Laughter, as the ſign of mirth and joy, has been thought peculiar to men; and yet we ſee ſomewhat reſembling it in brutes, ſignified by the motion of their ears, eyes, mouth, and tongues.

Dr. Hartley (ſee his Obſervations of Man, p. 239.) has inveſtigated the intellectual faculties of brutes, and applied his theory of vibrations and aſſociation in accounting for the inferiority of brutes to mankind, with regard to intellectual capacities. He aſcribes the difference ſubſiſting between them to the following circumſtances, which he has taken occaſion to illuſtrate on the principles of his theory. The firſt of theſe is the ſmall proportionate ſize of their brains, whence brutes have a far leſs variety of ideas and intellectual affections than men. The ſecond cauſe of this difference is the imperfection of the matter of their brains, whereby it is leſs fitted for retaining a large number of miniatures, and combining them by aſſociation, than man's. The third cauſe is their want of words, and ſuch like ſymbols; fourthly, the inſtinctive powers which they bring into the world with them, or which riſe up from internal cauſes, as they advance towards adult age, is another cauſe of this difference; and, fifthly, it is partly owing to the difference between the external impreſſions made on the brute creation, and on mankind. This ingenious writer ſuppoſes, with Des Cartes, that all the motions of brutes are conducted by mere mechaniſm; yet he does not ſuppoſe them to be deſtitute of perception; but that they have this in a manner analogous to that which takes place in us; and that it is ſubjected to the ſame mechanical laws as the motions. He adds, that it ought always to be remembered, in ſpeaking on this ſubject, that brutes have more reaſon than they can ſhow, from their want of words, from our inattention, and from our ignorance of the import of thoſe ſymbols, which they do uſe in giving intimations to one another, and to us.

"As brutes," ſays Dr. Prieſtley, (Diſquiſitions on Matter and Spirit, p. 238, &c.) "have the ſame external ſenſes that we have, they have, of courſe, all the ſame inlets to ideas that we have; and though, on account of their wanting a ſufficient *quantity of brain*, perhaps chiefly, the combination and aſſociation of their ideas cannot be ſo complex as ours, and therefore they cannot make ſo great a progreſs in intellectual improvements, they muſt neceſſarily have, *in kind*, every faculty that we are poſſeſſed of. Alſo, ſince they evidently have memory, paſſions, will, and judgment too, as their actions demonſtrate, they muſt, of courſe, have the faculty that we call *abſtraction*, as well as the reſt; though, not having the uſe of words, they cannot communicate their ideas to us. They muſt, at leaſt, have a natural capacity for what is called *abſtraction*; it being nothing more than a particular caſe of the *aſſociation of ideas*, of which, in general, they are certainly poſſeſſed as well as ourſelves. Beſides, if dogs had no general or abſtract ideas, but only ſuch as were appropriated to particular *individual objects*, they could never be taught to diſtinguiſh a *man* as ſuch, a *hare* as ſuch, or a *partridge* as ſuch, &c. But their actions ſhew, that they may be trained to catch hares, ſet partridges, or *birds* in general, and even attack *men*, as well as to diſtinguiſh their own maſter, and the ſervants of the family in which they live. Whether brutes will ſurvive the grave we cannot tell. This depends upon other conſiderations than their being capable of reaſon and reflection. If the reſurrection be properly *miraculous*, and entirely out of all the eſtabliſhed laws of nature, it will appear probable that brutes have no ſhare in it; ſince we know of no declaration that God has made to that purpoſe, and they can have no expectation of any ſuch thing. But if the reſurrection be, in fact, *within the proper courſe of nature*, extenſively conſidered, and conſequently there be ſomething remaining of every organized body that death does not deſtroy, there will be reaſon to conclude that they will be benefited by it as well as ourſelves. And the great miſery to which ſome of them are expoſed in this life may incline us to think, that a merciful and juſt God will make them ſome recompence for it hereafter. He is *their* maker and father as well as *ours*. But with reſpect to this queſtion, we have no ſufficient *data* from which to argue, and therefore muſt acquieſce in our utter ignorance, ſatisfied that the maker and judge of all will do what is right."

It has been, till very lately, a general opinion in the Chriſtian world, that the ſouls of brutes were wholly material, and therefore mortal. The great lord Bacon entertained this opinion. "Anima ſenſibilis," ſays he, "ſive brutorum, planè ſubſtantia corporea cenſenda eſt." The celebrated anatomiſt Willis alſo profeſſed the ſame. The ſentiments of Malebranche ſeem to have coincided with thoſe of Des Cartes; for he ſays, that they eat without pleaſure, and cry without pain; that they fear nothing, know nothing; and if they act in ſuch a manner as to indicate underſtanding, it is becauſe God, having made them to preſerve them, has formed their bodies ſo as mechanically to avoid whatever might hurt them. The learned Gale maintains at large (Philoſophia Generalis, p. 323.) that the ſenſitive ſoul is corporeal; and the celebrated Dr. Cudworth has revived the long-exploded notion of the *ſoul of the world*, from which the ſouls of brutes iſſue, and to which he ſuppoſes they return, without retaining their ſeparate conſciouſneſs after death. However, in order to ſolve the difficulty reſpecting their ſtate and that of mankind, he ſuppoſes the immortality of the ſoul not to follow neceſſarily from its immateriality, but from the appointment of God, But in accounting for the difference in the divine diſpenſations to them and us, he conceives them to be deſtitute of morality and liberty. Some ſpeak, however, as if they held brutes to be moral beings, and under the obligation of the law of nature. Ulpian, and other civil lawyers, are ſuppoſed to be of this opinion; as alſo the Stoics, from whoſe ſchool this tenet is ſaid to have been firſt borrowed. It is alleged, on the other hand, that brutes *cannot* be ſubject to a law, unleſs they have a power of knowing him that made the law, judging whether we have a right to command them, and what is contained in the law, that they may direct themſelves accordingly; which ſeem all to be things out of the reach of brutes. But Ulpian's definition of the law of nature, "jus naturale eſt quod natura omnia animalia docuit," when fairly interpreted, does not imply that brutes have reaſon and reflection, but may be underſtood of that natural inſtinct common to man and brutes, by which they are impelled to ſelf-defence, propagation of their ſpecies, &c.

We ſhall cloſe this article with briefly noticing the fanciful opinion of father Bougeant, who has laboured to prove, both from reaſon and ſcripture, that the ſpirits of brute creatures are devils. As ſo many guilty victims of divine vengeance, they are ſentenced to endure a variety of evils. By nature, he ſays, they are extremely vicious; but God, by irrecoverably reprobating them, has, at the ſame time, diveſted them of their liberty, ſo that they can be no longer criminal: an hypotheſis equally abſurd in its principles and in its conſequences.

BRUTIA, in *Entomology*, a ſpecies of Mutilla that inhabits Calabria. Its character is thus deſcribed: colour black; thorax rufous; abdomen with ſix ſilvery white ſpots, and belt of the ſame. Petagn. Inſ. Cal.

Brutia, in the *Medical Writings of the Ancients*, a term uſed to denote the fatteſt and moſt reſinous kinds of pitch, and ſuch as was the moſt proper for making the oil of pitch, called "oleum picinum." The term is derived from Brutia, or Brutium, the name of the country where it was procured. Plin. N. H. l. xv. c. 7.

BRUTIAN Forest, in *Ancient Geography*, now called *La Sila*, an extenſive foreſt of Brutium or Calabria, which covered a ſurface of 200 miles in circumference; and from which Hiero, king of Syracuſe, and after him the Romans, drew their maſts and other timber for ſhipping. The ſame foreſt is ſtill covered with large woods of pines or firs; but from theſe extenſive woods little benefit is derived, except in turpentine and fuel.

BRUTIUM, one of the two peninſulas of that part of Italy, anciently known by the name of Magna Græcia, which extended to the ſtraits that ſeparated Sicily from Italy; the other peninſula being called Calabria. Part of it towards the north is now diſtinguiſhed by the appellation of Calabria Citra, and the more ſoutherly part is denominated Calabria Ultra. It was inhabited by the Brutii, who were ſlaves of Lucania, that had revolted from their maſters, taken up arms, and rendered themſelves independent. Some derive their name from a Lucanian term, denoting "Rebels:" but others with greater probability ſeek the etymology of their name in the nature and productions of their ſoil. Accordingly, as moſt of their trees were reſinous, they find in the oriental term "Brata," or, as the Syrians write it, "Bruta," the origin of the appellation Brutii. Calabria, it is likewiſe alleged, has a ſimilar derivation from "Calab," ſignifying pitch or reſin. Their principal rivers were, on the weſt, Lamatis and Metaurus, and on the eaſt, Cæcinus, Targines, Neoethur, and Cratis. Their chief towns, in the weſt, from north to ſouth, were Pandoſia, Conventia, Hipponium, and Rhegium; and on the eaſt, from ſouth to north, Locri, Scylacium, Croton, Petilia, and Roſcianum. The "Brutium promontorium" was that promontory ſince called "Cabo de Scilio."

BRUTO, John-Michael, in *Biography*, a polite Italian ſcholar, was born at Venice about the year 1515; and in the courſe of his vagrant life, he reſided for ſome time at Padua, afterwards viſited Florence, Lucca, and other Italian cities, paſſed ſome years at Lyons in France, and travelled into England and Spain. In 1574 he accepted an invitation from Stephen Battori, prince of Tranſylvania, by whom he was employed in writing the hiſtory of that country; and after his advancement to the crown of Poland, accompanied him to Cracow. On the death of this prince, he removed to Vienna, and became hiſtoriographer to the emperor Rodolph II. He cloſed a wandering life, in the courſe of which, notwithſtanding the patronage he enjoyed, he never roſe above indigence, in Tranſylvania, in 1594. As a writer, he had the reputation of learning and merit; and, though he contemned the affectation of the Ciceronians, his Latinity was pure and elegant. His critical works compriſed notes on Horace, Cæſar, and Cicero; but his hiſtorical writings are the moſt valuable. His Florentine hiſtory, extending to the death of Lorenzo de Medici, is conſidered as one of the fineſt monuments of the age. It was printed at Lyons in 1562, under the title of "Florentinæ Hiſtoriæ, libri viii. priores." As it was conformable to the political conduct of the houſe of Medici, it was induſtriouſly ſuppreſſed, and few copies of it now remain. His elegant tract "De Origine Venetiarum," his treatiſe "De Inſtauratione Italiæ," and his "Hiſtory of Hungary," are preſerved in the imperial library at Vienna. Of his ſmaller printed works, compriſing orations, Latin letters, and two treatiſes, one on the manner of ſtudying hiſtory, and the other containing conjugal precepts, a new edition was printed at Berlin in 1698, 8vo. Bayle. Tiraboſchi.

BRUTOBRIA, or Brutopolis, in *Ancient Geography*, a town of Spain, in Bœtica, ſituate between the river Bœtis, and the country of the Tyritani or Turditani. Steph. Byz.

BRUTON, or Brewton, in *Geography*, is a pleaſant, well-built market-town in Somerſetſhire, England, ſituated 113 miles W. from London, and 12 S. from Frome, at the weſtern extremity of the foreſt of Selwood, and takes its name from the river Brew or Brue, which, riſing in that foreſt, paſſes through the town in its way to Glaſtonbury. The ſurrounding ſcenery is extremely intereſting: the vales are meadows, the declivities orchards, and the eminences ſheep-walks. The manor was once the property of ſir Maurice Berkeley, whoſe younger ſon John, as a reward for his ſervices to the royal cauſe, was created by Charles II. lord Berkeley of Stratton. The title became extinct in 1772, and the manor is now in the poſſeſſion of ſir Richard Colt Hoare, bart. of Stourhead in Wiltſhire. On this ſite was anciently an abbey, founded by St. Algar, earl of Cornwall. The town conſiſts principally of five ſtreets, in the centre of which is the market-place, where, till lately, ſtood a curious old hexagonal market croſs, ſupported by ſix pillars at the angles, and a larger one in the centre. The roof conſiſted wholly of the ribs of arches, which diverged from pillar to pillar, and were finely ornamented with ſculpture. This edifice was eighteen feet high, the top flat, and encompaſſed with a ſtone balluſtrade; it was built, as Leland informs us, by John Ely, the laſt abbot of Brewton. The market is on Saturday. In the High-ſtreet is a market-houſe, built by a ſubſcription of the farmers who frequented this market, upon land given them for that purpoſe by Hugh Saxey, eſq. who, from a low ſtation, was advanced to the poſt of auditor to queen Elizabeth. He died in 1620, poſſeſſed of ſeveral manors and eſtates in the counties of Somerſet and Glouceſter; which, in conformity to his intention, were ſettled in 1638 on twelve gentlemen of the county, for the erection and endowment of an hoſpital here for the maintenance of old men, women, and boys. The number now ſupported are eight men, ten women, and twelve boys; the latter are boarded, educated, and apprenticed; and the aged are comfortably provided for. The annual income belonging to this charity is about 2500*l*. In the court of the hoſpital is a ſtatue of the founder, with this inſcription:—"Hugh Saxey, eſq. founder of this hoſpital, auditor to queen Elizabeth, and king James." There is alſo a free-ſchool in the town, inſtituted by king Edward VI. and endowed by biſhop Fitzjames, and his brother ſir John, lord chief juſtice. Bruton conſiſts of 333 houſes, containing 1631 inhabitants, the greater part of whom are employed in agriculture: for though Leland tells us, that in his time, "Brewton was much occupied with making of clothe," yet at preſent the only manufacture is a little hoſiery, and ſilk reeling, at the latter of which three or four hundred young perſons are employed. The church, dedicated to St. Mary, is a large ſtructure, and has two quadrangular towers, one occupying the weſt end, and the other riſing from one ſide of the north aiſle. The latter ſeems to have been the original tower, but the former is the handſomeſt. The interior of the church is well ornamented, and contains a great number of monuments. Collinſon's Hiſtory of Somerſetſhire, vol. i. 4to. Maton's Tour through the Weſtern Counties, vol. ii. 8vo.

BRUTUS, or BRUTE, in *Biography*, the firſt king of Britain, according to the fabulous relation of Jeffry or Geoffrey of Monmouth. See BRITAIN.

BRUTUS, LUCIUS JUNIUS, the founder of the Roman republic, was the ſon of Marcus Junius, a wealthy patrician, who had married the daughter of Tarquin the Proud, with whom terminated the race of kings at Rome. The father and brother of Brutus were aſſaſſinated by order of this tyrant at the beginning of his reign; and Brutus himſelf eſcaped by feigning idiotiſm, whence it is ſaid the name of "Brutus" was derived. Under this character he was admitted into the royal palace, brought up with the king's ſons, and regarded merely as the object of their diverſion. On occaſion of a plague which broke out at Rome, Tarquin ſent his ſons to conſult the oracle of Delphi as to the cauſe and cure of the contagion; and Brutus alſo was ordered to accompany them for their amuſement. The princes prepared magnificent preſents for Apollo; but their companion is ſaid to have offered to the god an elder ſtick, encloſing a rod of gold, and ſerving as an emblem of himſelf. It is further reported, that when the princes made an inquiry, which of them ſhould be king of Rome, the oracle replied, that the government ſhould be reſerved for him who ſhould firſt kiſs his mother; and that they, interpreting this anſwer literally, agreed to kiſs their mother at the ſame time, and to reign jointly. But Brutus, interpreting the reſponſe of the oracle allegorically, fell down upon the earth, after his return to Italy, and kiſſed it, as the common mother of all mankind. Whatever may be thought of this ſtory, it is certain that the tragical death of Lucretia (ſee LUCRETIA) rouſed the dormant and diſguiſed ſpirit of Brutus; and that, having ſnatched the poignard out of her boſom, he vowed vengeance on the aggreſſors, and excited her relations to concur with him in retaliating on Tarquin and his family the diſhonour ſhe had ſuffered, and the lamentable event in which it had terminated. Accordingly they all bound themſelves by a ſolemn oath to execute their purpoſe, and agreed to follow the counſel and example of Brutus, who ſeemed now, by a kind of extraordinary inſpiration, to have recovered his faculties, and to poſſeſs talents, which had hitherto been concealed, fit for conducting their deliberations, and ſecuring their proſperous iſſue. The gates were immediately ſhut, the ſenate was aſſembled, and a public decree was propoſed and carried for baniſhing the king, annihilating the royal form of government, and eſtabliſhing a commonwealth. Brutus, and Collatinus, the huſband of Lucretia, were elected as the firſt chief magiſtrates of the ſtate, under the denominetion of "conſuls;" an important change in the conſtitution of the Roman government, which took place in the year of Rome 245, B.C. 509. This change, ſo haſtily concerted and accompliſhed, although it had obtained the concurrence of the ſenate, and of the people, excited an alarm amongſt thoſe who were attached to the old conſtitution, and particularly among the young nobility, who were zealous partizans of the dethroned and expelled ſovereign. In the number of the malcontents, were the two ſons of Brutus, and three nephews of Collatinus. Theſe were active in the conſpiracy formed againſt the new government; and they concurred with others in binding themſelves by a very ſolemn oath to murder the conſuls, and to re-eſtabliſh monarchy. Whilſt they were concerting meaſures for this purpoſe, the plot was diſcloſed by a ſlave to P. Valerius, a patriotic ſenator, and orders were iſſued for apprehending them. When the ſons of Brutus, venerated by the people as their deliverer, appeared before the conſular tribunal, the attendant multitude was ſeized with a general panic; and as ſoon as they were convicted of the crime alleged againſt them, the ſenators, in a kind of confuſed murmur, expreſſed their anxiety and wiſhes, by uttering the words, "Baniſh them! baniſh them!" Collatinus wept, and the ſtern patriot Valerius was ſilent. But the father, ſacrificing private feelings to the public good, and apprized of the neceſſity of ſuppreſſing rebellion by an awful example of puniſhment, with a ſteady countenance, and firm tone of voice, gave orders to the lictors to execute the law on his ſons. The diſtreſs of the aſſembled multitude on this ſolemn occaſion was ſuch as no words can deſcribe; mournful looks and ſecret groans pleaded for pity; and when the conſul ſeemed to pay no regard to their anxiety and tears, they loudly remonſtrated, and exclaimed with one voice, "We give them back to their country, and to their family." Neither the interceſſions of the people, nor the ſuppliant cries of the criminals, could alter the fixed purpoſe of Brutus, who witneſſed the execution of the ſentence; and having ſeen them ſtripped, beaten with rods, and beheaded, retired from the tribunal, to indulge, without doubt, thoſe parental feelings which the neceſſity of the times had induced him to diſguiſe and reſtrain. Of his conduct on this occaſion very different ſentiments have been entertained. Whilſt ſome have extolled, others have condemned it. But to the judgment of ſober reaſon, it exhibits a noble example of the triumph of public virtue over private affections; and the diſplay of it required that ſternneſs of temper, and thoſe peculiar ideas of the extent of parental authority, which ſeem to have characterized this ancient Roman. Collatinus was more flexible; and he wiſhed to ſpare his nephews, and to ſuppreſs the evidence which the ſlave Vindicius had adduced againſt them. The zeal of Valerius was rouſed; and whilſt the people were tumultuous, Brutus returned, and having again aſcended the tribunal, juſtified his own conduct, but referred the fate of the other criminals to the deciſion of the people, who concurred in condemning them, and ordering them for execution. Collatinus, however, accuſed by Brutus for his weakneſs, and want of patriotiſm, was obliged to renounce his authority, and to retire to Lavinium, where he lived privately to an advanced age. Upon his removal, Brutus, in order to obviate every ſuſpicion that it was his intention to govern ſingly, convoked the people by centuries in the Campus Martius, for the election of a new conſul; and Valerius, afterwards known by the name of "Poplicola," whoſe meritorious conduct in the diſcloſure of the conſpiracy has been already mentioned, was choſen to ſupply the vacancy. Some difference occurs in the relation of theſe events by Dionyſius of Halicarnaſſus, Livy, and Plutarch; but they all agree in the principal fact, reſpecting the conduct of Brutus towards his ſons. During the conſulate of Brutus and Valerius, Tarquin and his partizans made ſome vigorous efforts for regaining the throne of Rome; and, joined by the Veientes, the avowed enemies of the Romans, they advanced towards the city. But they were met by the conſuls at the head of the Roman forces; the command of the horſe being aſſumed by Brutus, and that of the infantry by Valerius; the horſe of the enemy, commanded by Arunx, one of Tarquin's ſons, came forward to the charge; and as the hoſtile armies approached each other, Arunx diſcovered Brutus attended by his lictors; and inflamed with reſentment, he exclaimed, "There is the enemy of my family, the uſurper of my father's throne." He then immediately advanced to a perſonal encounter, and Brutus flew to meet him. Actuated by paſſion, more than by cool courage, theſe two champions, neglecting the means of perſonal defence, transfixed each other with their ſpears, and at the ſame inſtant fell dead from their horſes. This happened in the year B. C. 509. The conflict thus commenced, terminated in a victory on the part of the Romans; and, as ſoon as it was decided, Valerius buried his colleague Brutus with great pomp, and gave Rome the firſt example of thoſe funeral orations, which it was afterwards cuſtomary to pronounce in commendation of their great men. The Roman matrons diſtinguiſhed themſelves on this occaſion; for, regarding Brutus as the avenger of the honour of their ſex, they mourned for him a whole year; and his ſtatue was afterwards erected in the capitol, with a naked ſword in his hand. The Romans venerated his memory, as that of the ſecond founder of their city, who had reſtored liberty to their country, cemented it by the blood of his own ſons, and died in defending it againſt an uſurper; and they conſidered him as having undergone more hardſhips and dangers in eſtabliſhing the commonwealth, than Romulus had done in firſt founding the kingdom. Virgil has nobly ſketched his hiſtory and praiſe in the following lines:

"Conſulis imperium hic primus ſævaſque ſecures
Accipiet: natoſque pater, nova bella moventes,
Ad pœnam pulchra pro libertate vocabit.
Infelix! utcumque ferent ea facta minores;
Vincit amor patriæ, laudumque immenſa cupido."
Æn. VI. 820.

"He firſt ſhall hold the conſul's ſway, and wield
The dreaded axes; he, a Roman ſire,
For thee, fair Liberty! his rebel ſons
Shall doom to public death. Unhappy man!
Howe'er poſterity the deed may judge,
His country's love, and boundleſs thirſt of praiſe,
Shall quell the father."

Dionyſ. Halic. lib. iv. and v. Livy, lib. i. and ii. Plut. in Poplicol. apud Op. T. i. p. 97, &c.

Brutus, Marcus Junius, an illuſtrious Roman, derived his name and deſcent, as ſome have ſaid, as well as his ſpirit, from L. J. Brutus, the ſubject of the preceding article. Cicero records this line of his deſcent, both in his ſpeeches and writings as a fact which was not doubted by any; and he often ſpeaks of the "image of old Brutus," which Marcus kept in his houſe among thoſe of his anceſtors; and Atticus, who was peculiarly curious in the antiquities of the Roman families, drew up Brutus's genealogy for him; and deduced his ſucceſſion from that ancient hero, in a direct line, through all the intermediate ages from father to ſon. Plutarch alſo, on the authority of Poſidonius the philoſopher, was of the ſame opinion. Other ancient writers, however, and particularly Dionyſius of Halicarnaſſus, allege ſeveral arguments againſt this deſcent, which ſeem to be very plauſible; and they ſay that the family of the patriot was extinct in the execution of his two ſons. However this be, M. J. Brutus was the ſon of a ſenator of the ſame name, who belonged to the party of Marius, and who was put to death for his ſeverities by Pompey at the ſurrender of Mutina. His mother was Servilia, the ſiſter of Cato, who diſgraced herſelf by her connection with Cæſar, which gave riſe to the opinion that Brutus was his natural ſon. But as he was born in the conſulſhip of L. Cornelius Cinna III. and Cn. Papirius Carbo I. A. U. 668, he was no more than 15 years younger than Cæſar himſelf; and this circumſtance fully confutes the vulgar ſtory of his being commonly believed to be Cæſar's ſon. As Brutus loſt his father, when he was young, the care of his education devolved on his uncle Cato: under whoſe direction it was conducted on that liberal plan which prevailed among Romans of diſtinction, after their connection with Greece. He ſtudied the language and philoſophy of that country; and he acquired, by means of his natural talents and ſedulous application, a diſtinguiſhed reputation for eloquence. At the bar and in private aſſemblies his rhetorical powers were exerciſed; he pleaded ſeveral cauſes of great importance, and he was allowed to be the moſt eloquent and learned of all the young men of rank and family at the period in which he lived. His manner of ſpeaking was correct, elegant, and judicious; though he wanted that force and copiouſneſs which are required in a conſummate orator. But he was principally delighted with the ſtudy of philoſophy, in which, though he profeſſed himſelf a diſciple of the moderate ſect of the old academy, he nevertheleſs, from a certain pride and gravity of temper, and from a deference to the example of Cato, affected the ſeverity of the Stoic. His diſpoſition, however, which was mild, gentle, and compaſſionate, was incompatible with this ſyſtem; and he was often conſtrained, by the tenderneſs of his nature, to confute the rigour of his principles. On the doctrines of the philoſophy which he had adopted, he wrote ſome treatiſes, and he transfuſed both the language and ſentiments of his ſect into Latin. His accompliſhments as a ſcholar and an orator are ſufficiently atteſted by Cicero, who has done him the honour of introducing him as one of his ſpeakers in his dialogue "De Claris Oratoribus," and addreſſed to him his treatiſe entitled "Orator." Attached to Cato from his youth, he imbibed, under his diſcipline, an ardent love of liberty and virtue: and having accompanied him in his expedition to Cyprus, where he was employed by his uncle, after the unhappy end of its king, Ptolemy, in ſecuring the royal treaſures for the public. This commiſſion he executed to the ſatisfaction of his uncle; and by marrying his daughter Portia, he formed a cloſer alliance with this venerable patriot, and was led to make him the model of his public conduct. Accordingly, after his example, when the civil war broke out between Cæſar and Pompey, he joined the party of the latter; although he had reaſon to reſent his conduct for the murder of his father; and Cæſar's familiarity with his mother induced him to manifeſt a partiality in favour of her ſon. At the battle of Pharſalia, in which Brutus was engaged on the ſide of Pompey, Cæſar gave ſpecial orders to find out and preſerve him unhurt; and after this battle, which terminated the republic, he ſurrendered himſelf to Cæſar, who rejoiced in his ſafety, and immediately received him into favour, teſtifying his regard for him by pardoning his friend Caſſius at his interceſſion. Cæſar entruſted him with the government of Ciſalpine Gaul, and afterwards nominated him prætor of Rome. Notwithſtanding the gratitude and reſpect he was thus induced to entertain for Cæſar, he was alarmed by his uſurped dominion, and a view of the degraded ſtate into which his country was reduced by the violation of the laws and conſtitution, excited a diſguſt which no favours could compenſate. At the ſame time, Caſſius, who had married his ſiſter, was aſſiduous in endeavouring to kindle the flame of patriotiſm in his breaſt. He cauſed the name of his ſuppoſed anceſtor, Junius Brutus, to be ſounded in his ears; and led him to believe that the Romans expected his aſſuming the hereditary office of reſcuing them from a tyrant. Theſe arguments at length prevailed, and Brutus agreed to take the lead in a conſpiracy againſt Cæſar's life. His character induced ſeveral other eminent citizens to join in the deſign; and they reſolved to execute it on the ides of March (March 15) A. U. 710, B. C. 44. It is ſaid, that when Cæſar ſaw his beloved Brutus among the conſpirators, with his dagger drawn againſt him, he deſiſted from any farther ſelf-defence, wrapped his head in his mantle and ſurrendered himſelf to his fate. Averſe from needleſs effuſion of blood, Brutus, by impolitic forbearance, permitted Antony to eſcape; and by readineſs to acquieſce in the reading of Cæſar's will, and by the pompous ſolemnities of his funeral, he furniſhed Antony with a pretence for exciting in the minds of the people a reverence for his memory, and a deteſtation againſt his murderers; in conſequence of which he and his party were obliged to ſecure their lives by retiring from Rome to Antium. Afterwards, when Octavianus joined Antony, and they concurred in aſſuming the ſovereign power, he and his faithful Portia quitted Italy and ſet ſail for Athens. Here, at convenient intervals, he renewed the proſecution of his philoſophical ſtudies; whilſt at the ſame time he ſecretly prepared for war, and ſent a meſſenger to Macedonia, to engage the Romans of that province in the party of the republic, and to facilitate his admiſſion into it, as governor for the ſenate. Having obtained a complete ſupply of men, arms, and money, he marched into Macedonia; and gained poſſeſſion of the army, and of the perſon of Caius, the brother of Antony, who had been deputed to ſeize Dyrrachium and Apollonia.

When Octavianus became ſole maſter of Rome, he proceeded to the condemnation of all who had been concerned in the murder of his adopted father; and the names of Brutus and Caſſius were inſerted, much to the regret and grief of the people, in the bloody roll of proſcription. They, however, were at this time in the command of powerful armies, which ſpeedily formed a junction at Smyrna. Having performed ſome ſeparate ſervices in the ſubjugation of thoſe maritime powers, the Rhodians and Lydians, they met again at Sardis; and determined to direct their march to the ſtraits of Helleſpont, in order to paſs over into Europe, for the purpoſe of oppoſing the progreſs of Antony and Octavianus, who had now arrived at Macedon. It was in the courſe of this march that the frightful apparition, recorded by Plutarch and other hiſtorians, preſented itſelf to Brutus, and which, under the appellation of his evil genius, announced another viſit to him at Philippi. Caſſius aſcribes this phenomenon to the illuſion of a troubled imagination, under the influence of anxiety and bodily fatigue; and if it be any thing more than an idle fabrication, to this cauſe it may be reaſonably attributed. On the plains of Philippi the two hoſtile armies aſſembled for the deciſion of the intereſting conteſt. Brutus and Caſſius having ſettled their plan of conduct, if the iſſue of this conflict ſhould prove unfavourable, they prepared for action. In the firſt battle Brutus defeated Octavianus, but in the ardour of the conteſt he left Caſſius unſupported, and thus occaſioned his defeat and death. This event he grievouſly deplored, and ſhedding many tears over the body of his friend, bewailed the loſs of him under the honourable appellation of "the laſt of the Romans." He had now the ſole command of a numerous and mutinous army; which compelled him to riſk another engagement, having firſt put to death all the ſlaves whom he had made priſoners, and having promiſed to his ſoldiers, in caſe of victory, the pillage of Theſſalonica and Lacedæmon. In the ſecond battle the wing which he commanded routed that of Octavianus, whilſt Antony defeated the other committed to the conduct of Caſſius's lieutenant. But, inſtead of purſuing this advantage by following the fugitives, this experienced general availed himſelf of it by turning round on the rear of Brutus, and entirely breaking and diſperſing his troops. Brutus having eſcaped being made priſoner by the heroic friendſhip of Lucilius, who ſurrendered himſelf under the name of Brutus, and who was generouſly ſaved by Antony after the diſcovery of the fraud, fled with a few friends to a retired valley, where he ſpent an anxious night. With the returning dawn, he perceived that he was ſurrounded by the enemy, and conjured ſome of his domeſtics to put an end to his life. Upon their refuſal, he diſmiſſed them with a requeſt that they would provide for their own ſafety; and he then renewed his application to Strato, an Epirote, and his former fellow ſtudent; but Strato perſiſted in his denial, till Brutus called upon a ſlave to perform the fatal office. Upon this the generous Greek exclaimed, "Forbid it, Gods, that it ſhould ever be ſaid, that Brutus died by the hand of a ſlave for want of a friend!" and covering his face with his left hand, preſented with his right his ſword, upon which Brutus threw himſelf with ſuch violence that it pierced through his body, and he inſtantly expired. Thus periſhed, in the 43d year of his age, according to Cicero, but in the 37th according to Velleius Paterculus, one of the moſt irreproachable characters in Roman hiſtory; according to Blair's table, A. U. 712, B. C. 42.

To his generoſity, humanity, uprightneſs, and well-principled virtue, public and private, writers of all parties have borne teſtimony; and thoſe who have condemned the act of aſſaſſinating Cæſar, have aſcribed it, on the part of Brutus, to patriotic motives. Indeed, Antony himſelf did him the juſtice to ſay, that he "was the only one of the conſpiracy who entered into it out of principle; that the reſt, from private malice, roſe up againſt the man, he alone againſt the tyrant." No man in public life ſeems to have ſet up virtue more ſincerely as the object of his veneration and purſuit than Brutus; and it does not, therefore, ſeem probable, that according to the report of ſome writers, his laſt ſpeech ſhould be a confeſſion of error in having followed an empty name. "His memory," ſays one of his biographers, "was cheriſhed and honoured as long as a ſpark of Roman ſpirit ſurvived the loſs of conſtitutional freedom; and the names of Brutus and liberty are to this day inſeparably aſſociated." His body was treated with reſpect by Antony; but the vindictive Octavianus cauſed the head to be cut off, in order to expoſe it at the feet of Cæſar's ſtatue. But his deſtination was defeated, as it was thrown over-board in a ſtorm. The remains were honourably burnt by order of Antony, and the aſhes ſent in an urn to Servilia. Plutarch's Brutus, apud Op. t. i. p. 984. Middleton's Life of Cicero, vol. ii. p. 226. Anc. Un. Hiſt. vol. xi. and xii.

Brutus, in *Entomology*, a ſpecies of Papilio (*Eq. Achiv.*) The wings are white with a black border; on the lower pair beneath, a fuſcous band. This inhabits Africa; it is a large and rare inſect. Cramer deſcribes a variety of it under the name of Merope.

Brutus, in *Geography*, a military townſhip of America, in New York, through which runs the river Seneca, and where it receives the waters of Owaſco lake, paſſing from the ſouth-eaſt through the towns of Aurelius and Scipio. It lies 11 miles N. E. from the north end of Cayuaga lake, and 19 S. S. E. from lake Ontario.

BRUTZ, a town of France, in the department of the Ille and Vilaine, and diſtrict of Redon, 2 leagues ſouth of Rennes.

BRUX. See Most.

BRUYE, or Buga, an iſland in the bay of Bengal, near the mouth of the river Ava, about 8 leagues long and 3 broad. N. lat. 16° 15′. E. long. 97° 37′.

BRUYERE, John De La, in *Biography*, a French writer of reputation, was born, in 1640, in the Iſle of France, and, at a proper age, recommended by Boſſuet to inſtruct the duke of Burgundy in hiſtory. The reſidue of his life was paſſed at court, where he maintained the character of a man of letters; philoſophical and unambitious in his temper, as well as polite and unaffected in his manners, uniting the gaiety and ſocial diſpoſition of the well bred gentleman with the ſtudious habits of the ſcholar. In 1693 he was admitted into the French Academy; and, in 1696, a fit of apoplexy terminated his life. His work, entitled "Characters of Theophraſtus, tranſlated from the Greek, with the Characters or Manners of this Age," was firſt publiſhed in 1687, and has been ſeveral times reprinted. In this work, of which Malezieux predicted that "it would gain many readers and many enemies," the author has had the honour of participating with Moliere in the correction of more follies and indecorums than perhaps any other moraliſt, ancient or modern. The pencil with which he pictured modern characters and manners is ſtrong but delicate; his ſtyle nervous but abrupt, occaſionally obſcure, and affectedly ſententious. The maxims of Publius Syrus are almoſt wholly tranſplanted into his works. Keys were made of his characters, for the court, the capital, and the provinces; and his book, by means of its ſucceſs, produced many imitations. The beſt editions of the "Characters" are thoſe of Amſterdam in 1741, and of Paris in 1750 and 1765. The author's "Dialogues on Quietiſm" were arranged for publication by M. Du Pin, and printed in 1699. Nouv. Dict. Hiſt.

BRUYE'RES, in *Geography*, a town of France, in the department of Voſges, and chief place of a canton, in the diſtrict of Epinal, and 11 miles E. of it. The town contains 1911 and the canton 12,435 inhabitants: the territory includes 210 kiliometres, and 32 communes.

Bruyeres Sous Laon, a town of France, in the department of the Aiſne, and diſtrict of Laon, 1 league S.S.E. of Laon.

BRUYN, Cornelius Le, in *Biography*, a traveller and painter, was born at the Hague, and having commenced his travels through Muſcovy, Perſia, the Levant, and the Eaſt Indies, in 1674, completed them in 1708. His "Voyage to the Levant" was publiſhed at Amſterdam in 1714, folio, and his "Travels to Muſcovy, Perſia, &c." in 1718, in 2 vols. fol.; an edition much eſteemed for the beauty of its plates, but exceeded in value by that of Rouen in 1725, in 5 vols. 4to. on account of the corrections and notes of the Abbé Banier. As a traveller, Bruyn is curious and inſtructive, but his ſtyle is inelegant, and his facts ſometimes inaccurate. Nouv. Dict. Hiſt.

BRUYNSWICK, in *Geography*, a plantation of America, in Ulſter county, New York.

BRUYS, Peter De, in *Biography*. See Petrobrusians.

BRUZEN DE LA MARTINIERE, Antony-Augustin, an induſtrious compiler, was born at Dieppe in 1666, and educated at Paris, under the care of his uncle, the celebrated Richard Simon. In 1709 he was employed, by the duke of Mecklenburgh, in reſearches into the hiſtory of that duchy, and afterwards attached to the duke of Parma, and to the king of the Two Sicilies, who appointed him his ſecretary with a handſome ſalary. Upon his retirement to the Hague, he completed his "New Geographical Dictionary," which was dedicated to the king of Spain, and recompenſed by the title conferred upon him by that monarch, of his firſt geographer. After a life of ſtudy and labour, as well as of ſocial intercourſe and pleaſure, ſuited to his friendly diſpoſition and polite manners, he died at the Hague in 1749. His reading was extenſive, and he wrote with judgment, facility, and generally with elegance. His favourite ſtudies were geography, hiſtory, and polite literature. The moſt valuable of his numerous works are "The great Geographical, Hiſtorical, and Critical Dictionary," 10 vols. fol. Hague, 1726 to 1730, and Paris, 1768, 6 vols. fol.; "Puffendorff's Introduction to the Hiſtory of Europe, greatly augmented and corrected," of which the laſt edition is that of the Hague, in 11 vols. 12mo; "Geographical and Hiſtorical Treatiſes to facilitate the Knowledge of the Holy Scriptures, by various celebrated Authors, Huet, Le Grand, Calmet, Hardouin, &c." 2 vols. 12mo. 1730; and "Select Letters of M. Simon," with a life of the author and curious notes, Amſt. 4 vols. 12mo. Nouv. Dict. Hiſt.

BRYA, in *Botany*, (Brown Jam.) See Amerimnum Ebenus.

BRYAN, in *Geography*, a county of America, in Georgia, adjoining Chatham county on the weſt and ſouth-weſt. It contains 2836 inhabitants, of whom 2306 are ſlaves.

BRYANT, Jacob, in *Biography*, the ſon of a Cuſtom-houſe officer at Plymouth, was, for the honour of Devonſhire, born there; though he has been repreſented by ſome as a native of Kent, from the circumſtance of his father's being transferred to that county whilſt himſelf was a child.

Placed upon the foundation of Eton college he was early diſtinguiſhed for claſſical attainments; and the high reputation with which he entered King's ſerved as an incentive to his future exertions. Succeeding at the ordinary period to a fellowſhip in that college, he continued its ornament till nearly the end of the century, and the boaſt of both inſtitutions to the cloſe of his life. Having devoted himſelf early to habitual ſtudy, he perſevered with but few interruptions; and theſe are to be conſidered as referring rather to a change of ſubject, than a breaking off from his ordinary purſuits; for during his ſecretaryſhip to the duke of Marlborough and the Board of Ordnance, he availed himſelf of the opportunities which his employments afforded for rendering his knowledge in modern tactics ſubſervient to that of the ancients. As he attended the father in the capacity of ſecretary during his military commands, ſo he accompanied the ſon to the ſeat of the Muſes; and, in the office of private inſtructor, ſuperintended the ſtudies while at Eton of the preſent duke of Marlborough, as well as thoſe of his brother lord Charles. Devoting himſelf to a life of literature, his diligence was unremitted in his favourite purſuit, and the effects of it were conſecrated to the beſt purpoſes of learning and religion.

The firſt work which he formally publiſhed was "Obſervations and Enquiries relating to various parts of ancient Hiſtory, containing Diſſertations on the Wind Euroclydon, and on the Iſland Melite; together with an Account of Egypt in its moſt early State, and of the Shepherd Kings, 1767." Thoſe who knew Mr. Bryant formed conſiderable expectations from his acknowledged reputation, when this volume was announced; nor were they diſappointed on its appearance. The opinion entertained of his learning was confirmed by it, and the ingenuity diſplayed in it acquired him conſiderable commendation.

His next communication to the public, and the work on which his character as a ſcholar muſt ultimately reſt, was his "New Syſtem, or Analyſis of Ancient Mythology; wherein an Attempt is made to diveſt Tradition of Fable, and to reduce Truth to its original Purity." Of this publication the *firſt* and *ſecond* volumes came forth together, in 1774, and the *third* followed two years after. It being his profeſſed deſign to preſent a hiſtory of the Babylonians, Chaldæans, Egyptians, Canaanites, Helladians, Ionians, Leleges, Dorians, Pelaſgi, and other ancient nations, his reſearches for this purpoſe were not only of neceſſity recondite, but in many inſtances uncertain; but to facilitate his paſſage through the mighty labyrinth which led to his primary object, he not only availed himſelf of the ſcattered fragments of ancient hiſtory wherever he could find them, but alſo of a variety of etymological aids; for being perſuaded that the human race were the offspring of one ſtock, and conceiving thence that their language in the beginning was one, this favourite notion was exemplified by him in the inveſtigation of radical terms, and applying theſe as collateral aids. Conſidering that his knowledge of the Oriental dialects was very confined, it is to be lamented that upon ſome occaſions he has indulged too freely to fancy; yet thus much muſt be confeſſed, that his defects in this kind of learning form a ſtrong plea in his favour; for if, without underſtanding theſe languages, he has ſucceeded in tracing out ſo many radicals as his table of them exhibits, and more eſpecially if he has been right in explaining them, it will follow that his explanations muſt be founded on truth, and therefore are not chimerical. In oppoſition, however to them, Mr. Bryant experienced ſome ſevere and petulant attacks: firſt, from a learned Dutchman, in a Latin review of his work; and ſhortly after from the late Mr. Richardſon, who was privately aſſiſted by ſir William Jones; a circumſtance which there is reaſon to think Mr. Bryant never knew.

To their ſtrictures Mr. Bryant replied in an anonymous pamphlet, of which he printed a few copies for the peruſal of his friends, but never profeſſedly publiſhed. It is hoped, however, that, in the next edition of his Mythology, this tract will be added, as it is among the beſt of his works.

Amongſt other parts of the Mythology which were attacked with aſperity, that which relates to the Apamean medal was ſeverely aſſailed. Mr. Bryant defended himſelf in a ſeparate publication (which alſo ſhould be ſubjoined to the new edition); and though what he offered on the ſubject was lightly treated by ſome, who highly appreciated their knowledge of medals, yet the opinion of profeſſor Eckhel, the firſt medaliſt of his age, has decided on the controverſy in favour of Mr. Bryant.

Whatever may be the merit, in the opinion of the learned, of Mr. Bryant's *New Syſtem* at large, no perſon can poſſibly diſpute, that a very uncommon ſtore of learning is perceptible through the whole; that it abounds with great originality of conception, much perſpicacious elucidation, and the moſt happy explanations on topics of the higheſt importance: in a word, that it ſtands forward amongſt the firſt works of its age.

About this time the Vindiciæ Flavianæ, a tract on the much diſputed teſtimony of Joſephus to Chriſt, was printed, and a few copies ſent to a bookſeller in either univerſity; but as the pamphlet appeared without the name of its author, and no attention was ſhewed it, Mr. Bryant recalled them, and ſatisfied himſelf with diſtributing the copies thus returned amongſt a few particular friends. The new light, however, which Mr. Bryant threw upon the ſubject, and the acuteneſs with which the difficulties attending it were diſcuſſed, ſoon cauſed the Vindiciæ to be known, and at length to be publiſhed with his name.

Dr. Prieſtley having, by his ſtatement of the doctrine of philoſophical neceſſity in a leſs exceptionable point of view than that in which it had been heretofore ſeen, attracted attention to the ſubject. Mr. Bryant was alarmed at the pernicious tendency, as he conceived, of the doctrine; and with the deſign of checking its advancement, addreſſed the doctor on the ſubject. But whatever impreſſion this addreſs might have produced on other readers, it certainly left his antagoniſt unconvinced; which, however, was not the caſe in a former inſtance, for Dr. Prieſtley liberally confeſſed that, in reſpect to the teſtimony of Joſephus concerning our Saviour, Mr. Bryant had made him completely a convert.

The poems attributed to Rowley having been publiſhed by Mr. Tyrwhitt, Mr. Bryant's attention was next drawn to them. From the communications of his friend Dr. Glynn, and his own enquiries at Briſtol, Mr. Bryant having acquired ſuch information as convinced him, that they had their foundation in reality, and were not entirely of Chatterton's fabrication, embarked in the conteſt; but though he failed to produce conviction in ſeveral particulars, his book diſcovers conſiderable talent, as well as much knowledge of Engliſh antiquities and literature, and abounds with arguments which cannot be repelled.

The hypotheſis of Mr. Bryant in reference to the original language was always kept in view by him, and as reſearches were extended on all ſides to obtain elucidations, the language of the gypſies engaged his attention; accordingly the collections which he made from it, were publiſhed in the Archæologia, vol. vii.

His next production, but which ſtill remains unpubliſhed, was an illuſtration in Latin of gems in the poſſeſſion of the duke of Marlborough, engraved for his Grace by Bartolozzi. Of this magnificent work Mr. Bryant's obſervations formed the text of the firſt volume, that of the ſecond was written by Dr. Cole, prebendary of Weſtminſter.

The friendſhip which ſubſiſted between Mr. Bryant and the family of his patron, prompted him on all occaſions to ſubſerve their wiſhes, and to this diſpoſition are the public indebted for his Treatiſe on the Authenticity of the Scriptures and the Truth of the Chriſtian Religion, which was written to gratify the dowager lady Pembroke, and is an excellent book for popular inſtruction.

In two years after (for the treatiſe juſt mentioned appeared in 1792) the world were obliged by a large volume, entitled "Obſervations upon the Plagues inflicted upon the Egyptians; in which is ſhewn the Peculiarity of thoſe Judgments, and their Correſpondence with the Rites and Idolatry of that People; with a Prefatory Diſcourſe concerning the Grecian Colonies from Egypt." This is certainly to be reckoned amongſt Mr. Bryant's beſt performances, and as ſuch will be ſtudiouſly read.

Profeſſor Dalzel having communicated to the Royal Society of Edinburgh, and afterwards publiſhed in a ſeparate volume, M. le Chevalier's "Deſcription of the Plain of Troy," Mr. Bryant, who many years before had not only conſidered, but written his ſentiments on the Trojan war, firſt publiſhed his obſervations on M. le Chevalier's treatiſe, and afterwards a diſſertation concerning the war itſelf, and the expedition of the Grecians as deſcribed by Homer; with the view of ſhewing that no ſuch expedition was ever undertaken, and that no ſuch city in Phrygia exiſted. (The elegant treatiſe of Mr. Wood on the genius and writings of Homer, was edited, for his deceaſed friend, by Mr. Bryant.)

The clamour excited by theſe pamphlets almoſt exceeded belief. The author was attacked in all companies without mercy, and even by men from the preſs, who ſhould have thought more ſoberly, for having indulged ſo exceſſive a ſcepticiſm, as could not, in its moſt direct effects, but be pernicious to the cauſe of divine revelation. Such cenſures, however, when duly weighed, could be diſgraceful only to their authors, whoſe want of temper, or of judgment, rendered them unable to diſcriminate.

Amongſt Mr. Bryant's principal opponents were Mr. Gilbert Wakefield, Mr. Morrit, and Dr. Vincent: but though the champions for the war ſtrenuouſly aſſailed their antagoniſt, ſeveral of Mr. Bryant's objections remain as yet unanſwered.

In the following year Mr. Bryant ſubmitted to the public a work of a different kind and character, under the title of "The Sentiments of Philo Judæus concerning the ΛΟΓΟΣ, or Word of God, together with large Extracts from his Writings, compared with the Scriptures in many other particular and eſſential Doctrines of the Chriſtian Religion." But, learned and curious as this treatiſe unqueſtionably is, it appears to have intereſted the general reader leſs perhaps than any of his other productions. In addition to thoſe already noticed may be added his "Obſervations on famous controverted Paſſages in Juſtin Martyr and Joſephus," and a pamphlet addreſſed to Mr. Melmoth, written with leſs temper than might have been wiſhed. Mr. Bryant cloſed his labours with a quarto volume of Diſſertations on the prophecy of Balaam; the ſtanding ſtill of the ſun in the time of Joſhua; the jaw bone of the aſs with which Samſon ſlew the Philiſtines; and the hiſtory of Jonah and the whale: ſubjects in themſelves exceedingly curious, and treated with much ingenuity; but theſe tracts upon them having been written above thirty years before, Mr. Bryant in reviſing ſo altered, as, through a defect of memory, to render the remarks in one part inconſiſtent with thoſe in another, which materially diminiſhed the value of the whole.

Other writings to a conſiderable extent ſtill remain in the hands of his executor, who is ſaid to have ſubmitted them for publication to a competent judgment.

In forming a general eſtimate of Mr. Bryant's literary character, it will be found that, as a claſſical ſcholar, he had few equals; his acquaintance with hiſtory and the topics of general information was of very uncommon extent, but from the want of Oriental literature and the ſtricter ſciences he yielded too often to the impulſes of a vigorous fancy. It will, notwithſtanding, be found from repeated peruſals of his writings, that he deſervedly ranks amongſt the foremoſt of his age, and from having conſecrated his great talents and acquiſitions to the ſervice of religion, will be ever entitled to the veneration of mankind.

In his perſon Mr. Bryant was lower and more delicately formed than men in general, and conſequently leſs capable of ſtrong exerciſe: but, in early life he had great agility, particularly in ſwimming, a circumſtance which enabled him to ſave Dr. Barnard, afterward head maſter of Eton, when drowning. In his ordinary habits of life he was remarkable for his temperance, and though his time and ſtudies were principally devoted to literature and the purſuit of truth, yet his converſation with thoſe he received and converſed with was uncommonly ſprightly, as he never failed to mix entertaining anecdote with inſtruction. In his perſon he was particularly neat, and in his deportment courteous. His liberality was often conſpicuous, and the ſpirit of religion diffuſed itſelf through all his actions. As few comparatively live ſo long, inſtances of ſuch exemplary merit can but rarely be found. Elected from Eton to King's, in 1736, he proceeded bachelor of arts in 1740; in 1744, took the degree of maſter, and died, after a long reſidence, at Cypenham, near Windſor, on the 14th of November, 1804, of a mortification in his leg, occaſioned by a hurt from the tilting of a chair in reaching down a book from its ſhelf. At his own deſire, Mr. Bryant was interred in his pariſh church, beneath the ſeat he there occupied.

BRYANT'S *Cove*, in *Geography*, lies on the eaſt coaſt of Newfoundland, half a league S. W. from Harbour Grace, and two and a half leagues to the ſouth-weſt of Spaniſh bay, in which there is good fiſhing for boats.

BRYANT'S *Lick*, a ſouth-eaſt branch of Green river, the mouth of which is about 27 miles E. of Craig's fort, and 10 E. of Sulphur ſpring, in Mercers county, Kentucky.

BRYANTHUS, in *Botany* (Gmel. Sib.) See ANDROMEDA *bryantha*.

BRYE, JOHN THEODORE DE, in *Biography*, excelled in the art of deſigning and engraving. He was a native of Liege, but reſided chiefly at Franckfort, where he carried on a conſiderable commerce in prints. His taſte was formed on the works of Sebald Beham. He ſeldom uſed the point, but worked almoſt wholly with the graver. His ſtyle of engraving was neat and free, excellently adapted to ſmall ſubjects, comprehending many figures; ſuch as funeral parades, proceſſions, &c. His drawing was very correct; his heads ſpirited and expreſſive, and the other extremities of his figures well marked. His back-grounds, though ſlight, are admirably touched. He died March 27, 1598. His great works were the plates for the firſt four volumes of Boiſſard's Roman Antiquities; the plates for illuſtrating the Manners and Cuſtoms of the Virginians, copied by Picart in his Religious Ceremonies of all nations; the plates to the Latin Narrative of the Cruelties of the Spaniards in America, publiſhed in 1598, and his "Deſcriptio Indiæ Orientalis et Occidentalis." 5 vols. fol. 1598; and among other detached prints his "Proceſſion for the Funeral of Sir Philip Sidney," engraved at London, 1578. Strutt.

BRYENNIUS, NICEPHORUS, was a native of Oreſtia in Macedonia, and married the princeſs Anna Comnena, daughter of Alexius Comnenus, who raiſed him to the rank of Cæſar, but declined announcing him as his ſucceſſor in prejudice of his own ſon. After the death of Alexius, the empreſs Irene and her daughter Anna attempted to elevate Bryennius to the empire, but he refuſed to concur in the plot. Having been ſent, in 1137, to beſiege Antioch, he fell ſick, and returning to Conſtantinople died in that city. His hiſtory of the reigns of Iſaac Comnenus and of the three ſucceeding emperors, was compriſed in four books, and publiſhed with a Latin tranſlation, by the jeſuit Pouſſines at Paris in 1661, to which the annotations of Du Cange were annexed in 1670.

BRYENNIUS, MANUEL, the laſt writer on muſic in the Greek language that has come to our knowledge. He flouriſhed under the elder Palæologus, about the year 1320, and it is probable that he was a deſcendant of the houſe of *Brienne*, an ancient French family, that went into Greece during the Cruſades, at the beginning of the thirteenth century. Fabric. Bib. Gr. Du Cange. Fam. Byzant.

The work is divided into three books, all which are confined to harmonics: the firſt is a kind of commentary on Euclid; and the ſecond and third little more than explanations of the doctrines of Ptolemy.

Meibomius had promiſed a Latin tranſlation of this work, but dying before it was finiſhed, Dr. Wallis performed the taſk, and it now conſtitutes a part of the third volume of his works, publiſhed at Oxford in 3 vols. fol. 1699.

That the Greek muſic had undergone many alterations ſince the ancient treatiſes which are come down to us were written, is certain from the change and increaſe of its vocabulary. Bryennius (lib. iii. ſect. 3.) has given as names of intervals, a liſt of barbarous terms not to be found in any preceding writer within our knowledge: and in the Greek gloſſary of Du Cange, and the Abate Martini's papers on the preſent muſic of Greece, a great number occurs that is not to be found either in writers of high antiquity, or in Bryennius: as lib. iii. ſect. 4. the words Ἦχος, and πλάγιος, appear for *tonus* and *obliquus*; and πρῶτος, δεύτερος, τριτος, τεταρτος, are uſed to diſtinguiſh the modes or tones; a proof that he was a modern Greek. Padre Martini is of opinion that theſe terms were firſt introduced in church muſic, to exclude the pagan titles of Dorian, Phrygian, Lydian, &c.

The technical language of the Greeks has always been copious, and in muſic perhaps its ſeeming redundance is more conſpicuous than in any other art or ſcience. But in other arts and ſciences words are repreſentatives of things exiſting; whereas, in denominating the tones and inflexions of voice, which, to realize, require new creation, there can be no correſpondence between the type and ſubſtance. The colours, the forms, and objects which a painter wiſhes to repreſent, are in nature; and the poet, in all the ebullitions of wild enthuſiaſm and fervid imagination, deſcribes what he has ſeen and felt, or what *is* to be ſeen and felt, and for which common language muſt ſupply him with ſymbols. But it has never entered the thoughts of man to give names to all the minute ſhades of colour between black and white, or to the gradations by which light is propagated between the time of total darkneſs and the ſun's meridian. And yet, in the ſcale of ſounds, from the loweſt muſical tone in the human voice to the higheſt, where octaves are not repreſented by ſimilar ſigns and appellatives, the names and characters muſt be numerous. The lines and clefs of the European muſic have certainly freed it from many perplexities with which it was embarraſſed, even in the artleſs times of Canto Fermo.

BRYGI, in *Ancient Geography*, inhabitants of Thrace, who were ſubdued by the Macedonians, and ſerved under Xerxes, when he invaded Greece.

BRYGMUS, in *Medicine*, a grinding or gnaſhing of the teeth; a ſymptom common in epilepſy, and ſome other convulſive diſorders: from βρύχω, to ſnap, or gnaſh, with the teeth.

BRYONIA, in *Botany*, (βρυωνια, Dioſcorides; from βρυω, germino, pullulo, expreſſive of the vigorous and rapid growth of its annual ſtems from the perennial root.) Lin. gen. 1093. Reich. 1194. Schreb. 1480. Gærtner 551. Juſſieu 394. Ventenat, vol. iii. 511. Claſs, *monœcia ſyngeneſia. Pentandria*, Smith. Nat. Ord. *Cucurbitaceæ*, Linn. & Juſſ.

Gen. Char. Male flowers. *Cal.* Perianth one-leafed, campanulate, five-toothed; teeth oval-ſhaped. *Cor.* five-parted, campanulate, faſtened to the calyx; diviſions ovate. *Stam.* Filaments three, very ſhort, two bearing each two anthers, and the third with only one. Female flowers. *Cal.* Perianth as in the males, ſuperior, deciduous. *Cor.* as in the males. *Piſt. Germ*, inferior. *Style* trifid, the length of the expanding corolla; ſtigmas emarginate, patulous. *Peric. Berry* ſubglobular, ſmooth. *Seeds*, not numerous, fixed to the coat, ſubovate. Schreb. Not more than ſix, incloſed in their proper cells. Gært.

Species, 1. B. *alba*. Linn. "with black berries, and the inward ſubſtance of the root of a pale box colour; leaves palmate, callous-ſcabrous on both ſides." This ſpecies, though mentioned by many of the old botaniſts, does not ſeem to be much known ſince the time of Linnæus. La Marck obſerves that he knows nothing of it, and ſeems to ſpeak with ſome degree of doubt with reſpect to its exiſtence. In this, however, he is certainly wrong; it muſt have been known to Linnæus. Boſc ſays that it is a truly diſtinct ſpecies, but gives no deſcription. It appears to be confined to the north of Europe, and not to be found in England or France, for though Plukenet ſpeaks of it as not unfrequent about Cambridge, he was probably miſtaken; it had not been obſerved by Ray, nor has it been found ſince in that neighbourhood by Profeſſor Martyn, nor in any other part of Great Britain. 2. B. *dioica*. Jacq. Auſt. t. 199. Hall. Helv. 574. Allion. Ped. 455. Pollich. pal. 915. Ray. hiſt. 659. Syn. 261. Huds. Ang. 437. Smith Flor. Brit. 398. Eng. Bot. 439. "Berries red; root yellowiſh-white within; leaves palmate, callous-ſcabrous on both ſides; flowers dioicous." *Root* large, fleſhy, white. *Stems* annual, ſcandent, angular, rough, leafy, ſomewhat branched, very long. *Leaves* alternate, petioled, palmate, five-lobed, angular, rough on both ſides, with minute callous points. *Stipules* none. *Tendrils* ſolitary, ſimple, accompanying the petioles. *Peduncles* axillary, ſomewhat umbellate with few flowers. *Corolla* white, elegantly marked with green veins. *Anthers* connate by pairs with an odd one. *Filaments* all a little united at the baſe. *Berries* globular, ſcarlet, ſmooth. *Seeds* ſix, elliptic, ſpotted. The leaves in autumn have the ſmell of muſk. Smith. The roots have been artificially made to aſſume a human ſhape, and ſhewn to the common people as roots of the celebrated mandrake, Atropa Mandragora, to which many fanciful virtues have been attributed. For this purpoſe the earth is removed round the root of a thriving young plant, ſo as not to diſturb the lower fibres, and a mould, ſuch as is uſed for plaſter figures, is made faſt with wires to receive the growing woody part of the root; the earth is then replaced, and in the courſe of a ſummer a root of the required ſhape is produced. 3. B. *palmata*, Linn. "Leaves palmate, ſmooth, five-parted, repand-ſerrate." *Root* perennial. *Berries* yellowiſh, globular, rather large. Native of Ceylon. Introduced into England in 1778, by Meſſrs. Gordon and Græfer. 4. B. *laciniosa*, Linn. Gært. tab. 88. fig. 2, copied by La Marck. pl. 796, fig. 2. "Leaves palmate; diviſions lanceolate, ſerrated, petioles muricate." *Root* perennial. *Leaves* cordate, palmate, rough above, roughiſh beneath on the rib and nerves. *Petioles* almoſt prickly; not peduncles as it ſtands in the Mantiſſa, as copied by Reichard, and tranſlated without a comment by La Marck. *Corolla* yellow, hairy, or tomentous within, ſmooth without. *Germ* ſmooth. *Fruit* ſeſſile, of the ſize of a cherry, marked with ſix milk-white lines. *Berry* fleſhy, three-celled, the pulp in each cell eaſily ſeparable from it, gelatinous-membranaceous, two-celled, green. *Seeds* ſix, one in each cell of the pulp. La Marck deſcribes a plant cultivated in the Royal garden at Paris, which he ſuppoſes to be the *Nehoëmeka* of the Hortus Malabaricus, and not ſpecifically diſtinct from the *laciniosa* of Linnæus, though Linnæus has cancelled the reference to it as a ſynonym in the Mantiſſa, after having admitted it in the Species Plantarum. The plant in the French garden has deeply palmated *ſmooth* leaves, but the *petioles*, as well as the poſterior nerves, are armed with almoſt thorny prickles. 5. B. *Africana*. Linn. Herm. Parad. 107. tab. 108. Gærtner, 2, tab. 88, copied by La Marck, Pl. 796. fig. 3. "Leaves palmate, five-parted, ſmooth on both ſides; diviſions pinnatifid." Upper *leaves* five-parted, ſcabrous at the edge; diviſions pinnatifid, almoſt linear, acute. *Berries* ſolitary, roundiſh, beaked, obtuſely angular, yellow. Linn. Rind of the berry fleſhy, rather thick, orange-coloured on the outſide; pulp, membranaceous-ſpongy, eaſily ſeparable from the rind, regularly divided into ſix, ſometimes only four cells. *Seeds* one in each cell, ovate-globular, compreſſed at the ſides, and eſpecially towards the navel, to a ſharp edge, with very minute, whitiſh briſtles or ſcales lying cloſe to their ſurface. Gært. La Marck deſcribes a plant, cultivated at Paris, which he takes to be the ſame, in which the leaves are roughiſh beneath. 6. B. *cretica*. Linn. "Leaves palmate, rough with callous points on their upper ſurface." *Root* long, not ſo large as B. *dioica*, running deep into the ground. *Stems* ſlender, rough, furniſhed with tendrils. *Leaves* divided like thoſe of the common ſort, but leſs, ſtreaked or ſpotted with white. *Flowers* axillary, pale, ſtreaked, on long pendant peduncles. *Berries* ſmall, ſemi-globular, divided at top into two parts, red, generally containing only two ſeeds. Miller, and La Marck. Native of Candia, whence the ſeeds were ſent to C. Bauhin. Cultivated by Miller, before 1779. 7. B. *bonarienſis*,. Mil.; *ficifolia*, La Marck. Dill. Elth. tab. 50. fig. 58. La Marck, Pl. 796. 1. "Leaves ſemi-palmate, five-parted, with obtuſe ſegments, hairy." *Root* and *ſtems* like thoſe of the common bryony. *Leaves* reſembling thoſe of the common fig, but ſmaller; narrower and ſmaller at the ends of the branches, hairy, and very rough, upper ſurface deep green, lower whitiſh. Native of Buenos Ayres. Cultivated in the Eltham garden, about 1726. Mil. 8. B. *variegata*, Miller. "Leaves palmate, with lanceolate ſegments, ſpotted on the upper, ſmooth on the under ſide; fruit ovate, ſcattered." 9. B. *grandis*. Lin. Mant. "Leaves cordate, angular, ſmoothiſh, glandular at the baſe underneath; tendrils ſimple." *Stem* ſhrubby, ſmooth, large, branching, ſcandent. *Leaves* roundiſh, five-angled, not lobed, ſmooth on both ſides, ſcarcely denticulate, obtuſe, alternate, petioled. *Flowers* large, whitiſh, androgynous, lateral; peduncles one-flowered. *Berry* roundiſh, red, ſmooth, five-celled. *Seeds* few, oblong, obtuſe, compreſſed. Native of India and Cochinchina. Introduced into England in 1783, by Mr. I. Græfer; into France, by M. Sonnerat. 10. B. *cordifolia*. Linn. "Leaves cordate, oblong, five-lobed, toothed, ſcabrous; petioles long, with two teeth at the baſe of the leaf." *Stem* angular, rough. Native of Ceylon. La Marck ſuſpects it to be a variety of the preceding. 11. B. *Maderaſpatana*, Berg. cap. 351. *Cucumis Maderaſpatana*. Linn. "Leaves cordate-triangular, toothed, ſcabrous; berries globular, axillary, in pairs." La Marck. *Stem* ſlender, angular, thinly ſprinkled with ſmall callous protuberances. *Leaves* longer than the petiole, toothed at the edges, ſlightly villous beneath, green, and rather rough. *Flowers* ſmall, axillary, with a villous calyx, growing two or three together on very ſhort peduncles. *Berries* globular, many-ſeeded. A native of the Eaſt Indies. La Marck ſays, that it is certainly a bryony. 12. B. *ſcabrella*. Linn. fil. 424. "Leaves cordate, angular, and lobed, callous-hiſpid; *tendrils* ſimple; *berries* globular; *ſeeds* muricate." Martyn. Whole plant very ſcabrous. *Stems* five-cornered, hiſpid. *Tendrils* ſimple. *Leaves* blunt, unequally toothed, a little curled at the edge; petioles hiſpid. *Peduncles* many; axillary ſhort. *Calyx* bell-ſhaped, five-toothed. *Corollas* ſmall, very like thoſe of *melothria*, yellow. It has altogether the ſtature of *melothria*, but the whole plant is hiſpid and rugged, and has the ſtamens of bryony. A native of the Eaſt Indies found by Dr. Kœnig, and introduced into England in 1781, by ſir Joſeph Banks, bart. La Marck deſcribes a plant under the ſame ſpecific name, which he thinks nearly allied to the preceding, with a doubt whether it be the *ſcabrella* of the younger Linnæus. It differs from Martyn's plant in having its berries perfectly ſmooth; a circumſtance which the younger Linnæus has left undetermined. La Marck's deſcription was made from a dried ſpecimen. 13. B. *ſcabra*. Linn. fil. 423. "*Leaves* cordate, angular, toothed, callous-pointed above, villous underneath, ſcabrous on both ſides. *Tendrils* ſimple. *Berries* globular, ſmooth." Found at the cape by Thunberg, and Maſſon, and introduced into England in 1774. La Marck does not notice this ſpecies, unleſs it be his *ſcabrella*. 14. B. *nana*. La Marck. "Lower leaves cordate-roundiſh, very entire; upper ones deeply three-lobed; lobes obtuſe." Allied to B. *Africana*, but much ſmaller, and with leaves leſs deeply cut. *Stems* ſlender, a little villous, ſcarcely more than a foot and a half high. *Leaves* alternate-petioled, green, ſmooth above, ſcabrous, with callous points beneath. Native of Africa. Deſcribed from a living plant without flowers in the Royal garden at Paris. 15. B. *Abyſſinica*. La Marck. "Leaves large, cordate, toothed; upper ones lobed-angular; petioles and peduncles very villous." *Stem* ſix or eight feet high, villous, eſpecially near the top. *Leaves* ſoft, almoſt ſmooth, deep green above, a little glaucous beneath; the lower ones cordate and toothed, the upper ones with four or five angular, unequal lobes. *Flowers* yellowiſh, axillary, in pairs; peduncles ſimple, ſhort. *Corolla* five-parted, ſpreading, veined. A native of Africa. Deſcribed from a living plant in the Royal garden at Paris. 16. B. *Americana*. La Marck. "Leaves large, cordate, three-lobed; berries oval, with two or threee ſeeds." *Root* tender, white, a little bitter. *Stems* long, angular, twining, jointed, with a leaf, a tendril, and a flower at each joint. *Leaves* petioled, a little rough, with a few rather ſpinous teeth, and reſembling thoſe of the common fig. *Flowers* pedunculate, with five diviſions, greeniſh without, white within. *Berries* oval, about the ſize of an olive, red. *Seeds* two or three, bedded in a ſpongy pulp. Plumier's MSS. A native of the Antilles. 17. B. *Japonica*. Thunb. "Leaves cordate, undivided, and angular, toothed, unarmed-hiſpid." Lobes of the leaves angular, ſharp, with very minute hairs on the upper ſurface, pale underneath, dotted with ſcales, an inch long. It creeps on walls. Native of Japan. 18. B. *racemoſa*. Miller. Plum. pl. 83. t. 97. "Leaves cordate, three-lobed, the upper ones ovate and ſomewhat rugged; flowers in racemes; berries nodding, oval." A native of Jamaica. 19. B. *verrucoſa*. Ait. Hort. Kew. 3. 385. "*Leaves* cordate, angled; the upper ſurface and the veins underneath callous ſcabrous; the calloſities remote; tendrils ſimple; berries globular." 20. B. *latebroſa*. Ait. Hort. Kew. 3. 384. "Leaves ſubtrilobate, hairy, drawn to a point at the baſe." This and the foregoing were obſerved by Maſſon in the Canary iſlands, and introduced here in 1779. The latter is eaſily diſtinguiſhed from its congeners by the leaves not being *in the leaſt cordate* at the baſe, but decurrent along the petioles. 21. B. *amplexicaulis*. La Marck. "Stem angular, ſmooth; leaves flat, cordate, ſubangular, embracing the ſtem; berries ſolitary, acuminate." *Stems* ſlender, ſcandent; leaves alternate, cordate, ſlightly angular, ſmooth on both ſides, dotted above, glaucous below, on ſhort petioles; the upper ſometimes divided into ſtraight diverging lobes. *Flowers* ſmall, axillary, ſolitary, peduncled. *Germ* ſharp-pointed at the ſummit. *Berry* fleſhy, acuminate, very ſmooth, nearly the ſize of a hazel nut. A native of the Eaſt Indies, communicated by M. Sonnerat, and deſcribed from a dried ſpecimen. 22. B. *haſtata*. Martyn. Lour. Cochinch. 594. "Leaves haſtate, edged with little teeth, ſmooth; peduncles many-flowered." *Stem* herbaceous, ſlender, ſcandent, cirrhoſe. *Flowers* androgynous, white, axillary. *Calyx* none. *Corolla* tubular, with a five-parted, upright border. *Filaments* placed at the bottom of the corolla, with three alternate, warted glands. *Berry* ovate, acute, ſmall, red, one-celled; containing a few ovate, arilled ſeeds. Native of China about Canton. 23. B. *triloba*. Martyn. "Leaves three-lobed, five-nerved; ſtipules roundiſh, concave; peduncles one-flowered." *Stem* ſhrubby, grooved, climbing by trifid tendrils. *Leaves* cordate, ſerrate-repand, ſmooth on both ſides. *Stipules* ſerrate. *Flowers* androgynous, white, axillary, ſolitary. *Berry* ovate, ſharpiſh, ſmooth, yellow, an inch and a half long, five-celled, many-ſeeded. Native of Cochinchina. 24. B. *Cochinchinenſis*. Martyn. Lour. Cochin. 595. "Leaves five-cornered, rough; berries three-celled, ten-cornered." *Stem* herbaceous; four-grooved, branching, ſcandent, cirrhoſe. *Leaves* cordate, toothed, alternate, petioled. *Flowers* androgynous, white, large, axillary, ſolitary, on long peduncles. *Calyx* one-leafed; the tube at bottom cylindrical, at top ovate, dilated; border five-cleft with linear ſegments. *Corolla* almoſt wheel-ſhaped, fixed to the mouth of the calyx; ſegments ovate-oblong. *Filaments* placed on the middle of the tube of the calyx. *Anther* one, large, oblong-ovate, placed on the three filaments in form of a tripod. *Germ* inferior, ovate-oblong, grooved. *Style* filiform, ſhorter than the tube. *Stigma* oblong, three-cornered, trifid at the tip. *Berry* ovate, ſharpiſh at both ends, red, ſmooth. *Seeds* ovate-oblong, compreſſed, ſmooth. Profeſſor Martyn obſerves, that it differs from the other bryonies, but muſt remain here, unleſs it be made to conſtitute a new genus.

Propagation and Culture. The exotic ſpecies require the protection of the bark or dry ſtove, according to the temperature of their native climate. They are propagated by ſeeds ſown on a hot bed, and tranſplanted into pots filled with light freſh earth. Several of them will endure the open air in ſummer, but in winter muſt be ſheltered, and ſhould then have little water. They generally flower in July, and in favourable ſummers will ripen their ſeeds. Thoſe which are annual muſt be ſown on a hot-bed early in the ſpring, and, when about three inches high, tranſplanted into ſmall pots; afterwards ſhifted into larger pots, and placed in the bark-ſtove, where their branches may be trained to the wall, or againſt an eſpalier, that they may have ſun and air, without which they will not produce fruit. When full of fruit, they make a pretty variety in the ſtove. Miller.

Medical and Economical Uſes. The freſh root of the common bryony, taken up in the beginning of ſpring, abounds with a thin milky juice, which may be collected, for two or three days ſucceſſively, by baring the root of its earth, cutting the top tranſverſely, and forming a cavity in the middle to receive it. Both the root in ſubſtance, and the juice, have a diſagreeable ſmell and a nauſeous, bitter, biting taſte: applied for ſome time to the ſkin, they inflame, and even veſicate the part. On drying the one, or inſpiſſating the other, they loſe moſt of their acrimony, and nearly the whole of their ill ſcent. In ſummer, the root is much leſs juicy and powerful. This ſtrong and irritating cathartic, though now ſeldom preſcribed, is ſaid to be of great efficacy in evacuating ſerous humours; and has chiefly been employed in hydropical diſorders; but is reported to have good effects alſo in aſthma, mania, and epilepſy. In ſmall doſes it operates as a diuretic, and is reſolvent and deobſtruent; given in powder, from a ſcruple to a dram, it proves ſtrongly purgative; the juice, in doſes of a ſpoonful or more, has ſimilar effects; but is more gentle in its operation. An extract, prepared by water, acts more mildly and with greater ſafety, and may be given from half a dram to a dram. Externally the freſh root has been employed in cataplaſms as a reſolvent and diſcutient, alſo in iſchiadic and other rheumatic affections. Woodville, Med. Bot. vol. iii. p. 518. A decoction made with one pound of the freſh root is the beſt purge for horned cattle. Withering. Boſc obſerves (Nouv. Dict.) that it has much affinity with the root of jatropha manihot, and that a wholeſome capava may be made of it by the ſame proceſs as is employed in the Weſt Indies on the manihot. Beaumé was the firſt who diſcovered, that, when grated in water, it yields a fecula exactly the ſame with that of the potatoe. During the ſcarcity at the time of the French revolution, Boſc himſelf often eat of it, and found it very nouriſhing. He could never entirely deprive it, by maceration, of its peculiar ſmell and taſte; but the unpleaſantneſs was overcome by a pretty high ſeaſoning. The root muſt be gathered for this purpoſe in autumn and winter; and a ſingle one will often be a ſufficient breakfaſt for one perſon. The root of B. *Abyſſinica* boiled is ſaid to be eaten in its native country.

BRYONIA (Plumier). See MELOTHRIA *pendula*, and RAJANIA *haſtata*.

BRYONIA *alba* (Sloane Jam.) See CISSUS *ſicyoides*, *acida et trifoliata*.

BRYONIA *nigra* (Sloane Jam.) See TOURNEFORTIA *volubilis*.

BRYONIA (Dal. Pharm.) See CONVOLVULUS JALAPA.

BRYONIA (C. Bauh.) See TAMUS.

BRYONIA, in *Conchology*, a ſpecies of STROMBUS, about ſeven inches in length, fuſcous, variegated with white and blue in clouds. This ſhell is ſpecifically deſcribed as being of a conic form, with a mucronate, eight-dentated lip, and knotty ſpire. Deſcribed by Liſter.

This ſhell is extremely rare. Gmelin is in doubt whether it belongs to the Strombus genus. Native place unknown.

BRYONIÆ SIMILIS (Pluk.) in *Botany*. See DIOSCOREA *villoſa*.

BRYONIOIDES (Dill. Elth.) See SICYOS *angulata*.

BRYONIOIDES (Pluk.) See CISSUS *acida*.

BRYUM, (from βρυω, germino, pullulo,) firſt uſed as a generic name by Dillenius in his catalogue of plants in the neighbourhood of Gieſſen, printed at Frankfort on the Mayne in 1717, introduced by him into his edition of Ray's Synopſis 1724, and finally illuſtrated with full deſcriptions and figures of all the then known ſpecies in his admirable hiſtory of Moſſes, publiſhed at Oxford 1741. It was given to a family of moſſes diſtinguiſhed by the following characters. Stems generally erect, and little if at all branched. Peduncles either terminal, or ſpringing directly from the ſtemleſs root; and when apparently lateral proceeding from the termination of the laſt year's ſtem, not ſurrounded at its baſe, like hypnum, with a perichætium or ſcaly involucrum, but having inſtead of it an oblong knob or tubercle. Capſules when young covered with a ſmooth calyptra. It was taken up by Linnæus in his Flora Lapponica and Genera Plantarum, both publiſhed in 1737, and continued in all his ſubſequent works, with no material change of the original generic character. Dillenius enumerates eighty one ſpecies in his Hiſtoria Muſcorum, ſixty-one of which appear as Engliſh plants in the third edition of Ray's Synopſis; but in the Species Plantarum the number is reduced to thirty-two, many of Dillenius's ſpecies being conſidered only as varieties, and thoſe which appear to be dioicous being removed by Linnæus to Mnium. The twelfth edition of the Syſtema Naturæ has only thirty-one, the B. capillare of the Species Plantarum being alſo removed to Trinium. The number has ſince been greatly increaſed, ſo that Dr. Withering in the third edition of his Botanical Arrangement reckons ninety-two Britiſh ſpecies.

Hedwig, in his new ſyſtem of moſſes which is generally received in Germany, and is beginning to make its way in England through the powerful influence of Dr. Smith and Mr. Dawſon Turner, has contracted the genus diſtinguiſheb yd this name within much narrower limits, taking out of it his Gymnoſtomum, Anictangium, Encalypta, Leerſia, Grimmia, Weiſſia, Trichoſtomum, Didymodon, Cynontodium, Tortula, Barbula, Bartramia, and part of his Splachnum, Fiſſidens, and Dicranum; and confining it to ſuch ſpecies as have the following character. *Periſtome*, or fringe ſurrounding the mouth of the capſule, double; *outer* toothed, teeth ſixteen acute; *inner* ciliate; cilia difform, ariſing from a keeled membrane. *Male Flower*, capituliform, dioicous. It has however ſince been again extended with various modifications by different authors. Schreber includes in it Hedwig's Mnium and Webera, with this character. *Capſule*, ovate-oblong. *Periſtome*, double; *outer* with ſixteen broadiſh acute teeth; *inner* membranaceous, plaited and keeled, laciniate, with alternate broadiſh and capillary diviſions. *Maſc.* capitate, or diſcoid, or gemmaceous. Dr. Smith's Bryum comprehends Webera, Pohlia, and Meeſia; and Mr. Turner adds Mnium. Dr. Smith's generic character ſtands thus: *capſule*, ovate-oblong, not furrowed. *Periſtome*, *outer* with ſixteen teeth dilated at the baſe; *inner* membranaceous, variouſly toothed and laciniate. *Calyptra* not furrowed. Pedicell terminal. He enumerates thirty-three Britiſh ſpecies.

1. B. *nutans*, ſilky pendulous thread-moſs. Schrebet, Swartz, Roth, Ehrt.; (*ſericeum*, With. Hull. Sibth.) Dill. t. 50. f. 60. Eng. Bot. 1240. "Stem generally ſimple; leaves lanceolate acute, keeled; capſule obovate, pendulous, obtuſe." *Stems* growing in thick tufts, erect, ſhort, often ſimple, moſt leafy at their ſummits. *Leaves* pale green, gloſſy, lanceolate, acute, keeled, one-nerved, tipped with a ſerrulate point. *Fruit-ſtalk* terminal, ſolitary, erect, ſometimes two inches long, gloſſy, tawny purple, paler upwards. *Capſule* pendulous, obtuſe, a little attenuated or elongate at the baſe, ruſty-coloured, not gloſſy. *Lid* convex, with a ſhort, blunt point. *Outer fringe* yellowiſh; inner variouſly laciniated. Perennial. 2. B. *aureum*, gold thread-moſs, (Mnium pyriforme, Linn.) Dillen. tab. 50. f. 60. Eng. Bot. 389. "Stem perfectly ſimple; leaves ſetaceous, upper ones very long; capſule pendulous, pear-ſhaped, ſuddenly contracted about the middle." *Stems* in tufts, erect, ſimple, half an inch high, filiform. *Leaves* pale yellowiſh-green, capillary, looſe, keeled, very entire; upper ones very long, ſpreading in form of a ſtar. *Flowers* terminal. *Fruit-ſtalks* ſolitary, erect, an inch long, capillary, of a gold colour, gloſſy, ſomewhat waved. *Capſule* gold coloured, highly gloſſy, pendulous, pear-ſhaped, rather blunt, attenuated from the baſe to the middle; lid rather conic, ſhort, ſomewhat pointed; calyptra awl-ſhaped, white. Fringe yellow without; white within, teeth in a double ſeries. Annual. 3. B. *elongatum*, Dickſ. Faſc. 2. 8. (Pohlia Hed. Mnium Pohlia Hoff.) "Stem generally ſimple; leaves linear-lanceolate, thickened at the edge. Capſule rather nodding, cylindrical, elongate at the baſe." *Stem* erect, ſhort, ſimple, but at length a little branched. *Leaves* deep green, ſpreading, lanceolate or linear-lanceolate, acute, one-nerved, very entire, curled when dry. *Fruit-ſtalks* an inch and a half long, ſolitary, nearly erect, purple, yellow near the top. *Capſule* a little nodding but not pendulous, cylindrical, curved, brown, a little contracted at its orifice, lengthened at its baſe into an obconical apophyſis of nearly its own length; lid conical, acute, ſhort; fringe outer very ſhort, brown; inner white, toothed in a ſingle ſeries. Perennial. Obſ. Dillenius confounded this ſpecies with nutans. 4. B. *trichodes*, long, capillary, thread-moſs, Linn. (Mnium uliginoſum, With. Meeſia uliginoſa, Hed.) Dill. Tab. 49. f. 58. "Stem generally ſimple; leaves linear, obtuſe; capſule obovate, incurved, ſomewhat nodding; fruit-ſtalk very long." *Stems* in tufts, ſcarcely an inch high, ſometimes much ſhorter, erect, black with a ferruginous down at the baſe. *Leaves* erect but ſpreading, of a full yellow green, gloſſy, obtuſe, very entire, keeled. *Fruit-ſtalks* terminal, ſolitary, very long, erect, capillary, red, but brown at the baſe, and yellowiſh at the top. *Capſule* inclining, obtuſe on a ſhort apophyſis. Lid conical, obtuſe, very ſhort; fringe outer ſhort, inner reticulated twice as long as the outer. Calyptra awl-ſhaped, ſtraight. Perennial. 5. B. *dealbatum*, pale-leaved thread-moſs (Meeſia Swartz, Hed.) Dickſ. Tab. 5. f. 3. "Stem very ſhort, ſimple; leaves lanceolate, reticulated, a little ſerrated at the top; capſule obovate, nodding." *Stems* in tufts. *Leaves* pellucid, acute, one-nerved. *Fruit-ſtalks* ſolitary, terminal, erect, an inch and a half long, red. *Capſule* curved, opake, with a very contracted apophyſis. Lid convex, with a ſhort point, red; fringe outer ſhort, ferruginous; inner reticulated, twice as long as the outer. 6. B. *cylindricum*, Dickſ. Tab. 11. f. 4. "Stem ſimple; leaves lanceolate-linear, ſerrated towards the top; capſule rather erect, cylindrical." *Stem* ſcarcely half an inch high, erect. *Leaves* of a pleaſant green colour, erect but ſpreading, acute, keeled, one-nerved. *Fruit-ſtalk* erect, terminal, an inch long, red. *Capſule* pale brown, ſmall, ſlender, with an obconic apophyſis of its own magnitude, fringe pale. 7. B. *carneum*, Linn. (B. delicatulum Hed. Mnium carneum Hoff.) Dill. Tab. 50. f. 69. "Stem generally ſimple; leaves lanceolate, acute, very entire, reticulated, placed rather remote from each other; capſule pendulous, top-ſhaped." *Stems* not half an inch high, in tufts, erect, red. *Leaves* alternate, pale green, pellucid, reticulated, very entire, one-nerved. *Fruit-ſtalks* terminal, ſolitary, half an inch long, a little zig-gag, of a pale roſe colour. *Capſule* pendulous, fleſh-coloured, opake; lid conic, ſhort, obtuſe; fringe outer, ruſty brown; inner, yellowiſh, toothed in a double ſeries. 8. B. *alpinum*, Linn. Mant. Dill. Tab. 50. f. 64. "Stem branched, erect; leaves ovate-lanceolate, acute, imbricated; capſule oblong, pendulous." *Stems* in tufts, one or two inches high; branches erect, ſtiff, round, acute. *Leaves* imbricated denſely on all ſides, beautifully variegated with green and purple, gloſſy, very entire, pellucid, often with a very red nerve, when dry preſſed cloſe to the ſtem. *Fruit-ſtalks* lateral, ſolitary, an inch long, red, ſtraight, riſing higher than the ſtem. *Capſules* obovate-cylindrical, red when ripe; lid hemiſpherical, umbonate; fringe white or roſe coloured. 9. B. *cæſpititium*, Linn. (Mnium cæſpititium With. Relh. Abb.) Dill. Tab. 50. f. 66. except the variety F. G. leſſer matted thread-moſs. "Stem branched at the baſe, matted, leaves ovate-lanceolate, flat, ending in a hair; capſule obovate, pendulous." *Stems* forming a denſe tuft, branched from the baſe; branches trilinear, ſimple, ſpreading, leafy, obtuſe. *Leaves* of a pleaſant green, very entire, one-nerved, the upper one larger, ſpreading in form of a ſtar. *Fruit-ſtalks* from the baſe of the branches, about an inch and a half long, capillary, erect, purple at the baſe, green at the top. Lid convex, umbonate, fringe yellow, teeth acuminate. 10. B. *bicolor*, Dickſ. Faſc. 4. 16. Dill. Tab. 50. f. 66. F. G. "Stem very ſhort, branched at the baſe; leaves ovate-lanceolate, acuminate; capſule ovate, obtuſe, pendulous." *Stems* ſcattered, with long fuſcous roots. *Leaves* yellowiſh-green, ſmall, ſpreading, flat, very entire, a little pointed but not ending in a hair. *Fruit-ſtalks* from the baſe of the branches, half an inch long, erect, very red, gloſſy. *Capſule* rather large, thick, red at the baſe, fulvous at the top, often entirely blood red; lid hemiſpherical, umbonate, gloſſy, fulvous or ſcarlet; fringe nearly reſembling that of B. carneum. 11. B. *argenteum*, Linn. (Mnium argent. Hoff.) ſilvery thread-moſs. "Stem branched at the

baſe, matted; leaves ovate, concave, ending in a hair, imbricate; capſule oblong, pendulous. *Stems* in convex tufts, half an inch high, branched from the baſe; branches thread-ſhaped, erect. *Leaves* with a ſilvery gloſs, cloſely imbricated, very entire, one-nerved, ending in a ſhort hair. *Fruit-ſtalks* from the baſe of the branches, ſcarcely an inch long, capillary, gloſſy, purple at the baſe, yellow at the top. *Capſule* ſhort, reddiſh. Lid conical, very ſhort, fulvous, fringe yellow. 12. B. *Zierii*, Dickſ. Faſc. 2. Tab. 4. fig. 10. Eng. Bot. 1021. "Stem erect, branched; leaves ovate, concave, imbricated, pointed; capſule club-ſhaped, drooping." Perennial. *Stems* in tufts; branches round, obtuſe. *Leaves* ſoon white or fleſh-coloured, gloſſy, very entire, one-nerved. *Fruit-ſtalks* from the baſe of the branches, not an inch long, nearly erect, reddiſh. *Capſule* ſcarcely pendulous, before maturity club-ſhaped, green; when ripe obovate, or ovate, with an obconic apophyſis; lid conical, ſhort; fringe red. Calyptra awl-ſhaped, acuminate. 13. B. *julaceum*, (argenteum β. Linn. Mnium holoſericeum Hoff.) Dill. Tab. 50. f. 63. "Stem branched at the baſe; leaves ovate, concave, imbricate, obtuſe; capſule club-ſhaped, pendulous." Perennial. *Stem* larger than in B. argenteum; branches ſlender, erect, acute. *Leaves* gloſſy, yellowiſh-green, (not ſilvery,) cloſely imbricated, ſmall, very entire. *Fruit-ſtalk* from the baſe of the branches, an inch or more long, a little flexuoſe, red. *Capſule* brown; lid convex, umbonate, gloſſy, pale brown. 14. B. *capillare*, Linn. Sp. Pl. (Mnium Linn. Fl. Suec. With., &c.) "Stem branched at the baſe, matted; leaves obovate, ending in a hair, twiſted when dry; capſule club-ſhaped, pendulous." Perennial. Reſembling B. cæſpititium but larger. *Branches* about an inch long, erect, thickened at the baſe, ſtellate. *Leaves* of a fine green, obtuſe, very entire, one-nerved. *Fruit-ſtalks* an inch and a half long, firm, red. *Capſule* obtuſe, between cylindrical and club-ſhaped, large; lid ferruginous, gloſſy, hemiſpherical, with a ſhort, ſtraight point, outer fringe fulvous with acuminate teeth. 15. B *annotinum*, ſummer thread-moſs (Mnium annotinum Linn.) Dill. Tab. 50, f. 68. "Stem branched at the baſe; leaves ovate-lanceolate, pellucid, keeled, ſomewhat ſerrated; capſule obovate, pendulous." Perennial. *Stems* red, erect, leafy; male ſimple, often elongate, gemmiparous; feminine branched. *Leaves* fine green, under a lens reticulate, keeled, one-nerved, acute. *Fruit-ſtalks* terminal, ſolitary, an inch and half long, red. *Capſule* nearly pear-ſhaped; lid conic, ſhort, acute, fleſh-coloured; fringe pale. 16. B. *compactum*, Dickſ. Faſc. 4. Tab. 11. fig. 11. "Stem divided at the baſe; leaves lanceolate, keeled, ſerrated near the tip; capſule ovate, pendulous." Perennial. *Stems* in denſe tufts, half an inch high, ſometimes ſimple, naked below, red. *Leaves* yellowiſh-green, gloſſy, acute, ſomewhat revolute, ſerrated from the middle; the lower ones ſhorter and nearly heart-ſhaped. *Fruit-ſtalks* terminal, not an inch long, a little flexuoſe, ferruginous. *Capſule* ſhort, dilated at the margin, almoſt top-ſhaped; lid convex, umbonate. 17. B. *attenuatum*, ſlender, proliferous thread-moſs. Dickſ. Faſ. 4. Tab. 10. f. 8. "Stem ſimple, proliferous; leaves ſtellate, ovate, very entire, reticulate; capſule club-ſhaped, cylindrical, erect." Perennial. *Stems* aſcending, half an inch long, filiform, often throwing out new ſtems which take root. *Leaves* crowded, acute, one-nerved, pellucid. *Fruit-ſtalks* terminal, erect, half an inch long, yellowiſh. *Capſules* erect, ſlender, pale brown, contracted at the orifice; lid convex, without a point. 18. B. *hornum*, ſwanneck thread-moſs (Mnium hornum Linn.) Dill. Tab. 51. f. 71. Curtis Tab. 71. "Stem ſimple; leaves lanceolate, denticulate-ſerrated; fruit-ſtalk curved; capſule ovate, drooping." Perennial. Larger than the preceding ſpecies. *Stems* in tufts, ſimple, leafy, red, ferruginous and tomentoſe at the baſe. *Leaves* fine green, pellucid, membranous, ſpreading acute, with a ſtrong red nerve, waved when dry. *Maſculine flower* large, terminal, diſcoid, ſurrounded with large obtuſe leaves; feminine on a different plant. *Fruit-ſtalk* terminal, ſolitary, very long, ſtraight, and red at the baſe, curved, and yellowiſh at the top, thickened under the capſule. *Capſule* large, drooping, turgid, retuſe, of a pale ruſt colour, with a ſcarlet orifice; lid hemiſpherical, with a ſhort point; outer fringe of a citron colour, with acute teeth, inner white. 19. B. *crudum*, (Mnium crudum, Linn.) Dill. Tab. 51 f. 70. "Stem ſimple; leaves lanceolate, acute, very entire; upper ones narrow, denticulate; capſule oblong, drooping." Perennial. Tranſparent-green thread-moſs. *Stems* in tufts, ſimple, erect, ſcarcely an inch high, naked at the baſe, dark purple. *Leaves* crowded at the top of the ſtem, gloſſy, of a fine green, pellucid, ſpreading, flat, one-nerved; lower ones ſhorter, upper narrower, and generally ſerrated near the tip. *Fruit-ſtalk* terminal, erect, an inch long, red. *Capſule* ferruginous, ſcarcely red at the orifice; lid hemiſpherical, with a ſlight tip, yellowiſh; fringe citron-colour; calyptra recurved, deciduous. 20. B. *marginatum*. Dickſ. Faſc. 2. Tab. 5. fig. 1. "Stem ſimple; leaves lanceolate, acute, denticulate, thickened at the margin; capſule ovate; lid conic." Thick-edged thread-moſs. Perennial. *Stems* an inch high, erect, red. *Leaves* with a red nerve and margin. *Fruit-ſtalks* ſolitary, erect, an inch long, fleſh-coloured. *Capſule* pendulous, retuſe; lid conic, awl-ſhaped; calyptra awl-ſhaped, reddiſh, recurved. 21. B. *interruptum*. Dickſ. Faſc. 4. Tab. 2. f. 6. "Stem branched, interruptedly leafy; leaves lanceolate, acute, completely ſerrulated; capſule pear-ſhaped, rather erect." Interrupted thread-moſs. Perennial. *Stems* in tufts, an inch and half high, branched in a determinate direction, red. *Leaves* faſciculated, yellowiſh-green, gloſſy, reticulated, one-nerved; lower ones remote, ſmall, ſhort. *Fruit-ſtalks* terminal, erect, red, ſcarcely an inch long. *Capſule* brown, dilated at the mouth; lid hemiſpherical, obtuſely umbonate. 22. B. *nigricans*, Dickſ. Faſc. 4. Tab. 2. f. 10. "Stem branched at the baſe; leaves lanceolate, ſtiff, ſerrated towards the tip; capſule top-ſhaped, pendulous." Dark-green thread-moſs. Perennial. *Stems* in tufts. *Leaves* dark-green, imbricated, acute, keeled, dilated at the baſe. *Fruit-ſtalks* terminal, ferruginous, curved at the top. *Capſules* with a ſpreading orifice; lid convex, obtuſely umbonate; fringe yellow. 23. *Bryum? inclinans*. Dickſon Faſc. 4. Tab. 2. f. 9. "Stems branched; leaves briſtle-ſhaped, very entire, curled when dry; capſule ovate, inclining; apophyſis ſmall." Inclining curled thread-moſs. Perennial. *Stem* erect. *Leaves* looſely imbricated, keeled, dilated at the baſe. *Fruit-ſtalks* lateral, erect, half an inch long. 24. B. *cubitale*, Dickſ. Faſc. 2. Tab. 5. f. 2. "Stem aſcending, a little branched; leaves lanceolate, very entire, decurrent; fruit-ſtalk knee-jointed; capſule club-ſhaped, pendulous." Elbow-ſhaped thread-moſs. Perennial. *Stems* two or three inches high, leafy, clothed with a ruſty down. *Leaves* ſpreading, fine green, pellucid, acute, thickened at the edge with a ſtrong red nerve. *Fruit-ſtalk* terminal, ſolitary, three or four inches long, yellowiſh-brown, gloſſy. *Capſule* attenuated at the baſe. *Obſ.* The largeſt bryum hitherto diſcovered. 25. B. *ventricoſum*, (Bryum triquetrum. Hudſ. Hull. Mnium Pſeudo-triquetrum Hed. Hoff. With.) Dickſ. Faſc. 1. p. 4. Dill. Tab. 51. f. 73. "Stem branched in a determinate direction; branches aſcending; leaves alternate, lanceolate, ſerrated at the tip; capſule ventricoſe, pendulous."

Swelling bog-thread-moſs. Perennial. *Stems* in tufts, with long roots, clothed with a ruſty down; branches numerous, aſcending, red, looſely leaved. *Leaves* pale green, alternate, erect, ſpreading, acute, one-nerved, twiſted when dry. *Fruit-ſtalks* terminal, or from the tip of the branch of the preceding year, an inch and a half or two inches long, erect, purple at the baſe, yellowiſh at the top. *Capſule* ovate, ſhort, a little contracted under the orifice; lid convex, with a ſhort point; fringe yellow. 26. B. *binium*. Schreb. Roth. Swartz. (B. triquetrum β Hudſ. Mnium Binium Hoff.) Dill. Tab. li. f. 73. "Stem branched; leaves alternate, linear-lanceolate, a little ſerrated at the top; capſule obovate, club-ſhaped, pendulous." Long-ſtalked bog-thread-moſs. Perennial. Larger than the preceding. *Stem* two or three inches high, irregularly branched, of a dark ruſty colour. *Leaves* elongate, yellowiſh green. *Fruit-ſtalks* from the end of the two or three year-old branches, two or three inches long, dark purple, gloſſy, ſometimes knee-jointed towards the baſe. *Capſule* narrowed at the baſe, contracted under the orifice, twice as large as in the preceding; fringe yellow. 27. B. *turbinatum*. Swartz. Roth. (B. triquetrum γ Hudſon, Mnium nutans With. Hull. Mnium turbinatum Hed. Hoff.) Dill. Tab. li. f. 74. "Stem branched, leaves ovate, awned, very entire, capſule pear-ſhaped, pendulous." Pear-ſhaped bog-thread-moſs. Perennial. *Stems* ſcarcely an inch high, in tufts; leaves fine green, ſpreading, alternate, approximate, one-nerved. *Fruit-ſtalks* an inch long, purpliſh brown, a little flexuoſe. *Capſule* attenuated at the baſe; lid convex, without a point; fringe ruſt-coloured. 28. B. *ſtellare*. Roth. (B. ſerpyllifolium, ε Hudſ. Mnium proliferum, Var. 2. With. Mnium ſtellare, Hed. Hoff.) Dill. Tab. lii. f. 78. "Stem branched; leaves ovate, acuminate, reticulated with round meſhes; the upper ones ſerrate, ſtellated; capſule oblong, drooping." Starry-leaved-thread-moſs. Perennial. *Stem* determinately branched, one or two inches high. *Leaves* fine green, with a ſtrong red nerve, ſcarcely reaching the tip. *Fruit-ſtalk* terminal, about two inches long, a little curved, thickened at the tip; lid hemiſpherical. 29. B. *cuſpidatum*. Swartz. Roth. Hull. Sib. (Mnium ſerpyllifolium β Linn. M. cuſpidatum Hedw. Hoff. With. B. ſerpyllifolium γ Hudſ.) Dill. Tab. liii. f. 79. "Stem ſimple; barren one, procumbent, a little branched; leaves ovate, ſerrated; capſule ovate; lid hemiſpherical." Pointed-leaved thyme-thread-moſs. Perennial. *Stems* leafy, of two kinds; the barren ones procumbent, throwing out roots, three inches or more long; fertile ones erect, ſimple, an inch long. *Leaves* fine green, pellucid, under a lens minutely reticulated, alternate, broad-ovate, ſomewhat waved, acutely ſerrated, pointed with a ſtrong pale nerve. *Fruit-ſtalk* terminal, an inch long, flexuoſe, roſe-coloured. *Capſule* pendulous, ſhort, ventricoſe, retuſe, yellow, with a ſcarlet orifice; lid without a point; fringe lemon-coloured. 30. B. *punctatum*. Roth. Hull. Sibth. (Mnium ſerpyllifolium, Linn. M. punctatum, Hedw. With. B. ſerpyllifolium, Hudſ. Swartz). Dill. Tab. liii. f. 81. Eng. Bot. 1183. "Stem nearly ſimple; leaves obovate, very entire, dotted, reticulated; capſule elliptical; lid awl-ſhaped." Dotted-leaved thyme-thread moſs. Perennial. Habit of the preceding, but diſtinguiſhed at once by its dotted leaves. *Stems* an inch and half high, leafy, red, often flexuoſe. *Leaves* broadly ovate, very obtuſe, a little pointed, thickened at the edge, red, repand, with a ſtrong red nerve; the upper ones ſtellate. *Fruit-ſtalks* terminal, more than an inch long, purpliſh, bowed at the top; *capſule* pendulous, green, with a purple orifice, finally brown; lid yellow, convex at the baſe, with a rather obtuſe recurved point. 31. B. *roſtratum*. Schrad. (Mnium punctatum, Var. ii. With. M. ellipticum. Hoff. B. ſerpyllifolium β Hudſ.) Dill. Tab. liii. f. 80. "Stem ſimple; leaves obovate-ſpatulate, ſerrulate; capſule ovate; lid awl-ſhaped." Long-beaked thyme-thread moſs. *Stem* ſhorter than in the preceding. *Leaves* leſs and narrower, not reticulated. *Fruit-ſtalks* ſolitary or aggregate, terminal, an inch and half long, fleſh-coloured purple at the baſe. *Capſule* pendulous, green fleſh-coloured at the mouth; lid yellow, convex at the baſe, with an obtuſe, recurved point, a little ſhorter than the capſule. 32. B. *roſeum*. Schreb. Swartz. Roth. (Mnium ſerpyllifolium γ Linn. M. proliferum, With. Hull. M. roſeum, Hedw. Weiſſ. B. proliferum, Sibth. B. ſerpyllifolium δ Hudſ.) "Stem ſomewhat proliferous; leaves crowded, ſtellate, ovate, acute, ſprinkled with ſmall dots, ſcabrous at the margin; lid conical." Roſaceous thyme-thread-moſs. Perennial. *Barren ſtems* elongate, procumbent, covered with ſmaller, obtuſe, alternate leaves. *Fertile ſtems* erect, an inch high, often proliferous, ſquamous, and without leaves below, leafy above. *Leaves* a little decurrent, flat, rough, or ſlightly crenulated at the margin. *Fruit-ſtalks* terminal, often aggregate, an inch and half or two inches long, ſtiff, red, gloſſy. *Capſule* pendulous, ovate-oblong, gloſſy; lid, on the authority of Dillenius, conical, ſhort. 33. B. *ligulatum*. Schreb. (Mnium ſerpyllifolium δ Linn. M. undulatum, Hedw. With. Bryum undulatum, Sibth. Turner.) "Stems ſimple, but finally branched at top; leaves oblong, waved, ſerrated; fruit-ſtalks aggregate." Long-leaved thyme-thread-moſs. Perennial. *Root* creeping. *Stems* erect, almoſt inclining to ſhrubby, leafy; barren ones elongate; fertile ones finally determinately branched; branches ſtellate aſcending. *Leaves* fine green, cloſe-ſet, alternate, decurrent, ſpreading, linear-oblong, obtuſe, one-nerved, acutely ſerrulate, ſoon growing flaccid when gathered. *Fruit-ſtalks* aggregate, two inches long, fulvous, gloſſy. *Capſule* pendulous, ovate, ſhort; lid conical, ſhort.

The ſyſtem of Hedwig does not ſeem likely at preſent to be received in France. La Marck, in the Dictionaire Methodique, does little more than enumerate and deſcribe the ſpecies of Linnæus, as they ſtand in the laſt edition of the Syſtema Naturæ. Boſc, in the Nouveau Dictionaire d'Hiſtoire Naturelle, publiſhed ſo lately as 1803, ſays, that the bryum of Linnæus is a very natural genus; but that the German botaniſts, who never think that they have genera enough, have exerciſed their ſkill upon it, and have formed out of it ſeventeen genera, moſt of them founded on characters which are ſcarcely diſcernible with the beſt lens. It muſt be acknowledged that there is ſome reaſon for the complaint; and we feel a pride in reflecting that our two great Engliſh cryptogamiſts have ſteered a middle courſe, and have produced a real improvement in the ſcience; avoiding at the ſame time the difficulties which are juſtly objected to by the French naturaliſt.

As Hedwig's new genus bartramia, which was formed entirely at the expence of Linnæus's bryum, has been omitted in its proper place, owing to the German ſyſtem of moſſes not having publicly received the powerful patronage of Dr. Smith and Mr. Turner, when that part of our dictionary was written, it cannot now be more properly introduced than as an appendix to the preſent article. The other genera will be found under their reſpective letters of the alphabet.

Bartramia, Hedw. Gen. Char. *Capſule* ſpherical, furrowed when ripe. *Outer fringe* of ſixteen teeth, dilated at the baſe; *inner* membranaceous, plaited, variouſly laciniated. *Calyptra* ſmooth; lid depreſſed.

Britiſh ſpecies. B. *halleriana*, Hedw. Swartz. Roth.

(Bryum laterale, Hudſ. Light. With. Hull. Dickſ. Ehrt. B. pomiforme, Var. i. Scop. Mnium laterale, Hoff.) Haller Hiſt. vol. iii. tab. xlvi. f. 8. Eng. Bot. 997. "Fruit-ſtalks lateral, curved, ſhorter than the leaf; leaves linear, awl-ſhaped, one-nerved, with an even ſurface." Lateral bartramia. Perennial. *Stems* in tufts, erect, two or three inches high, branched, leafy. *Leaves* ſpreading, denſe, of a fine green, rather inclining to one ſide, ſoft, thin, keeled, ſerrulated towards the tip, dilated at the baſe. *Fruit-ſtalks* axillary, ſolitary. *Capſule* globoſe, at length laterally contracted, and longitudinally marked with ſixteen ſtrong furrows, a little drooping, ferruginous; inner fringe plaited, almoſt entire, a little torn at the opening; lid convex, ſhort; calyptra conical, ſoon falling off. 2. B. *pomiformis*, Hedwig. Swartz. Roth. (Bryum pomiforme, Linn, &c.) Dill tab. xliv. f. 1. Haller tab. xlvi. f. 7. Moris. vol. iii. tab. vi. f. 6. "Fruit-ſtalks erect, longer than the ſtems; leaves awl-ſhaped, one-nerved." Apple bartramia. Perennial. *Stems* in denſe tufts, branched, faſtigiate, leafy, often an inch high. *Leaves* fine green, ſpreading, linear-awl-ſhaped, with a ſtrong nerve, ſerrulated near the tip, not much dilated at the baſe, ſtriated when dry. *Fruit-ſtalks* ſolitary, terminal at firſt, but ſoon becoming axillary, an inch, or an inch and a half long, red. *Capſules* erect, globoſe, green; when ripe brown, a little curved and drooping, longitudinally furrowed; fringe ſhort; outer red; inner very thin; lid convex, very ſhort; calyptra conic-awl-ſhaped, ſoon falling off. 3. B. *fontana*, Swartz, Smith, and Turner, (Mnium fontanum, Linn. Hedw. With. &c. Bryum fontanum, Hudſ. Sibth.) Dillen. tab. xliv. f. 2. Flor. Dan. 298. Eng. Bot. 390. "Fruit-ſtalks erect, longer than the ſtem; leaves ovate, very entire; branches faſciculated, erect, thread-ſhaped." Fountain bartramia. Perennial. *Stems* in denſe tufts, often a ſpan high, determinately branched, leafy, towards the bottom clothed with a ruſty down. *Leaves* yellowiſh green, imbricated on all ſides of the ſtem, ſhort, acuminate, keeled, one-nerved. *Flowers* dioicous, terminal; males forming a diſc, ſurrounded by larger leaves and new little branches. *Fruit-ſtalks* ſolitary, three inches high, red, ſpringing from the divarications of the branches. *Capſules* obliquely drooping; ovate-ſpherical, brown, with many furrows, lid convex, with a ſhort, acute, crooked point; fringe ſhort, brown; inner one in a double ſeries. 4. B. *arcuata*, Smith. (Mnium arcuatum and hypnum chryſocomum, Dickſ. Bryum arcuatum, Hall.) Dill. tab. xxxix. f. 36. Eng. Bot. 1237. "Fruit-ſtalks recurved; leaves lanceolate, one-nerved, furrowed, ſerrulated; branches ſcattered, ſpreading." Curve-ſtalked bartramia. Perennial. *Stems* erect, branched, leafy, clothed with a denſe ruſty down; branches numerous. *Leaves* imbricated but ſpreading, yellowiſh green, gloſſy, acuminate; *Fruit-ſtalks* ſolitary, terminal, at length lateral, ſhort, red, with a ſmall ſcaly perichætium. *Capſule* drooping, globoſe, green, gloſſy, furrowed; lid a little convex, with a ſhort, obtuſe point, ſcarlet; outer fringe ſhort, fulvous, with obtuſe teeth; inner membranaceous, white, with ſixteen diviſions, correſponding with the outer teeth.

BRYUM, *lactucæ folio*, a name given by ſome to the oyſter-green. See Tremella.

BRYUNE Bay, in *Geography*, lies on the eaſt ſide of Greenland, in N. lat. 65° 46′. In this bay is a little iſland called "Kangak" or Forehead, where a colony was founded in 1755, by Andrew Olſen, a factor belonging to the company of merchants. The harbour is one of the beſt and ſafeſt in the country, lying half a league from the open ſea, between two ſmall iſlands, but the adjacent country is barren, and has no rein-deer. Beſides the ordinary fiſh, ſeals, and birds, the ſea affords occaſionally the whale, which come here in January and February, but they are ſeldom taken by the Greenlanders, and never by Europeans, for want of proper boats and tackle.

BRZESC. See Brsest.

BRZESK or Birsetsk, a town of Lithuania, in a territory of the ſame name, one of the diſtricts of the province of Poleſia, called alſo the palatine of Brzeſkie, or Birſetſk, is ſeated on the river Bug, in a marſhy ſituation, and has a caſtle built upon a rock. Near it is a royal palace with a good garden. In this town is a famous Jewiſh ſynagogue, to which the Jews reſort from all the countries of Europe. A Greek biſhop reſides in this town, and a provincial diet is alſo held in it. N. lat. 52° 12′ E. long. 24°. In the month of October, 1794, a battle was fought near this town between the Ruſſians and the Poles: the battle laſted eight hours, and the Poles were totally defeated. Out of 13,000 of the beſt Poliſh troops, only 500 were made priſoners, as they refuſed quarter; and the reſt, 300 men excepted, were cut to pieces; ſo that the field of battle, for ſome miles, was covered with the dead.

BRZESNO, a town of Bohemia, in the circle of Boleſlau, 5 miles E. of Jung Buntzlau.

BRZEZANY, Bretany, or Brezan, a well built town, with a caſtle, of Poland, in the palatinate of Red Ruſſia, 24 miles N.N.E. of Halicz. N. lat. 49° 45′. E. long. 25° 20′.

BRZEZIN, a town of Poland, in the palatinate of Bielſk; 44 miles N.W. of Bielſk.

BRZEZINY, a ſmall town of Poland, in the palatinate of Lenczicz; 48 miles S.E. of Lençzicz.

BRZISTEW, a town of Bohemia, in the circle of Boleſlau; 11 miles S.E. of Jung Buntzlau.

BRZOSTECK, a town of Poland, in the palatinate of Sandomirz; 56 miles S.S.W. of Sandomirz.

BSURA, a river of Poland, which runs into the Viſtula, 12 miles E. of Plocſko.

BU, a town of France, in the department of the Eure and Loire, and diſtrict of Dreux, 2 leagues N.E. of it.

BUA, or the *Iſle of Partridges*, a ſmall iſland in the northern part of the Adriatic, near the coaſt of Dalmatia, joined to the town of Trau by a bridge, 20 miles W.N.W. of Spalatro.

BUADH-VAILL, *q. d.* mouth-piece of victory, called alſo, in the old Iriſh tales and romances, *Benwowen* and *Barr-vaill*, is ſuppoſed by Mr. Ouſley to have been a ſpecies of trumpet. It is made of a light fine-grained wood, probably willow, and is 6 feet 4 inches long; the wider end meaſures 3¼ inches diameter, from whence it gradually tapers to a point at the other end, where a mouth-piece is ſuppoſed to have been fixed. This inſtrument, which is particularly deſcribed and illuſtrated by figures in the fourth volume of the Iriſh Tranſactions, was found, in 1791, in the county of Mayo, lying horizontally in the body of a turf bog, at the depth of about 9 feet from the ſurface. The preciſe age of this inſtrument, the wood of which was perfectly ſound, is not aſcertained. Mr. Ouſley ſuppoſes it to have been at leaſt previous to the ſettlement of the Engliſh in Ireland, as it is not mentioned by Cambrenſis, or any ſubſequent author. Lord Dillon, on whoſe eſtate it was found, concludes, from the great accumulation of bog over it, that it muſt have been in the ſituation in which it was diſcovered for many ages, and this is further confirmed by the rudeneſs of its contrivance and workmanſhip, which indicates its remote antiquity.

BUALLT. See Builth.

BUAMACHUCO, a town of South America, in the country of Peru, and juriſdiction of Caxamarquilla, chiefly inhabited by Indians.

BUANES, a town of France, in the department of Landes; 5 miles W. of Aire.

BUARCOS, or BUARGAS, a town of Portugal on the ſea coaſt, in the province of Beira; 7 leagues S.W. of Coimbra.

BUARID, a ſmall iſland in the Red ſea, near the coaſt of Arabia; 4 miles W. of Loheia.

BUBALE, in *Zoology*, See BUBALUS.

BUBALINUS SERPENS, a name aſſigned by ſome authors to the *Anacandaya* of the Ceyloneſe, a very terrible ſort of ſerpent, according to report, common in that part of the world. It is moſt miſchievous among cattle, a circumſtance implied by the name it bears in India. The particular kind of ſerpent bearing this name is not exactly known to us.

BUBALIS. See ANTELOPE.

BUBALUS, the *Buffalo*. Gmelin deſcribes this animal, *Bos Bubalus*, after Linnæus, as having the horns reſupinate, or lying backwards, turned inwards, and flat on the front, or anterior part.

The buffalo appears to be ſo cloſely allied to our common ox, that without an attentive examination it might be eaſily miſtaken for a variety of that animal. In point of ſize it is rather ſuperior to the ox, and upon an accurate inſpection it is obſerved to differ in the ſhape and magnitude of the head, the latter being larger than in the ox; the forehead is more elevated, the muzzle of a longer form, much larger, ſquare, and leſs depreſſed. But it is chiefly by the ſtructure of the horns that the buffalo is diſtinguiſhed, theſe being of a ſhape and curvature altogether different from thoſe of the ox: they are of a gigantic ſize in poportion to the bulk of the animal, and of a compreſſed or depreſſed form, with a ſharp exterior edge; for a conſiderable length from their baſe theſe horns are ſtraight, and then bent ſlightly upwards: the prevailing colour of them is duſky, or nearly black. The buffalo has no dewlap: his tail is ſmall, and deſtitute of vertebræ near the extremity, and his ears long and pointed. The teats of the buffalo, which are four in number, Deſmeſne conceives to be ſufficiently indicative of this ſpecies, without adverting to any other character; for theſe, he remarks, are not diſpoſed, as in other animals, in two logitudinal parallel lines, but on the contrary range in a ſingle row in a tranſverſe direction.

This animal has an appearance of uncommon ſtrength. The bulk of his body, and prodigious muſcular limbs, denote his force at the firſt view. His aſpect is ferocious and malignant, at the ſame time that his phyſiognomy is ſtrongly marked with features of ſtupidity: his head is of a ponderous ſize, his forehead convex, his eyes diminutive, and his muzzle flat, and what ſerve to render his viſage ſtill more ſavage are the tufts of frizzled hair which hang down from his cheeks and the lower part of his muzzle.

Moſt commonly the buffalo is entirely of a blackiſh colour with the exception of the hair at the top of the forehead, and the tuft at the extremity of the tail, which are of a yellowiſh white colour. The ſkin itſelf is alſo of a black colour, and from this general caſt it is but very ſeldom obſerved to vary; though we meet with deſcriptions in the works of traveliers of white, grey, and reddiſh, or bay buffaloes. In Europe they are, however, ſometimes whitiſh on the inſides of the limbs, and Sonnini records an example of one which he ſaw in Egypt, which had all the legs, belly, and ſides, perfectly white. It varies, however, greatly as to the length and thickneſs of its hair, and is ſometimes ſeen nearly naked.

This animal is originally a native of the hotter parts of India and Africa, from whence it is ſaid to have been introduced into Italy in the ſeventh century; and is now completely naturalized to the climate of the South of Europe. Mr. Pennant ſuppoſes the Βοες αγριοῖ of Ariſtotle to have meant buffaloes. Gmelin is of the ſame opinion, referring for his Bubalus to Βοες ἄγριοι ἐν Ἀραχωτοις. *Ariſt. Hiſt. An.* &c.; and he conſiders alſo the *Bos Indicus* of Pliny as the ſame animal. This conjecture has the ſanction of much reſpectable authority, but there are naturaliſts of no mean celebrity who are diſpoſed to diſcountenance it. Buffon endeavours to prove that the animal we are acquainted with at this day under the name of buffalo, was altogether unknown to the ancient Greeks or Romans; and further, that the buffalo was not tranſported from its native countries, the hotteſt parts of Africa and the Indies, to be naturalized in Italy, before the ſeventh century. In ſupport of the former of theſe aſſertions, he adduces the ſilence of all authors prior to that age. For the ſecond, he obſerves that the wild buffaloes of the hotter parts of Aſia and Africa are preciſely of the ſame kind as our buffalo. He compares the deſcription of this animal with the remarks of travellers and navigators who have ſpoken of the buffaloes of Perſia and the Mogul empire, Bengal, Egypt, Guinea, and the Cape of Good Hope; and from this compariſon infers that in all thoſe countries the buffalo is of the ſame individual ſpecies as our European buffalo, ſubject only to ſome inconſiderable variation.

The buffalo grows in ſome countries to an extremely large ſize. Mr. Pennant quotes a pair of horns in the Britiſh Muſeum in proof of this, which are ſix feet and a half long, and the hollow of which will hold five quarts. Jerom Lobo, in his account of Abyſſinia, affirms that ſome of the horns of the buffaloes of that country will hold ten quarts, and Dillon ſaw ſome in India which were ten feet long: they are ſometimes wrinkled, but generally ſmooth. The diſtance between the points of the two horns of the buffalo is commonly about five feet. Wild buffaloes occur in many parts of Africa and India. In Malabar, and the iſlands of Borneo and Ceylon, they are abundant, and are conſidered as exceſſively fierce and dangerous animals. The buffaloes of Abyſſinia grow to twice the ſize of our largeſt oxen, and are called elephant-bulls, not only on account of their vaſt ſize, but from their naked black ſkin reſembling that of an elephant.

In a ſtate of wildneſs the buffaloes live in the foreſts, and go about in great troops. The hunting of theſe animals is a favourite, but very dangerous purſuit among the Indians, and requires the greateſt ſhare of dexterity. The hunters never venture in any numbers to oppoſe theſe ferocious animals face to face, but conceal themſelves in the thickets, or among the branches of the trees, from whence they ſtrike their javelins upon the buffaloes as they paſs below them. Theſe people are very fond of the fleſh, which is affirmed by ſome to be hard and indifferently flavoured. They drive a conſiderable trade in the ſkins and horns of the buffalo, which for many purpoſes are far more uſeful than thoſe of the ox. In the Mogul dominions it is no uncommon circumſtance to enſnare the wild buffalo, the lion, or the tiger in nets, when the people amuſe themſelves before they put them to death by forcing them to combat each other, and it is ſaid that inſtances have occurred in which the buffalo has proved victorious over theſe powerful antagoniſts, by attacking one when he had overcome the other. Thunberg, in his travels through Japan, ſpeaks of having ſeen, in the environs of Miaco, buffaloes with a hunch upon the back, but from this peculiarity it has been thought moſt likely that it was the Zebu which that traveller obſerved, and not a variety of the buffalo.

The domeſtic buffalo is much cultivated in Egypt, where according to Sonnini it yields plenty of excellent milk, from which butter is made as well as ſeveral kinds of cheeſe. "The buffalo (ſays that writer) is an acquiſition of the modern Egyptians, with which their anceſtors were unacquainted. It was brought over from Perſia into their country, where the ſpecies is at preſent univerſally ſpread, and is very much propagated. It is even more numerous that that of the common ox, and is there equally domeſtic, though but recently domeſticated, as is eaſily diſtinguiſhable by the conſtantly uniform colour of the hair, and ſtill more by a remnant of ferocity and intractability of diſpoſition, and a wild, and lowring aſpect, the characters of all half-tamed animals. The buffaloes of Egypt, however, are not near ſo wild nor ſo much to be feared as thoſe of other countries. They there partake of the very remarkable gentleneſs of other domeſtic animals, and only retain a few ſudden and occaſional caprices. The ſight of any thing red, which is ſaid to make them fly into fits of ungovernable fury elſewhere, makes no impreſſion on thoſe of Egypt. The inhabitants of the country, beſides their red turban, wear alſo in general another ſhawl of the ſame colour, which envelopes the neck and cheſt, and I never obſerved that the ſight of either at all affected the buffaloes. They are ſo fond of the water, that I have ſeen them continue in it the whole day. It often happens that the water which is fetched from the Nile near its banks has contracted their muſky ſmell."

Theſe animals multiply more readily than the common ox: they are alſo more robuſt, better capable of bearing fatigue, and, generally ſpeaking, leſs liable to diſtempers. They are therefore employed to advantage in different kinds of labour. Buffaloes are made to draw heavy loads, and are commonly directed or reſtrained by means of a ring paſſed through the noſe. Two buffaloes yoked, or rather chained, to a cart, are able to draw as much as four ſtrong horſes. As they carry their neck and head low, the whole weight of their body is employed in drawing; and their maſs much ſurpaſſes that of a labouring horſe. In its habits the buffalo is much leſs cleanly than the ox, delighting to wallow in the mud; and, next to the hog, may be conſidered as the dirtieſt of domeſticated quadrupeds. His voice is deeper, more uncouth and hideous than that of the bull. The milk of the female buffalo is ſaid by ſome authors to be not ſo good as that of the cow, but it is more plentiful, and is uſed for the purpoſes of the dairy in the warmer regions. In the ſixth ſupplemental volume of Buffon, it is affirmed that the milk is far ſuperior to cow's milk, not only in taſte but colour, and that it makes the moſt excellent butter, cheeſe, &c. The ſkin and horns are of more value than all the reſt of the animal; the former being of extreme ſtrength and durability, and conſequently well adapted for various purpoſes in which ſtrong leather is required; the latter are of a fine grain, ſtrong, and bear a good poliſh, and are therefore in much eſteem with cutlers and other artificers. Italy is the country where buffaloes are moſt common in a domeſticated ſtate, being uſed there, as in India, both for the dairy and the draught. The parts in which they are moſt ſucceſsfully cultivated are the diſtrict of the Pontine marſhes, and thoſe of Sienna. The Spaniards are attentive to this race of cattle, and indeed the cultivation of this uſeful animal ſeems to be pretty general in all countries on the borders of the Mediterranean ſea both in Europe and Africa.

For ſo robuſt a creature, the buffalo is of a delicate conſtitution, and ſuffers equally by an exceſs of cold or heat. In the ſummer it retires to ſhady places, or into the water in which it takes the greateſt delight; and in winter retreats to the warmer coverts, or the receſſes and ſhelter of the foreſts. This inſtinctive quality of the animal ſeems to imply that the buffalo originated rather in temperate climates than in ſuch as either very hot or cold.

Beſides the maladies that are common to the ox and other cattle, the buffalo is ſubject to one of a particular ſort, with which it is attacked only in the early part of its life. This is called by the French *barbone*, an expreſſion that implies it to be moſt common in the male. The ſymptoms of this diſorder are eaſily detected by a conſiderable ſwelling that takes place in the throat and under-parts of the muzzle, and ſometimes by the whole body becoming inflated. The poor animal thus afflicted refuſes all kinds of nouriſhment; his eyes trickle; his tongue appears covered with a thick white ſcum; and when he attempts to walk, he moves with difficulty at a ſlow pace, with a lame or limping motion. They breed in the fourth year, producing young for two years together, and remaining ſterile the third. The buffalo has ſeldom more than one young at a birth, or two at the utmoſt; and they commonly ceaſe breeding after their twelfth year. Their term of life is pretty much the ſame as that of the common ox.

The ſmall naked Indian buffalo of Pennant, and its analogous variety, the dwarf buffalo, appear to us to belong rather to the ſpecies *Bos Caffer*, than to the above; and will be therefore conſidered ſeparately under that article. See Caffer.

BUBASTIS, or Bubastus, in *Ancient Geography*, a famous town of Lower Egypt, ſeated on the moſt eaſtern branch of the Nile, which, from the name of this city was called by the ancients, the "Bubaſtic," river, or canal. The prophet Ezekiel calls this place "Phi-Beſeth." M. d'Anville ſuppoſes that the Bubaſtic canal of Ptolemy was not that which proceeded from Bubaſtis to the ſea, this being the Peluſiac canal; but that which paſſed from this city towards the ſouth, and, joining with the Trajan canal, diſcharged itſelf into a lake called "Lacus Amari." In this place was a magnificent temple dedicated to Diana, who, in the Egyptian language, was denominated "Bubaſtis;" and hence has been derived the name of the city.

Bubastis, in *Mythology*, a name or attribute aſcribed by the Egyptians to Iſis, or the moon, which, being perſonified, was regarded as a diſtinct deity, and gave name to the city above-mentioned, whither the people reſorted from all parts of Egypt, at a certain period of the year. The ſymbol of this deity was a cat, which was fed by the prieſts with ſacred food, and, when it died, embalmed and carried in pomp to the tomb prepared for it. To this fabulous circumſtance, the veneration manifeſted by the Egyptians for the cat has been aſcribed. In the language of the prieſts, Bubaſtis was repreſented as the daughter of Iſis; and hence the Greeks, who honoured the moon by the name of Diana, beſtowed it alſo on this Egyptian divinity. Accordingly Herodotus (lib. ii.) ſays, that Bubaſtis was called Diana by the Greeks; and to her the Egyptians attributed the office of aſſiſting pregnant women. The Greeks and Latins aſcribed the ſame power to Diana. See Horace, lib. iii. od. 22. According to the Greeks, Diana was the daughter of Jupiter and Latona; and Bubaſtis ſprung, according to the Egyptian mythology, from Oſiris and Iſis. Bubaſtis was called by the Greeks alſo Ilithyia, or Lucina, from her preſiding over child-birth; and the Egyptians adored her under this name in the city of Ilithyia, ſituated near Latopolis. Plutarch, in his treatiſe of Iſis and Oſiris, ſays, that at the feſtivals celebrated in honour of Bubaſtis, they burnt men alive, calling them Typhons, and throwing their aſhes to the winds. Amaſius, ſays Porphyry, in his diſcourſe of abſtinence, who cites the ſame fact, aboliſhed theſe ſanguinary ſacrifices, and eſtabliſhed figures of wax of the natural ſize for the human victims. Herodotus, on the other hand, contends (lib. ii.), that the Egyptians were never guilty of this crime. "How can a people," ſays he, "who can ſcarcely prevail upon themſelves to ſacrifice a few animals, ſhed human blood upon the altars of their gods?" In order to reconcile theſe contradictory teſtimonies, Savary conjectures, that the paſtoral Arabs, who ſubjugated Egypt, long before the arrival of the Iſraelites, brought with them that barbarous cuſtom, which had been eſtabliſhed among them from remote antiquity; and as an evidence of the probability of this opinion, it is ſuggeſted, that the Egyptians abſtained from ſhedding human blood, as ſoon as the Pharaoh Amaſis had taken Heliopolis from theſe ferocious conquerors, and had driven them to the frontiers of Arabia.

It has been queſtioned, how Bubaſtis could be called the daughter of Iſis, as ſhe was alſo the ſymbol of the moon. The Egyptian theology, ſays Savary, explains this apparent contradiction. Iſis was the general appellation of the moon, Bubaſtis a particular attribute. The ſun, in conjunction with the ſtar of the night, formed the celeſtial marriage of Oſiris and Iſis; the creſcent, which appears three days after, was allegorically ſtyled their daughter. In this ſenſe, the Hebrews called the ſame phenomenon "the birth of the moon;" and to the ſame purpoſe Horace ſays, (od. 23. lib. iii.):

"Cœlo ſupinas ſi tuleris manus,
Naſcente lunâ, ruſtica Phidyle," &c.

Hence we may deduce the reaſon why, in the city of Ilithyia, where Bubaſtis was adored, the third day of the lunar month was conſecrated by a particular worſhip. On this day the moon aſſumes the form of a creſcent; and therefore the Egyptians celebrated a ſolemnity in honour of Bubaſtis, which in their tongue ſignified "New Moon." The creſcent with which her head was crowned, obviouſly expreſſes the intention of the prieſts in creating this ſymbolical divinity. Savary's Letters on Egypt, vol. ii.

BUBASTUS (Cramer), in *Entomology*, a variety of SPHINX *didyma*, Fabr. See DIDYMA.

BUBBLES, BULLÆ, in *Phyſics*, little round drops or veſicles of any fluid filled with air, and formed, either on its ſurface, upon the addition of more of the fluid, as in raining; or in its ſubſtance, upon a vigorous inteſtine commotion of its parts.

Bubbles are dilatable or compreſſible, i. e. they take up more or leſs room, as the included air is more or leſs heated, or more or leſs preſſed, from without; and are round, becauſe the included aura acts equably from within all round. Their coat, or cover, is formed of the minute particles of the fluid, retained either by the velocity of the air, or by the briſk attraction between thoſe minute parts and the air. See COLOUR.

Theſe little bubbles, riſing up from fluids, or hanging on their ſurface, form the white ſcum at top; and theſe ſame bubbles form the ſteam, or vapour, flying up from liquors in boiling, &c. the manner of which ſee under BOILING, VAPOUR, &c.

BUBBLE, in *Commerce*, is a cant name given to a ſort of projects, for the raiſing of money on imaginary grounds; very frequent in the years 1718, 1719, 1720.

The pretended deſign of theſe undertakings was, to raiſe a ſtock, for the retrieving, ſetting on foot, or carrying on ſome promiſing and uſeful branch of trade, manufacture, machinery, or the like. In order to which, propoſals were given out, ſhewing the advantages of the deſign, and inviting perſons into it. The ſum neceſſary to carry on the affair, together with the profits expected from it, were divided into a certain number of ſhares, or ſubſcriptions, to be purchaſed by perſons diſpoſed to adventure therein.—The real deſign, in ſome, was to raiſe a ſum for the private advantage of the projectors, to be laid out by them in the South-ſea ſtock, &c. in hopes, by the riſe thereof, to be able to refund the ſubſcribers' money, with profit to themſelves. In others, the deſign was abſolutely to defraud the adventurers of their ſubſcription money, without any view to reſtitution. There was a third kind ſomewhat different: the projectors of theſe, to proceed the more ſecurely, propoſed to have books opened, and ſubſcriptions taken at ſome time to come; and in the mean time took money by way of *premium*, to entitle perſons to be admitted ſubſcribers, as ſoon as the affair ſhould be ripe for dividing into ſhares. Several thouſand ſhares were thus very frequently beſpoke in one day; and premiums, from one ſhilling to ſome pounds, paid thereupon to the profits of the projectors.

The number of bubbles, and their qualities, are very extraordinary; ſome of them, too, authorized by patents; and, in others, the projectors and their proprietors formed into corporations; ſome for fiſheries, ſome for inſurances, ſome for the digging of mines, &c. A ſtatute was enacted (6 Geo. I. c. 18), which ſubjected all unwarrantable undertakings, by unlawful ſubſcriptions, to the penalties of a "præmunire;" and a proclamation was iſſued in 1720, for ſuppreſſing theſe bubbles; but they were not ſufficient for reſtraining and aboliſhing them. At length, in the ſame year, writs of "ſcire facias" were iſſued againſt ſeveral companies by name, and in general againſt all other projects promulgated contrary to law; and the crown-lawyers were ſtrictly enjoined to proſecute all ſuch as had opened books of ſubſcriptions, and all who ſubſcribed to them, or who made or accepted any transfer in them. The publication of the "ſcire facias," by authority, in the Gazette, ſtruck ſo general a panic amongſt the conductors of all theſe bubbles, that the ſuddenneſs of their fall was no leſs aſtoniſhing than their extent and magnitude.

BUBBLING WATERS. See WATER.

BUBBOLA, in *Ornithology*, a ſynonymous name of the hoopoe, *upupa epops*, which ſee.

BUBEREZNOUSKOI, in *Geography*, a town of Ruſſian Tartary, on the river Zulux, 32 miles north of Arkadinſkaia.

BUBIL, in *Ornithology*, a ſpecies of TURDUS, of a brown colour, with a black longitudinal band behind the eye. Gmel. This inhabits China, and is the only ſong-bird that is naturally an inhabitant of the Chineſe dominions. It is the ſame ſpecies as the *boubil* already deſcribed. See BOUBIL.

BUBLITZ, in *Geography*, a town of Hinder Pomerania, in the principality of Cammin; 4 miles S. E. from Coſlin. This ſmall town, belonging to a bailiwick of the ſame name, lies on the Gozel, not far from the borders of Poland. In 1605, and again in 1682, it was wholly conſumed by fire.

BUBO, in *Anatomy*, is ſometimes uſed to denote that part otherwiſe called *inguen*, or groin.

BUBO, in *Ornithology*, a ſpecies of STRIX, or owl of the eared tribe, known in this country by the name of the great eared, or horned owl. This bird is the largeſt ſpecies of its tribe, being in point of ſize almoſt equal to the eagle. Willughby for this reaſon calls it the eagle owl. The body of this creature is of a tawny colour, very beautifully variegated with lines, ſtreaks, and ſpeckles of black, brown, cinereous, and ferruginous. The wings are long; the tail ſhort, and marked with duſky bars; legs thick, covered down to the extremity of the toes with a thick and cloſe down of a teſtaceous

ceous colour. The claws are large, much incurvated, and of a duſky colour.

This bird is of a ſolitary diſpoſition, reſiding almoſt conſtantly in the depths of extenſive foreſts, in ruined edifices ſtanding in lonely ſituations, or among rocks that are difficult of acceſs. It therefore abounds moſt in woody and mountainous countries. There are few inſtances of its having been obſerved in Britain. Once or twice it has been ſhot in Scotland, and another time in Yorkſhire. In France it is rather more frequent, but is ſtill leſs ſo there than in Germany, Sweden, and Lapland. Beſides the European variety, which is found generally diffuſed over the continent, there are three other very diſtinct varieties of the *ſtrix bubo*. The firſt is the Athenian owl, *bubo Athenienſis* of Linnæus, which Latham and other ornithologiſts agree in admitting to be nothing more than a variety of *bubo*. This is *le grand duc d' Italie* of Briſſon, and *great horned owl from Athens* figured by Edwards. Albin names it the *black-winged horn owl*, in alluſion to the blackiſh colour of the wings; the whole plumage being of a darker colour than in *bubo*, but the wings eſpecially. This bird is farther diſtinguiſhed by the legs which are ſhorter and weaker, but the claws are large and ſharp; the face is of a whitiſh grey colour. Another variety, *le grand duc dechauſſé* of Briſſon, differs only from the Athenian variety in having the legs bare of feathers, and both the legs and feet weaker. The exiſtence of the laſt mentioned variety reſts principally upon Marcgrave, who deſcribes it under the Braſilian name of *jacuruta*. He informs us it is the ſize of a gooſe, with a head like that of a cat; the eyes ſhining like cryſtal, with a yellow circle. Near the aperture of the ears it has ſeveral pointed feathers, two fingers long, which being moveable can be erected at pleaſure. The tail is broad, the wings not reaching to the end of it. Legs covered to the feet. Colour of the bird variegated with yellow, blackiſh, and white. This is the variety ϑ. *bubo magellanicus* of Gmelin.

It ſhould be further added, that the Virginian owl is conſidered by Buffon to be a mere variety of the ſpecies *bubo*; the two birds differing only in the poſition of the ear-like tufts of feathers on the head. We muſt allow, that it admits a doubt whether the Virginian owl be in reality a diſtinct ſpecies from *bubo*, or not.

Bubo, in *Surgery*, is a term derived from the Greek *βȣϐὼν*, *inguen*, which among the ancients had various ſignifications; viz. the inguinal region or groin; an inflammation and ſwelling of the abſorbent glands in the groin; an inflamed or ſuppurating gland at the bend of the elbow, or under the armpit; a phlegmonous tumour behind the ear, in the neck, or in ſome other external part of the body, accompanied with febrile ſymptoms, &c. Vide Definit. Medicar. *Gorrhæi*, et Œconom. Hippocr. *Fœſii*, Art. *βȣϐὼν*.

As the remote cauſes and conſequences of buboes are various, ſo there have been numerous pathological diſtinctions introduced; many of which, however, are of but little importance to the practical ſurgeon: for example, *benign* bubo, *malignant* bubo, *peſtilential* bubo, *ſympathetic* bubo, *venereal* bubo, *ſcrofulous* bubo, *variolous* bubo, *ſcirrhous* bubo, *eryſipelatous* bubo, *œdematous* bubo, *phlegmonous* bubo, *idiopathic* bubo, *conſecutive* bubo, &c. &c. The principal indications of cure are not ſo much governed by the ſuppoſed character and name of the local diſorder, as by the nature and tendency of its remote cauſe: which being detected and removed, will very ſeldom leave any doubt as to the choice we ſhould make of topical remedies. To deſcribe all the poſſible cauſes, ſymptoms, concomitants, and ſecondary effects of buboes, in whatever part of the body they may ariſe, with their various modes of treatment, would be to write a large volume. Our preſent buſineſs will be, to give only a ſhort account of the principal diagnoſtic ſigns of buboes, and their chirurgical management in ordinary caſes.

Buboes are diſtinguiſhed from other tumours by one or more of the following circumſtances:

1. *By their uſual ſituation.* They are only to be found in the courſe of the lymphatic veſſels; i. e. chiefly along the inner ſides of the leg and thigh, aſcending to the groin; alſo upon the under ſurface of the arms, going towards the axillæ; or, upon either ſide of the neck, and underneath the lower jaw.

2. *By their form and ſtructure.* Theſe glands are uſually roundiſh or oblong: at the beginning of the inflammation, and for ſome time after, they are hard, or but ſlightly compreſſible; they are moveable among the cellular membrane, by which they are ſurrounded; they have very little ſenſibility on being touched, until the inflammation advances conſiderably; they are not, at firſt, attended with redneſs, or diſcolouration of the ſuperincumbent ſkin; and when they are fairly ſuppurated, the matter (being confined within a diſtinct capſule) does not recede upon preſſure, like the pus in a lumbar abſceſs, &c.

3. *By their progreſs and termination.* They are commonly ſlow in taking on the inflammatory ſtate, and in advancing to complete maturation. The ſymptoms will frequently remain a long time, even when their exciting cauſe has been apparently removed; and the diſeaſed abſorbent glands will be apt to inflame repeatedly, with longer or ſhorter intermiſſions, after their natural ſtructure has been once deranged.

4. *By the manner of their firſt appearance.* Buboes often appear in cluſters, accompanied with induration and enlargement of the neighbouring lymphatic veſſels, which reſemble tenſe chords under the ſkin; they never ariſe ſuddenly, like ruptures and falſe aneuriſms, aſſuming a large bulk in a very ſhort period; they may generally be aſcribed to the preſence of an acrid matter, or other cauſe of local irritation, affecting the adjacent orifices of the abſorbent veſſels; though, occaſionally, buboes will originate from morbid action excited in the glands themſelves by cold, &c. or by ſome vitiated and poiſonous fluid, which, after circulating through the ſyſtem of blood-veſſels, is depoſited in the glandular ſubſtance.

We have known a ſmall crural hernia in a ſtrangulated and irreducible ſtate, miſtaken by a celebrated practitioner for an enlarged and indurated lymphatic gland. An incipient true aneuriſm has been alſo treated as a ſuppurating bubo, and even been adviſed to be opened with a lancet, to the great hazard of the patient's life. Another miſtake, not much leſs ſerious than theſe, we have likewiſe witneſſed; viz. that of the operation for an aneuriſm being propoſed at an hoſpital, in a caſe where the patient had had deep glandular abſceſſes or buboes ſituated over the femoral artery, which might therefore communicate a feeling of pulſation to the examiners. This patient, having been terrified at the propoſed operation, left the hoſpital abruptly, and languiſhed for ſome months under repeated evacuations of pus, &c. from the diſeaſed glands. His diſorder was not clearly underſtood, until after the man's deceaſe, when it was minutely inſpected, and proved to be as ſtated above. Such caſes ſhew the great difficulty, as well as the importance, of forming a juſt diagnoſis of glandular affections under particular circumſtances.

We ſhall now ſuggeſt a few hints for the general management of buboes.

Treatment of a ſimple Bubo.

All kinds of buboes may be included under two heads; the *ſimple* and the *complicated*. In the former, we are to ſuppoſe there is no malignity ariſing from the preſence and action of any poiſonous matter or acrimonious fluid in the bubo; for when that is the caſe, regard muſt be paid to the exiſting cauſe, and peculiar means ſhould be adopted, with a view to remove the latent *virus* from the ſyſtem.

A ſimple bubo generally terminates, either by reſolution or ſuppuration. There are circumſtances, under which no art can prevent a ſuppuration; but, whenever it can be prevented, we ſhould endeavour to reſolve the tumour, by what are called diſcutient or antiphlogiſtic means. The moſt powerful remedies of this claſs are, local bleeding by leeches, cold ſaturnine applications, perfect reſt of the member affected, ſaline purgatives, and moderate or ſpare diet. But, if the inflammation be not conſiderable; if the tumefied gland remain indurated; and there be no obvious ſource of topical irritation, which we hope to get rid of by the gland maturating; we may then, with a deſign of reſolving the induration, employ lightly ſtimulating means; ſuch as, dry cupping, electrical ſparks, volatile liniment, camphorated oil, mercurial frictions, warm farinaceous poultices, and fomentations, &c. At the ſame time we ſhould direct the patient to uſe rather a generous diet, with warm clothing, and moderate exerciſe.

Suppoſe, however, that the diſeaſed gland goes on to a ſtate of ſuppuration, which often will happen in ſpight of all the efforts we can employ to obviate it; a queſtion ariſes when the pus has formed, whether or no the abceſs ſhould be opened? Some ſurgeons adviſe us, in all caſes, to leave buboes to themſelves, to let them burſt, and never interfere with the natural proceſs. This conduct, or rather negligence, we do not wholly approve; for it often occurs, that the pus inſinuates itſelf widely before it finds vent; and it then, perhaps, only oozes by little and little, while the ſkin remains looſe, flaccid, and unhealthy. On the other hand, if a ſimple inciſion be made with a lancet through the ſkin, the ſore will not always heal readily, and the ſurgeon incurs blame for not perfecting what he began.

The common rule to be adopted, and which we have obſerved to be followed with the beſt effects, is to let the tumour break of itſelf, if it be ſituated in the face or neck where we always wiſh to avoid a ſcar; but in other caſes to open the abſceſs with a cauſtic, in preference to the knife, ſo as to deſtroy a ſmall circular portion of ſkin. If the gland underneath be very much indurated and the ſuppuration does not ſoon come on kindly, nor the healing proceſs advance, we apply red-nitrated mercury, either by itſelf, or mixed in ſome ointment, every day, until the ſore aſſumes a more healthy aſpect: ſtill continuing the cataplaſms, ſo long as the morbid hardneſs remain. See Caustic and Abscess. Should the edges become callous and indolent, not being diſpoſed to cicatrize, they may be now and then touched with the cauſtic, or with an eſcharotic lotion. Attention muſt be paid likewiſe to the patient's ordinary ſtate of health, and ſuch a plan of conduct purſued, as may be indicated by the exiſting circumſtances.

Treatment of the complicated Bubo.

A bubo may be dependant on another diſeaſe; and is then to be conſidered not as a local or primary affection, but as ſymptomatic of the original malady. Buboes are extremely common, as a ſymptom of the venereal diſeaſe, plague, ſcrofula, meaſles, &c.

In the lues venerea, indeed, it but ſeldom (in compariſon with other ſymptoms) occurs as a ſequel of the general contamination, but moſtly precedes it. The ſyphilitic infection very frequently produces buboes in the firſt inſtance, before the whole ſyſtem has been vitiated; though, in ſome few caſes, this order is reverſed. And, whenever we believe the venereal bubo to be a primary or local diſorder, unattended with abſorption of the virus, our treatment ſhould be much more lenient and topical than in other caſes, where we ſuſpect the contrary. See Lues Venerea, and Syphilis. We are perfectly convinced, that great miſchief has been done by the indiſcriminate and free uſe of mercury in venereal buboes, eſpecially if they have exiſted only a ſhort time. Innumerable facts prove that other means, beſides a courſe of mercury internally, will cure venereal buboes; and in particular we may appeal to the effects produced by nitric acid, as recently detailed by Dr. Rollo, Mr. Pearſon, Mr. Platt, Dr. Beddoes, and Mr. Blair.

With reference to this ſubject, and to ſhew that a ſalivation has not been univerſally regarded as neceſſary for the cure of ſyphilitic buboes, we ſhall quote the words of the medical gentlemen of St. Thomas's hoſpital, who thus expreſs their opinion in a little work printed for the uſe of their pupils, A. D. 1775.—"If the patient has a ſuppurating bubo, you ſhould not only wait until it be ſuppurated and opened, but until it be ſo near healing, that you may be ſure it will be cicatrized before the ſalivation be over. From a neglect of this caution, you will ſometimes have tedious, painful, and phagedenic ſores remaining. Mercury will oftener exaſperate than diſpoſe them to heal." See General Rules in raiſing a Salivation, &c. p. 4.

Whatever be the nature of the diſeaſe which occaſions buboes to ariſe, we ſhould principally direct our attention to that diſeaſe, and not to the treatment of the local ſymptoms. Conſequently the remarks we have to offer on the management of peſtilential buboes, ſcrofulous buboes, &c. &c. muſt be reſerved for other articles in the Cyclopædia. See Plague, Fever, Scrofula, and Measles.

BUBON, in *Botany*, (Βουβωνιον Hippoc. and Dioſcor. from βουβων, the groin, or a tumour to which that part is liable, and which it was ſuppoſed to cure). Linn. gen. 350. Reich. 380. Schreb. 482. Willden. 546. Gært. 12. Tab. 23. fig. 2. La Marck, Pl. 194. Juſſ. 221. Ventenat vol. iii. p. 19. Claſs and order, *pentandria digynia*. Nat. Ord. *umbellatæ*, Linn. *umbelliferæ*, Juſſ.

Gen. Char. *Cal. Umbel univerſal*, of about ten rays, the middle ones ſhorter; *partial*, of from fifteen to twenty rays. *Involucre univerſal*, of five leaves or more. *Leaves* lanceolate-acuminate, ſpreading, equal, much ſhorter than the umbel, permanent; *partial* with rather more leaves, of the ſame ſhape, as long as the partial umbel. *Perianth proper*, ſcarcely viſible. *Flowers* all fertile, forming an uniform umbel. *Cor.* petals five, lanceolate, inflected. *Stam.* filaments five, ſimple, as long as the petals, anthers ſimple. *Piſt.* germ ovate, inferior; ſtyles two, briſtle-ſhaped, permanent, ſcarcely the length of the corol, ſpreading and reflected; ſtigmas obtuſe. *Pericarp*, none; fruit divding into two, crowned. *Seeds* two, ovate, flat on one ſide, convex on the other, ſtriated.

Eſſ. Char. Fruit ovate, ſtriated.

Species, 1. B. *macedonicum*, Macedonian parſley. Linn. Hort. Cliff. 95. Blackwell, Tab. 382. Gært. fruct. 1. 102. Apium Macedonicum. Bauh. Pin. 154. Tourn. 305. Ray. hiſt. 463. N° 4. Petroſelinum Macedonicum, Lob. Ic. 708. Dod. Pempt. 697. Gert. 864. 2. f. 1. emac. 1016. f. 2. Park. 924. 1. "Leaflets rhomb-ovate, deeply toothed; teeth acuminate; umbels very numerous; ſeeds rough with hairs." Biennial in its native climate, but in England it ſeldom flowers till the third or fourth year, and then dies. *Stem* a foot and a half, or two feet high, cylindrical, with numerous pubeſcent, whitiſh branches. *Leaves* ſmooth, pale green, reſembling thoſe of parſley, but with pubeſcent petioles; thoſe from the root growing almoſt horizontally, ſpreading near the ſurface of the ground. *Umbels* terminating, the ſtem and branches ſmall, whitiſh: peduncles and leaves of the involucre pubeſcent. Miller and La Marck. *Seeds* ovate-acuminate, of a bay brown colour; convex, ſtriated their whole length with five elevated lines, and beſet with hoary hairs, on one ſide; flat or ſlightly concave on the other. Native of Greece and Barbary. Its ſeeds have a pleaſant aromatic taſte and ſmell, and are eſteemed diuretic, emmenagogue, and carminative. They are an ingredient in Theriaca. 2. B. *Galbanum.* Lovage-leaved Bubon, Linn. Hort. Cliff. 96. Jacquin. hort. 3. 21. tab. 36. Berg. cap. 77. Woodville Med. Bot. v. 1. tab. 12. Oreoſelinum, Afric. Tourn. 319. Aniſum Africanum Pluk. Phyt. tab. 12. fig. 2. Moriſ. hiſt. 3. p. 297. Ferula Ray. Sup. 252. "Leaflets ovate-wedge-ſhaped, acute, finely ſerrated; umbels few; ſeeds ſmooth; ſtem ſhrubby, glaucous." An evergreen ſhrub from eight to ten feet high. *Stem* cylindrical, jointed, ſmooth, covered with a glaucous exudation, which comes off when handled: towards the bottom, woody and naked; towards the top, ſending off leaves and branches. *Leaves* alternate, bipinnate, ſmooth, of a pale green colour, inclining to glaucous. *Umbels* terminal from the ſtem, and pendant branches; leaflets of the general involucrum, about twelve, lanceolate, membranous, and bent downwards; of the partial one ſix, ſpreading. *Flowers* ſmall, greeniſh yellow. *Seeds* ſmooth, marked with three elevated lines, without a membranous wing. Native of the Cape of Good Hope; cultivated by Gerard in 1596. It is from this plant, that the drug called galbanum is ſaid by Linnæus to be obtained. Linnæus aſſerts this on the authority of Plukenet, and has been followed by the London, Edinburgh, and other medical colleges. But Herman, who was an intelligent phyſician, and practiſed many years in the Eaſt Indies, and at the Cape of Good Hope, is of opinion, that the inſpiſſated juice of ſeveral kindred plants is brought to Europe, and vended under the ſame name. Galbanum is commonly imported from Turkey and the Eaſt Indies, in large, ſoftiſh, ductile, pale coloured maſſes, which by age acquire a browniſh-yellow appearance; theſe are intermixed with diſtinct white grumes or tears, which are accounted the beſt part of the maſs; but the ſeparate hard tears are externally of a ferruginous colour, and always preferred to the maſs itſelf. It has a ſtrong unpleaſant ſmell, and a warm bitteriſh acrid taſte. Like other gummy reſins, it unites with water by trituration into a milky liquor, but does not perfectly diſſolve in water, vinegar, or wine. Rectified ſpirit takes up a greater quantity, but not the whole. A mixture of two parts of rectified ſpirit, and one of water, diſſolves all but the impurities. Medically conſidered, it may be ſaid to hold a middle rank between aſafætida and ammoniac; but it is much leſs fetid than the former, and is therefore accounted leſs antiſpaſmodic, nor is it ſuppoſed to have expectorant powers equal to thoſe of the latter: it has the credit, however, of being more uſeful in hyſterical diſorders, and of promoting, and correcting various ſecretions and uterine evacuations. It has been applied externally to expedite the ſuppuration of inflammatory and indolent tumours, and as a warm ſtimulating plaſter. It is an ingredient in the pilulæ e gummi, the emplaſtrum lithargyri cum gummi, of the London pharm. and in the empl. ad clavos pedum of the Edin. Miller, La Marck, and Woodville. 3. B. *lævigatum.* Hort. Kew. 1. p. 352. "Leaflets lanceolate, very obtuſely and obſoletely crenate; ſeeds ſmooth; ſtem ſhrubby." A native of the Cape; introduced into England by Mr. Maſſon, 1774. 4. B. *gummiferum.* Linn. Spec. Ferula Africana galbanifera folio myrrhidis Comm. hort. 2. p. 115. t. 58. "Leaflets gaſhed, acuminate; the lower ones broader; ſeeds ſmooth; ſtem ſhrubby," nearly allied to B. galbanum. A native of the Cape, cultivated by Miller in 1731. 5. B. *rigidius.* Linn. Hort. Clif. 95. (Ferula durior Bocc. muſ. 2. p. 84. t. 76. Bar. rar. t. 77). "Leaflets linear." A low perennial plant with the habit of a ſmall ferula. *Stem* about a foot and a half high, cylindrical, ſtriated, but little branched. *Lower leaves* large, tripinnate; leaflets linear, ſtiff and ſhort. *Flowers* yellow, in looſe umbels. A native of Sicily.

Propagation and Culture.—B. *macedonicum* is propagated by ſeeds, ſown in light ſandy earth, either early in the autumn, or in April; if the ſeaſon prove hot and dry, the ground ſhould be ſhaded in the middle of the day, and frequently watered. In the beginning of October, the plants ſhould be tranſplanted into a warm dry border, and a few of them put into pots to be ſheltered under a frame, in caſe the winter be ſevere. The ſeeds of galbanum and gummiferum ſhould be ſown in pots filled with light loamy earth, as ſoon as they arrive. If it be in autumn, they ſhould be kept during the winter, in a bed of tanners' bark, where the heat is gone. In ſpring the plants will come up, and in April, ſhould be carefully tranſplanted into freſh pots filled with the ſame kind of earth. After having remained in the bark till they have taken root, they ſhould be gradually enured to the open air, and may be placed in June with other exotic plants in a ſheltered ſituation. In winter, they muſt be kept in a green-houſe, where they ſhould have but little water. Miller's Dict.

Bubon, in *Ancient Geography*, a town of Aſia Minor, in Caballia, over againſt Caria. This city, according to Pliny, (l. v. c. 27.) was ſituated in the vicinity of Great Cibyra, and had, with this, and two other cities, formed a league, offenſive and defenſive, called the "league of the four cities." When the prætor Murena, in the year of Rome 670, diſmembered the ſtate of Cibyra, the town of Bubon was annexed to Lycia. According to Steph. Byz. this town, and alſo that of "Balbuſo," derived their names from the pirates who founded them.

BUBONIUM, in *Botany*, Tabern. See Inula Salicina.

BUBONIUS, *Lapis*, in *Natural Hiſtory*, a figured ſtone, in ſhape reſembling an owl's head, of a flinty ſubſtance, black within and cineritious without: it was thus denominated by Dr. Plott, having not before been named by naturaliſts. Plott's Oxford, ch. v. § 45.

BUBONOCELE, in *Surgery*, is a tumour in the groin, formed by the protruſion of the inteſtines, or omentum, through the openings deſigned for the paſſage of the ſpermatic cord, in the male, and the round ligament in the female.

It appears firſt in the groin, at an aperture, ſituated midway between the ſymphyſis pubis and ſuperior ſpinous proceſs of the ilium, and which may be properly called the ſuperior abdominal ring, and then paſſing obliquely downwards and inwards, it emerges at the inferior abdominal ring in the tendon of the external oblique muſcle, and appears within the ſcrotum. Whilſt placed in the groin, ſurgeons uſually call it the inguinal hernia, and when it has extended into the ſcrotum, it is termed ſcrotal hernia. The protruded parts are contained in a ſac formed by the peritonæum; and whilſt the tumour remains in the groin, it is placed under the tendon of the external oblique muſcle; but when it deſcends into the ſcrotum, it is covered, both by a faſcia given off by the external oblique muſcle, and by the cremaſter. The ſpermatic cord uſually paſſes behind the ſac, through its whole courſe, but it has been found in ſome inſtances divided by it, and in others paſſing before the tumour. The epigaſtric artery is placed near the mouth of the ſac, ſometimes on the inner, but moſt frequently on its outer ſide. This hernia may be diſtinguiſhed from other diſeaſes of the ſcrotum, with which it is liable to be confounded, by the following marks:

1. By its dilating under coughing. 2. By its diſappearing in the recumbent, and re-appearing in the erect poſtures. 3. By the gradual progreſs of the diſeaſe from the groin to the ſcrotum. 4. From its feel, which is irregular, and doughy, where omentum is contained, but elaſtic and regular, if it contains inteſtine; and where the inteſtines return into the cavity of the abdomen, it recedes with a guggling noiſe.

The inguinal hernia is more frequent on the right than on the left ſide, probably, becauſe our ſtrongeſt exertions are made on that ſide; and the inguinal hernia in the male is more frequent than any other ſpecies, on account of the magnitude of the abdominal rings.

This hernia exiſts in the three following ſtates:

1. Reducible, where the parts can be returned into the cavity of the abdomen. 2. Irreducible, when they cannot be returned. 3. Strangulated, when they are inflamed and obſtructed by the effects of preſſure.

In the reducible ſtate, a ſteel truſs muſt be applied, the pad of which ſhould preſs upon the upper abdominal aperture; for the object in wearing it is to cloſe the communication between the hernial ſac, and the abdomen, by adheſion, which can only be effected by the preſſure being applied upon the mouth of the ſac. Truſſes are faulty in this reſpect, being made to preſs upon the pubis, inſtead of midway between the pubis and ſpinous proceſs of the ilium. A double truſs is required if there are two herniæ; the conſtruction of which differs from the others, in having two pads inſtead of one.

When irreducible, it grows to an enormous ſize, the ſcrotum often becomes diſeaſed, and the perſon is always liable to accidents. It is therefore neceſſary that ſome means ſhould be adopted to prevent its increaſe. If it is an omental hernia, a ſteel truſs may be ſafely worn, which will prevent any further protruſion; but if it is inteſtinal, a bag-truſs ſhould be applied, which ought to lace on its fore part, and thus, by preſerving a conſtant preſſure upon the part, any increaſe of the tumour is prevented, and even its ſize will gradually diminiſh.

The ſtrangulated ſtate is produced by the preſſure, either of the abdominal ring, of the mouth of the hernial ſac, of the edges of the aperture ſurrounding the mouth of the ſac, or by a cord formed by adheſion within the ſac, which becomes entwined around the inteſtine.

Whatever is the cauſe, it becomes neceſſary to liberate the part from preſſure, or the perſon cannot long ſurvive.

For this purpoſe, it is proper to put the patient in a ſupine poſition, with the body a little bent, and the thighs raiſed to a right angle with the ſpine, ſo as to relax the rings through which the hernia has paſſed. The ſurgeon then embracing the lower part of the tumour with his right hand, and applying the fingers of the other oppoſite the orifice of the ſac, kneads the ſwelling into the cavity of the abdomen. If this plan, after a trial of a quarter of an hour, does not ſucceed, the patient ſhould be bled copiouſly, and put in a warm bath, and when faint from the operation of both theſe cauſes, another attempt to return the tumour is to be made. If this is unſucceſsful, a tobacco clyſter compoſed of half a drachm of tobacco, infuſed in a pint of boiling water, is to be injected, and after ſome minutes ſhould be repeated, if the firſt has produced but little effect in exciting nauſea and fainting. Another, and often ſucceſsful mode of attempting the reduction, is by the application of ice incloſed in a bladder, and laid on the part; but if the abdomen is ſore upon preſſure, no time ſhould be loſt in any of theſe trials, but an operation to liberate the bowels ſhould be immediately performed, in the following manner: the patient is to be placed on a table three feet ſix inches in height, the body to be horizontal, and the legs hanging from the knees over the table, and the ſurgeon, ſtanding between them, makes an inciſion from the upper part of the tumour through the ſkin, and then ſucceſſively and cautiouſly, through the faſcia and cremaſter muſcle, and this expoſes the ſurface of the hernial ſac. This being pinched up between the fingers, is to be opened by a very ſmall inciſion, and a director being introduced, the ſac is to be cut to within an inch of the abdominal ring, in the oblique muſcle to its lower part. The inteſtine or omentum is thus expoſed, and a ſmall quantity of fluid generally eſcapes. The finger is then to be paſſed into the ſac towards the abdomen, and the ſeat of the ſtricture examined. If the ſtricture is at the abdominal ring, the probe-pointed biſtory ſhould be paſſed between the ſac and the ring, and the latter only cut in the direction of the tumour, and no danger whatever reſults from doing this. And, if the ſtricture ariſes from the preſſure of the parts forming the upper aperture, the knife is ſtill to be paſſed in the ſame direction as before, but further under the tendon of the external oblique, and the upper part of this aperture is to be cut in the ſame direction as the former. But when the mouth of the ſac itſelf girts the contents, it muſt be divided as follows: The finger is to be thruſt within the ſac to the ſtricture, and then the probe-pointed biſtory carried along the middle of the finger is inſinuated within the ſtricture, which is to be cut upwards or forwards at the middle of the anterior part of the hernial ſac. The epigaſtric artery has been found on either ſide of the mouth of the ſac, but it is never ſituated on its anterior part, and this, therefore, is the part which ſhould always be cut.

When a band is entwined around the inteſtine, or omentum it is eaſily ſeen, and as readily divided.

The ſtricture being divided, and the inteſtine or omentum being found free from mortification, they are to be returned into the cavity of the abdomen by ſmall portions, and by gentle preſſure; but if the quantity of omentum is large, a portion of it ſhould be cut away, and ligatures applied upon the divided veſſels.

When the hernia is very large, and has been long irreducible, it is right to divide the ſtricture at the abdominal ring, (which is in a large hernia the uſual ſeat of the ſtricture) without opening the hernial ſac. The inciſion for this purpoſe is to be made through the ſkin, over the neck of the tumour, ſo as to expoſe the ring and the faſcia, which it ſends off: an opening is to be made through the faſcia, and a director paſſed under the abdominal ring, which being divided, the contents of the tumour will be liberated from preſſure.

When an inguinal hernia is ſo ſmall as to extend no further than the upper part of the ſcrotum, the operation is to be begun mid-way between the pubis and the ilium over the tumour, and the inciſion carried as far as the hernia extends. The tendon of the external oblique muſcle which is expoſed by the diviſion of the ſkin, is next to be cut through, and the hernial ſac being then ſeen, is to be opened in a very cautious manner. The ſtricture which is ſituated, either in the ſac itſelf, or occaſioned by the edges of the upper ring, is then to be cut in a direction parallel with the linea alba.

The inguinal hernia in the female is not ſo frequent an occurrence as in the male, becauſe the abdominal rings are leſs. It paſſes through the ſame apertures as in the male, and when large, extends itſelf into the labium pudendi. It requires the ſame truſs in the reducible ſtate, as that worn by the male, and when ſtrangulated, it demands the ſame means for reduction. If the operation is required, it is to be performed in the following manner. An inciſion is to be made from the upper part of the tumour to the lower, and along its middle, and when the ſkin is thus divided, a faſcia is expoſed which covers the ſac, which being next cut through, the ſac becomes expoſed, and is to be carefully opened, and the ſtricture felt for. If it is ſituated at the ring of the oblique muſcle, the probe-pointed biſtory muſt be paſſed between the ſac and the ring, and the ring cut upward; but if the ſtricture is at the mouth of the ſac, the biſtory is to be paſſed within the ſac, and the ſtricture is to be divided at the anterior and middle part of the mouth of the hernial ſac.

BUBROMA, in *Botany*, (from βους an ox, and βρωμα food,) Schreb. 1216. Willden. 1389. Martyn's Miller. (Guazuma Juſſ. 276. Ventenat 3. 196. La Marck, Boſc.) Claſs and order, *polyadelphia dodecandria*. Nat. Ord. *columniferæ*, Linn. *Malvaceæ*, Juſſ.

Gen. Char. *Cal.* perianth three-leaved; leaves ovate, concave, acute, reflected, deciduous; two a little larger. *Cor.* Petals five, concave or hollowed, in the ſhape of a pouch at their baſe, lengthened at their ſummit into a long bifid awn, inſerted into the nectary at the baſe. *Nectary* a bell-ſhaped pitcher, divided into five equal, lanceolate, ſharp, minute, upright ſegments, ſpreading a little at the tip. *Stam.* Filaments five, filiform, upright, bent outwards at the tip, outwardly faſtened to the nectary, and alternate with its ſegments, trifid at the tip; anthers three on each filament, two at the tip on each ſide, the third a little lower, each placed on one of the diviſions of the filament; the cells margined. *Piſt.* germ ſuperior, roundiſh, hiſpid; ſtyle filiform, about the length of the ſtamens; ſtigma ſimple, bearded, but not divided. *Pericarp*, capſule, (Drupe, La Marck) ſubglobular, woody, muricated all round with club-ſhaped tubercles, punched with a tenfold ſeries of ſmall tranſverſe holes, five-celled, valveleſs, not opening; partitions woody-fibrous; cells covered on the inſide with a thin membrane. *Seeds* numerous, angular, almoſt reniform, attached in a double row in each cell to the common central receptacle.

Obſ. Juſſieu, Ventenat, La Marck and Boſc. call the five ſegments of the nectary, barren filaments, and deſcribe its lower part as a tube formed by the union of all their ten filaments. Schreber ſays, that the capſule is terminated by a five-rayed leafy ſtar; but there is no appearance of ſuch an appendage in La Marck's figure, nor is it mentioned by any other author. According to Swartz, the rind is perforated like a ſieve, referring, doubtleſs, to Schreber's ten-fold ſeries of little tranſverſe holes, improperly tranſlated by Mr. Martyn, dots, through which, we preſume, the ripe ſeeds eſcape; and, if we rightly underſtand Schreber's rather obſcure deſcription, there is one for each ſeed.

Eſſ. Char. *Perianth* three leaved. *Petals* five, lengthened into a bifid awn. *Anthers* three on each filament. *Stigma* ſimple. *Capſule* muricate, perforated with holes, five-celled, valveleſs.

Species, B. *Guazuma*, elm-leaved Bubroma, or baſtard cedar. (Theobroma Guazuma, Linn. hort. Cliff. 379. &c. Reichard, Swartz obſ. 291. Brown Jam. 306. 1.) La Marck, Pl. 637. A tree forty or fifty feet high. *Trunk* nearly the ſize of a man's body, covered with a dark-brown, furrowed bark. *Branches* extending nearly horizontally; ſmaller ones leafy, tomentoſe. *Leaves* alternate, ovate, acuminate, a little heart-ſhaped, obtuſely and unequally ſerrated, gloſſy, bright green on their upper, and pale on their under ſurface, with a ſtrong midrib, and ſeveral tranſverſe veins; petioles tomentoſe, a little thicker than the leaf; ſtipules linear-awl-ſhaped, approximating to the branches. *Racemes* corymboſe, axillary. *Flowers* ſmall, pale yellow; awn purpliſh. A native of the Eaſt and Weſt Indies. In the Weſt Indies it is planted in rows to make a ſhady walk. For this purpoſe, it is pollarded at the rainy ſeaſon, when nine or ten feet high; within a month of which operation, it is covered with foliage, and forms a head more than ſix feet in diameter. As it is liable to ſuffer by the wind, its upper branches are lopped every five or ſix years. Cattle are fed on its leaves and fruit in dry ſeaſons, when other forage is ſcarce. Its ſeeds are very mucilaginous, but agreeable to the palate. The wood is light and eaſily wrought, and is employed in coach pannels. A decoction of the inner bark is very glutinous, and very like that of the elm. It is ſaid to be excellent in the elephantiaſis, a diſorder to which the negroes are much ſubject.

Propagation and Culture.—This tree was cultivated in England by Mr. Miller, in 1739. La Marck's deſcription was formed from a living plant which flowered in the ſtove of the royal garden at Paris, about 1788. The ſeeds muſt be ſown in a hot bed in the ſpring, and when the plants are fit to be removed, ſhould be put into ſeparate pots, and treated in the ſame way as the coffee-tree.

BUBRY, in *Geography*, a town of France, in the department of Morbihan, and diſtrict of Lorient, 10 miles N.N.E. of Hennebond.

BUC, George, in *Biography*, an Engliſh antiquarian, was the deſcendant of an ancient family, and was born in Lincolnſhire towards the cloſe of the ſixteenth century. In the reign of James I. he was made one of the gentlemen of his Majeſty's privy chamber, and knighted. The work by which he was chiefly diſtinguiſhed was his "Life and Reign of Richard III. in five books," in which he takes great pains to vindicate that prince's character. But in this attempt he evinces more zeal than judgment, and his work is a pedantic, rhetorical panegyric, rather than a judicious and impartial hiſtory. It is printed in biſhop Kennet's collection of the Engliſh Hiſtorians, London 1706 and 1719. He was alſo the author of "The Third Univerſitie of England; or, a Treatiſe of the Foundations of all the Colleges, ancient Schools of Privilege, and of Houſes of Learning and Liberal Arts, within and about the moſt famous Citie of London, &c." written in 1712, with a view of ſhewing that all the arts and ſciences are taught in the metropolis, and annexed to the edition of Stow's Chronicle by E. Howes, London, 1631. He compoſed likewiſe a treatiſe of "The Art of Revels." Camden repreſents him as a perſon of excellent learning, and acknowledges obligations to him. Biog. Brit.

BUCA, in *Conchology*, an old name for buccinum.

Buca, in *Ancient Geography*, a town of Italy, in the country of the Frentani, ſituate on the ſea-coaſt.

BUCANECEPHALUM, in *Botany*. Pluk. See Sarracenia.

BUCAO, in *Ornithology*, a name given in the Philippine iſlands to a ſpecies of ſcreech-owl, which is the ſize of a peacock. It is very common in thoſe iſlands, but wholly unknown to us. It is a very beautiful bird, but makes a hideous noiſe in the night.

BUCARDITES, or Bucardita, in *Natural Hiſtory*, a name given by many authors to a ſtone in ſome degree reſembling the figure of an ox's heart. It is uſually of the ſubſtance of the coarſer ſtones, and is no other than a quantity of the matter of ſuch ſtone received while moiſt into the cavity of a large cockle, and thence aſſuming the figure of the inſide of that ſhell, the depreſſion of the head of the cockle, where the *cardo* or hinge of this ſhell is, makes a long and large dent in the formed maſs, which gives it a heart-like ſhape. Plott mentions a *bucardites*, which he found at Stretford in Staffordſhire, which weighed twenty pounds, though broken half-way, curiouſly reticulated, with a white ſpar-coloured ſtone. Nat. Hiſt. Oxf. chap. v. § 145.

BUCARDIUM, in *Conchology*, with old authors, a name applied to the bull's heart chama, *Chama cor* of Linnæus; and, in a more general ſenſe, as a generic title for all the *cordiformes*, or heart ſhells in the *chama*, the *venus*, and the *arca* genera. *Bucarde* of the French, comprehends the ſubcordiform ſhells of the genus Cardium.

BUCARELLI, in *Geography*, a large bay on the North-weſt coaſt of America, diſcovered by Don Juan de Ayala, a Spaniſh navigator in 1775. It was named "The entrance of Bucarelli," by Don de la Bodega and Don Maurelle, in honour of friar Don Anthony Maria Bucarrelli, of Urſua, viceroy of Mexico, and was viſited again in 1779, by two frigates under the command of Don Ignace Arteaga and Don de la Bodega, in 1779. The entrance of this bay is ſituated, according to the determinations of La Perouſe in 1786, in about 136° 15′ W. long. from Paris, and according to the obſervations made by Capt. Cook, in 1778, of the coaſts near this entrance, very nearly 227° E. long. from Greenwich, or 135¼° W. from Paris, and in N. lat. 55° 15′. The Spaniſh commandant cauſed a complete ſurvey to be made of this gulf which runs upwards of eight leagues inland, contains ſeveral large iſlands, and preſents in its circumference 11 fine harbours, where ſhips may anchor with ſafety. Maurelle ſays, that he does not know a ſingle port in all Europe that could be preferred to that of Santa Cruz, which was the name they gave to the port at which their frigates anchored, and which is ſituated at the entrance of the gulf on its eaſt coaſt. Maurelle met with but few habitations in his expedition; ſeeing only one village, ſituate at the top of a ſteep mountain, which could only be aſcended by a flight of ſteps, or rather wooden ladder, whence, if the foot ſlipped, one muſt fall down the precipice. For an account of the inhabitants, &c. ſee CROSS *Sound*.

BUCAROS. See ALCARRAZAS.

BUCCA FERREA, in *Botany*, Mich. See RUPPIA.

BUCCALES *glandulæ*, in *Anatomy*, the mucous glands of the mouth, which are ſituated beneath the membrane which lines the cheek. See MOUTH.

BUCCANEERS, or BUCANEERS, a term frequent in the Weſt Indies, properly uſed for a kind of ſavages who prepare their meat on a grate or hurdle, made of Braſil-wood, placed in the ſmoke, at a good height from the fire, and called *buccan*. Whence, alſo, the little lodges raiſed for the preparation of their food, are called *buccans;* and the action of dreſſing it *buccaning*.

Meat buccaned is ſaid to have an excellent taſte, the vermil colour of a roſe, and a charming ſmell; all which it retains many months. Oexemelia, from whom we have this, adds, that the neighbouring people ſend their ſick hither; that, by eating their buccaned meat, they may be recovered.

The origin of the word is referred to the people of the Caribbee iſlands, who uſed to cut their priſoners of war in pieces, and lay them on hurdles with fire underneath, which they call *buccaning*, i. e. roaſting and ſmoaking together: hence our buccaneers took both their name, and their cuſtom; with this difference, that what the former did to men, theſe did to animals caught in hunting.

The Spaniards, Savary tells us, called the buccaneers in their territories *matadores*, that is, *killers*; and *monteros*, that is, *hunters:* the Engliſh call theirs, *cow-killers*.

The buccaneers are of two diſtinct profeſſions: the one only hunt bulls for their ſkins; the other beaſts for their fleſh.

The art of *buccaning*, Oexemelia deſcribes thus: the beaſt being flaid, and the bones ſtripped out, the fleſh is cut into pieces of the length of the arm, and ſalted, and the next day laid on the buccan; which conſiſts of twenty or thirty bars laid acroſs, half a foot from each other: under this they raiſe a thick ſmoke, adding the ſkin and bones of the beaſt, to heighten it.

This is found vaſtly better than any ſimple fuel: becauſe the volatile ſalts of thoſe parts are by this means communicated to the fleſh, and give it ſuch a reliſh, as that, after a little of this buccaning, the niceſt palate will eat it without further preparation.

Buccaneers are uſually confounded with freebooters, from whom, in ſtrictneſs, they ought to be diſtinguiſhed. The ancient inhabitants of Hiſpaniola, and the other Caribbee iſlands, after their conqueſt by the Europeans, conſiſted of four ranks or orders of perſons, viz. *buccaneers*, or bull-hunters, who ſcoured the woods; *freebooters*, who ſcoured the ſeas as pirates; *huſbandmen*, who tilled the lands; and *ſlaves*. Of theſe the two firſt diſtinguiſhed themſelves moſt by their military diſpoſition, and the ravages they made, eſpecially among the Spaniards.

The name is particularly given to the French inhabitants of the iſland of St. Domingo, whoſe ſole employment is to hunt bulls or wild boars; in order to ſell the hides of the former, and the fleſh of the latter. The French buccaneers packed their hides in bundles, which they called loads, and which conſiſted of thoſe of full-grown bulls, of young bullocks, and of cows. Each load was formerly ſold for about ſix pieces of eight rials; the French coins not being current in the iſland of St. Domingo. The boar meat, previouſly ſeaſoned, was alſo ſold by the bundle or pack, weighing commonly 60 pounds, at the rate of ſix pieces of eight per pack. It was packed up in palmetto leaves, the weight of which was deducted; ſo that each pack contained 60lbs. of buccaned meat. Theſe buccaneers had alſo a great trade in the lard of boars, which they melted and depoſited in large pots, which they called "potiches." This lard, which is called *mantegua*, is alſo ſold for about eight pieces of eight per pot.

Of this article there were a great conſumption and trade in the French ſettlements of the iſlands of St. Domingo, and in thoſe of Tortuga; beſide which they ſent great quantities of them to the Antilles, and even into the continent of French America. There was alſo a great deal of it ſold for the ſupport of the crews of the ſhips that came from France for trading, or which the privateers of Tortuga fitted out for cruizing againſt the Spaniards. The Spaniards alſo, who had their buccaneers, under the appellation of "matadores," or "monteros," and who were employed in bull-hunting, prepared their hides after the manner of the French; and theſe hides found a ready market at the Havannah, a famous harbour in the iſland of Cuba. From hence they were brought by the flota and galleons, which touched at this port, in their return from Vera Cruz and Porto Bello, to Spain, and under the denomination of Havannah hides, were eſteemed the beſt of any that were brought from America to Spain.

Sometimes the word *buccaneer* ſignifies alſo thoſe famous adventurers of all the nations in Europe, who joined together to make war againſt the Spaniards in America: and, under that name, their hiſtory has been publiſhed in the year 1686, by Alexander Oliver Oexemelia.

Theſe adventurers had taken poſſeſſion of the ſmall iſland of Tortuga, as early as the year 1632, and found little difficulty, after having excluded the Spaniards, and fortified themſelves in this iſland, in eſtabliſhing themſelves on the northern coaſt of Hiſpaniola. They at firſt ſubſiſted chiefly by the hunting of wild cattle. Part of the beef they ate freſh, and part they dried; and the hides they ſold to the maſters of ſuch veſſels as came upon the coaſt, and who furniſhed them, in return, with cloaths, liquors, fire-arms, powder and ſhot. Their dreſs conſiſted of a ſhirt dipped in the blood of the animals they had ſlain; a pair of dirty trowſers; a leathern girdle, from which hung a ſhort ſabre, and ſome Dutch knives; a hat without any rim, except a flap before, in order to enable them to pull it off; and ſhoes made of raw hides; but they wore no ſtockings. When the wild cattle became ſcarce, theſe buccaneers were under a neceſſity of turning their induſtry to other objects. The more ſober-minded among them applied to the cultivation of the ground, which abundantly requited their toil; while thoſe of a bold and reſtleſs diſpoſition aſſociated themſelves with pirates and outlaws of all nations, and formed the moſt terrible band of ravagers that ever infeſted the ocean. To theſe ravagers, however, rendered famous by their courage and their crimes, France and England are indebted, in ſome meaſure, for the proſperity of their ſettlements in the Weſt Indies.

Theſe piratical buccaneers, aſſuming the name of the "Brothers of the coaſt," formed themſelves into ſmall clans or ſocieties; and made their excurſions in open boats, each of which generally contained between 20 and 30 men, expoſed to the intemperature of the climate, and encountering alternately the burning heat of the day, and the chilling damps of the night. The natural inconveniences, connected with this mode of life, were augmented by others ariſing from their licentious diſpoſition. A love of freedom and independence, by which they were actuated to a degree of frenzy, in common with other ſavages, rendered the buccaneers averſe from all reſtraints which civilized men impoſe upon themſelves for their common happineſs; and as the authority, which they had conferred on their captain, was chiefly reſtricted to giving orders in battle, they lived in the greateſt diſorder. Like ſavages, having no apprehenſion of want, and taking no care to guard againſt famine by prudent economy, they were frequently expoſed to all the extremities of hunger and thirſt. But deriving, even from their diſtreſſes, a kind of courage that defied all danger, they were tranſported with an aſtoniſhing degree of enthuſiaſm whenever they ſaw a ſail. On the mode of attack they ſeldom deliberated, but it was their cuſtom to board the ſhips that fell in their way as ſoon as poſſible. The ſmallneſs of their own veſſels, and their dexterity in managing them, preſerved them from the fire of the enemy. They preſented only to the broadſide of a ſhip their ſlender prows, filled with expert markſmen, who fired at the port-holes of the enemy with ſuch exactneſs, as to confound the moſt experienced gunners. And when they could fix their grappling tackle, the largeſt trading veſſels generally were obliged to ſtrike. In caſes of extreme neceſſity, they attacked the ſhips of every nation; but thoſe belonging to Spain were aſſailed as the principal objects of their piracy. They thought, that the cruelties, which the Spaniards had exerciſed on the natives of the New World, furniſhed a ſufficient apology for any violence that could be committed againſt them; nor did they ever embark on any expedition without publicly praying to heaven for ſucceſs, nor return loaded with booty without ſolemnly returning thanks to God for their good fortune. This booty was originally carried to the iſland of Tortuga, the common rendezvous of the buccaneers, and at firſt their only place of ſafety; but afterwards the French went to ſome of the ports of Hiſpaniola, where they had eſtabliſhed themſelves in defiance of the Spaniards, and the Engliſh to thoſe of Jamaica, where they could diſpoſe of their prizes to greater advantage, and lay out their money more to their own ſatisfaction, either in buſineſs or in pleaſure. Before the diſtribution of the ſpoil, each adventurer, holding up his hand, proteſted that he had ſecreted no part of what he had taken; and if any one was convicted of perjury, which ſeldom occurred, he was puniſhed by being expelled the community, and by being left, at the firſt opportunity, on ſome deſert iſland, as a wretch unworthy to live in ſociety, even among the deſtroyers of their ſpecies.

After having provided for the ſick, the wounded, and the maimed, and after having ſettled their reſpective ſhares, and diſtributed ſuch as belonged to thoſe who had no relations or friends, in charity to the poor, and to churches; they indulged in all kinds of licentiouſneſs. When they were aſked, why they diſſipated ſo heedleſsly and rapidly the ſpoil which they collected with ſo much perſonal danger? they replied, "expoſed as we are to a variety of perils, our lives are totally different from thoſe of other men. Why ſhould we, who are alive to-day, and run the hazard of being dead to-morrow, think of hoarding? Studious only of enjoying the preſent hour, we never think of that which is to come." The ſhips that ſailed from Europe to America ſeldom tempted the avidity of the firſt buccaneers, as the merchandize they carried could not readily have been ſold in the Weſt Indies in thoſe early times. But they eagerly watched the Spaniſh veſſels on their return to Europe, when they were known to be laden with treaſure. They commonly followed the galleons and flota, tranſporting the produce of the mines of Mexico and Peru as far as the channel of Bahama; and if any ſhip was accidentally ſeparated from the fleet, they inſtantly beſet her, and ſhe ſeldom eſcaped. And they even ventured to attack ſeveral ſhips at once, which were commonly ſurrendered, when they came to cloſe quarters; for the Spaniards conſidered them as demons, and trembled at their approach. The Spaniards, indeed, who found themſelves a continual prey to theſe furious ravagers, were almoſt reduced to deſpair; they leſſened the number of their ſhips, and the colonies gave up their connections with one another. The buccaneers were thus emboldened; and inſtead of confining themſelves to thoſe invaſions of the Spaniſh ſettlements, which had for their object a ſupply of proviſions, they determined, more eſpecially as their opportunities of making captures by ſea were diminiſhed, to procure by land that wealth which they could not obtain on the ocean. Accordingly, they formed themſelves into large bodies, and plundered many of the richeſt and ſtrongeſt towns in the New World. Maracaybo, Campeachy, Vera Cruz, Porto Bello, and Carthagena, on this ſide of the continent, and Quayaquil, Panama, and many other places on the coaſts of the South Sea, ſeverely ſuffered from their depredations. In a word, the buccaneers, the moſt extraordinary aſſociation of men that ever appeared on the face of the globe, but whoſe duration was tranſitory, ſubjected to their arms, without a regular ſyſtem of government, without laws, without any permanent ſubordination, and even without revenue, cities and caſtles, which had baffled the utmoſt efforts of national force; and if conqueſt, not plunder, had been their object, they might have made themſelves maſters of all Spaniſh America.

Among the buccaneers, who firſt acquired diſtinction in this mode of plundering, was Montbars, a gentleman of Languedoc, who conceived from his youth a violent antipathy to the Spaniards, on account of the enormities they had committed in the conqueſt of the New World, and who, determining on retaliation, embarked about the middle of the 17th century, on board a French ſhip for the Weſt Indies, in order to join theſe enemies of Spain. An enthuſiaſm which originated in humanity, at length became the ſource of the moſt unfeeling barbarity; for ſo much did the Spaniards ſuffer from the fury of this enthuſiaſt, that he acquired the name of the "Exterminator." Michael de Baſco and Francis Lolonois were alſo greatly renowned for their exploits both by ſea and land. The moſt important enterprize, in which theſe leaders, with eight veſſels and 660 aſſociates, engaged, was that of the gulf of Venezuela. This gulf runs up into the land for about 50 leagues, and communicates, by a narrow ſtrait, with the lake of Maracaybo. They began (A. D. 1667,) with ſtorming and taking the caſtle, called "La Barra," which defended this ſtrait, and putting to death the garriſon, conſiſting of 250 men; and they then advanced to the city of Maracaybo, built on the weſtern coaſt of the lake, at the diſtance of about 10 leagues from its mouth. But on their arrival, the inhabitants had abandoned it and removed their moſt valuable effects. Here they ſpent a fortnight in debauchery and riot; ſo that when they proceeded to Gibraltar, a town at the extremity of the lake, to which the flying inhabitants had retired, they found it newly fortified, and after reducing it at the expence of much blood, they took poſſeſſion only of an empty town. Exaſperated at this ſecond diſappointment, they ſet fire to Gibraltar; and Maracaybo would have ſhared the ſame fate, if it had not been ranſomed. But previouſly to this ranſom, they deſpoiled it of its bells, images, and all the ornaments of the churches, intending, as they ſaid, to build a chapel in the iſland of Tortuga, and to conſecrate that part of their ſpoil to ſacred uſes. But of all the buccaneers, French or Engliſh, no one was ſo uniformly fortunate and ſucceſsful, or executed ſo many daring enterprizes, as Henry Morgan, a native of Wales. While de Baſco, Lolonois, and their companions, were ſquandering, at Tortuga, the ſpoils they had acquired in the gulf of Venezuela, he ſailed from Jamaica, to attack Porto-Bello: and he conducted his meaſures ſo well, that ſoon after his landing, he ſurpriſed the centinels, and made himſelf maſter of the town, (A. D. 1668,) before the Spaniards could put themſelves into a poſture of defence. In order to reduce the citadel, whither the inhabitants had conveyed their moſt valuable property, and the plate of the churches, he recurred to the following artful expedient: he compelled the prieſts, nuns, and other women, whom he had made priſoners, to plant the ſcaling ladders againſt the walls of the fortreſs, from a perſuaſion that the gallantry and ſuperſtition of the Spaniards would not ſuffer them to fire on the objects of their love and veneration. In this imagination, however, he was deceived. The Spaniſh governor uſed his utmoſt efforts to deſtroy every one that approached the works; ſo that Morgan was reduced to the neceſſity of carrying the place by ſtorm. Having thus ſucceeded, he took poſſeſſion of a vaſt quantity of rich merchandize, and alſo of bullion and ſpecie amounting to one hundred thouſand pounds ſterling. With this booty Morgan and his aſſociates returned to Jamaica; and formed a new enterpriſe againſt Maracaybo. Accordingly he collected 15 veſſels and 960 men; and with this armament (A. D. 1669,) entered the gulf of Venezuela unobſerved, ſilenced the fort that defends the paſſage to the lake of Maracaybo, and found the town totally deſerted; but he diſcovered the chief citizens, and the greater part of their wealth in the neighbouring woods. He proceeded to Gibraltar, which was left deſolate; however, whilſt he was attempting, by the moſt horrid cruelties, to extort from the inhabitants whom he had ſeized, a diſcovery of their hidden treaſures, he was informed of the arrival of three Spaniſh men of war at the entrance of the lake. Having reconnoitred the enemy, he conſidered his condition as deſperate. Nevertheleſs, he concealed his apprehenſions, and ſent a letter to the Spaniſh admiral, boldly demanding a ranſom for the city of Maracaybo. The anſwer returned by the admiral was reſolute; inſiſting on his ſurrendering his booty and priſoners, with leave to return to his own country, or if he refuſed, announcing his fixed purpoſe of putting every man to the ſword. Morgan and his aſſociates deliberated; and they at length determined to riſk any conſequence rather than reſign their booty, which they had gained with ſo much peril. As the admiral adhered to his declared purpoſe, Morgan informed him, that if he would not allow him to paſs, he would find means to effect his eſcape without his permiſſion. He accordingly divided the ſpoil, ſo that each might have his own portion of it to defend; and having filled a veſſel, taken from the enemy, with combuſtibles, he gallantly proceeded to the mouth of the lake; and having burnt two of the Spaniſh ſhips and captured one, he made a feint of diſembarking men, in order to attack the fort by land, and thus diverted the attention of the garriſon, whilſt he paſſed the bar with his whole fleet, without receiving any damage. Morgan, having diſpoſed of his booty at Port Royal in Jamaica, put to ſea again (A. D. 1670,) with a larger fleet, and a more numerous body of adventurers; and after reducing the iſland of St. Catharine, ſteered for the river Chagre, by which he intended to advance to Panama. At the entrance of the river ſtood a ſtrong fortreſs; an arrow was ſhot from the bow of an Indian, and lodged in the eye of one of his aſſociates; but Morgan pulling the arrow from the wound, wrapped one of its ends in tow, put it into his loaded muſket, and diſcharged it into the fort; and this arrow falling on the roof of one of the houſes, which, according to the cuſtom of the country, were conſtructed of wood, and covered with ſtraw, ſet fire to it, and thus the Spaniards were thrown into the utmoſt conſternation. After the death of the governor, who bravely periſhed with his ſword in his hand, at the head of a few reſolute men, the place ſurrendered to the aſſailants. Morgan proceeded up the river to Craces, and thence by land to Panama, and, after ſeveral rencounters, took quiet poſſeſſion of it, and deliberately pillaged it for ſome days. Here he met with a fair captive, who inflamed his ſavage heart with love; and finding all his ſolicitations ineffectual, he made a forcible attempt on her perſon. "Stop, ruffian," ſhe exclaimed wildly, and ſpringing from his arms; "ſtop! thinkeſt thou to raviſh from me my honour, as thou haſt wreſted from me my fortune and my liberty? No! be aſſured that my ſoul ſhall ſooner be ſeparated from this body:" and ſhe drew a poniard from her boſom, which ſhe would have plunged into his heart, if he had not avoided the blow. Enraged by this virtuous reſiſtance, Morgan threw the female into a loathſome dungeon, and endeavoured to ſubdue her by ſeverities. But his followers became clamorous on account of his detention of them to no important purpoſe, and conſtrained him to relinquiſh this amorous purſuit. Before their return, the booty was divided, and the ſhare of Morgan himſelf amounted to 100 thouſand pounds ſterling. This wealth he carried to Jamaica, and never more engaged in any piratical enterprize. Some have ſaid (ſee Edwards's Hiſt. of the Weſt Indies, vol. i. p. 169,) that king Charles II., though he iſſued public orders for the ſuppreſſion of the hoſtilities of the buccaneers, exacted and received a ſhare of their booty; and that this circumſtance induced him to manifeſt peculiar favour to Morgan, to receive him graciouſly on his viſit to England, and to confer upon him the honour of knighthood. Several other expeditions were formed by the buccaneers of the 17th century, againſt the Spaniſh ſettlements. Van Horn, a native of Oſtend, who ſerved almoſt through life among the French, was very active in his depredations. Aſſociating, on one occaſion, with 1200 other perſons of the ſame deſcription, and manning a fleet of ſix veſſels, he ſailed to Vera Cruz, and, favoured by the darkneſs of the night, reached the place and landed without diſcovery. He and his companions made themſelves maſters of it without reſiſtance; and having confined all the citizens in the churches, whither they had fled for ſhelter, they placed at the door of each church barrels of gun-powder, and a buccaneer with a lighted match to ſet fire to them, upon the leaſt appearance of an inſurrection. They then proceeded to pillage the city; and having carried off whatever they could find of value, they made a propoſal to the priſoners, to ranſom their lives and liberty by a contribution of 437,500l. Half this money was paid them; but whilſt they were expecting the other moiety from the interior parts of the country, they were alarmed by the ſight of an European fleet of 17 ſhips, and reduced to the neceſſity of making a retreat, which they accompliſhed, by boldly ſailing through the Spaniſh fleet, carrying with them 1500 ſlaves. Other expeditions were concerted againſt Peru; and if the intrepidity of theſe numerous marauders had been directed by a ſkilful and reſpectable commander, they would have diſpoſſeſſed the Spaniards of this important colony. But their character prevented their union in a large and compact body, and their ſteady proſecution of the ſame object. However, they ſucceſſively attacked the moſt conſiderable places on the coaſt of the South Sea, enriched themſelves by plunder, and committed a great number of enormities. Others of the buccaneers aſſociated with Gramont, a native of Paris, who had diſtinguiſhed himſelf in a military capacity in Europe, and embarked with him, in 1685, to attack Campeachy. Having landed without oppoſition, after ſome reſiſtance on the part of the Spaniards, they made themſelves maſters of the city; and after carrying off the treaſures which they had collected in the town and its environs, and depoſiting them in their ſhips, they propoſed to the governor of the province to ranſom his capital. Upon his refuſal they determined to burn the place, and to demoliſh the citadel. Accordingly they deſtroyed to the value of a million of logwood, which was a very conſiderable part of their ſpoil, and after this act of folly and frenzy, they returned to St. Domingo. At a ſubſequent period, viz. in 1697, 1200 buccaneers joined a ſquadron of ſeven ſhips, that ſailed from Europe, under the command of Pointis, to attack the famous city of Carthagena. In this enterprize they ſucceeded, took the city, and acquired booty to the amount of 1,750,000l. After they had ſet ſail, their rapacious commander attempted to deprive them of their ſpoil; upon which they reſolved to maſſacre him; but being diverted from their purpoſe by one of their number, who propoſed returning to the city, where their ſhare of the plunder had been left by Pointis, they immediately ſailed towards Carthagena. Having entered the city without reſiſtance, they confined all the men in the great church, and demanded payment of 218,750l. which the alleged to be their ſhare of the booty, of which they had been defrauded, accompanying their demand with threats of vengeance if it was reſiſted. A venerable prieſt aſcended the pulpit, and by his eloquent addreſs perſuaded his hearers to ſurrender all the gold, ſilver, and jewels in their poſſeſſion. But the ſum raiſed falling ſhort of that which was demanded, an order was iſſued for plundering the city. The adventurers, having amaſſed as much treaſure as they could find, ſet ſail; but unfortunately they met with a fleet of ſhips belonging to Holland and England, both which nations were then in alliance with Spain, ſo that ſeveral of the pirates were taken or ſunk, with all the cargo which they had on board their ſhips; and the reſt eſcaped to St. Domingo. This was the laſt memorable event in the hiſtory of the buccaneers. The total ſeparation of the Engliſh and French buccaneers, in conſequence of the war between the two nations, which followed the revolution in 1688, very much weakened the force of theſe powerful plunderers: and the king of Spain alſo being then in alliance with England, repreſſed the piracies of his ſubjects in the Weſt Indies. However the French buccaneers continued their depredations, and with no ſmall ſucceſs, till the peace of Ryſwick, in 1697; when all differences between France and Spain having been adjuſted, hoſtilities were every where ſuſpended; and not only the aſſociation, but the very name of this extraordinary claſs of men, became extinct. They were loſt among the other European inhabitants of the Weſt Indies.

Before this period, however, the French colony in Hiſpaniola had arrived at a conſiderable degree of proſperity; and Jamaica, into which the ſpoils of Mexico and Peru were more abundantly poured, was already in a flouriſhing condition. The buccaneers found at Port Royal better reception and greater ſecurity than any where elſe. They could there land their booty with the utmoſt facility, and ſpend, in a variety of pleaſures, the wealth produced by their piracy; and as prodigality and debauchery ſoon reduced them again to indigence, that grand incitement to their ſanguinary induſtry induced them eagerly to concert freſh depredations. Thus the ſettlement derived benefit from their perpetual viciſſitudes of fortune, and was enriched by their rapacity as well as by their profuſion; by the views which led to their want, and alſo by their abundance. The wealth, which flowed into Jamaica through this channel, gave great activity to every branch of culture; and after the piracies of the buccaneers were ſuppreſſed, it proved a new ſource of riches, by enabling the inhabitants to open a clandeſtine trade to the Spaniſh ſettlements, whence it had its origin.

BUCCARI, Bukari, Bokeri, or Bukri, in *Geography*, a town of Morlachia, in that diſtrict of Hungarian Dalmatia called Zengh, or Segna, belonging to Auſtria, and ſeated on a rocky eminence in the north-eaſt part of the Adriatic. This town was declared by the emperor a free port for the commerce of the Eaſt Indies in 1780. The harbour, or rather the gulf of Buccari, or Bukaria, is commodious and ſafe; but a little expoſed to the ſouth-eaſt wind, which ſometimes makes it dangerous. From this place great numbers of cattle are ſhipped for Italy. N. lat. 45° 20′. E. long. 15° 13′.

BUCCATA, in *Entomology*, a ſpecies of Conops (*Myopa*, Fabr.). The prevailing colour of this inſect is ferruginous; abdomen hooked, and grey; face veſicular and white; wings clouded. Linn. Inhabits Europe.

BUCCATUS, a ſpecies of Oestrus, of a griſeous colour, with the face white, and dotted with black. Inhabits South Carolina.

BUCCELLARII, formed from *buccellus*, a kind of loaf, or cake of a circular figure, an order of ſoldiery under the Greek emperors, appointed to guard and diſtribute the ammunition-bread. The buccellarii were alſo called, in reſpect of their country, *Gallogræci*, or *Helenogalatæ*, q. d. Greeks of Galatia; ſometimes *Maryandini*.

Authors are much divided as to the office and quality of the buccellarii: ſome give the denomination to paraſites in the courts of princes and great men, maintained at their table and expence. In reality, among the Viſigoths, buccellarius was a general name for all clients or vaſſals who lived at the expence of their lords. Spelman rather ſuppoſes them to anſwer to what among us are called "tenants by military ſervice."—Others repreſent the buccellarii as ſtationary ſoldiers in the provinces, who, when the emperor commanded, marched before and behind him as his body guard.—According to others, they were men whom the emperors employed in putting perſons to death ſecretly.

BUCCELLATUM, formed from *buccea* or *buccella*, a morſel, or mouthful of meat, in *Ancient Military Writers*, denotes camp bread or biſket baked hard and dry, both for lightneſs and keeping. Soldiers always carried with them enough for a fortnight, and ſometimes much longer, during the time that military diſcipline was kept up.

BUCCHOREST, or BUCKHAREST, or BAKAREST, in *Geography*, a fortified town of European Turkey, and capital of Wallachia, ſeated on the river Dembrovitz; the uſual reſidence of the waywode, and the ſee of a Greek archbiſhop. The Lutherans hold their aſſemblies here, under the protection of Sweden. The number of inhabitants is eſtimated at 60,000. N. lat. 44° 50′. E. long. 26° 45′.

BUCCINA, an ancient military metalline inſtrument, crooked like a horn, uſed in war; eſpecially for proclaiming the watches of the night, and giving notice to the ſoldiery when they were to mount, and when to quit the guard.

The word comes from *bucca*, mouth, and *cano*, I ſing; becauſe played on by the mouth; others ſuppoſe it formed from *ϐȣκανη*, or *ϐυκανη*, which ſignifies the ſame; formed from *βȣς*, bullock, and *cano*, I ſing; becauſe anciently made of bullocks horns: others from the Hebrew *buk*, a trumpet. Varro will have it to have been originally formed by *onomatopæia*, from *bou bou*, alluding to the ſound it gives. Others with more probability derive it from *buccinum*, the name of a ſhell-fiſh.

The buccina is uſually conſidered as a ſpecies of *tuba*, or trumpet; from which, however, in propriety, it appears to have differed, not only in reſpect of figure, which in the tuba was ſtraight, and in the buccina recurved or crooked, but in ſound, that of the buccina being ſharper and audible to a greater diſtance than the trumpet ſound.

The buccina approached neareſt to the *cornu*, or horn: originally the two ſeem to have been the ſame; though in after times a difference aroſe; the name buccinum being reſtrained to the leſſer ſorts, and the cornu to the larger.—Some alſo take the buccina to have been leſs crooked than the cornu, which made a full ſemicircle.

Varro aſſures us, that the buccinæ were alſo called *cornua*, horns; becauſe originally made of the horns of cattle, as is ſtill done among ſome people. Servius intimates, that they were at firſt made of goats or rams-horns; and accordingly, in Scripture, the like inſtruments uſed both in war, and in the temple, are called "rams-horns," *keren jobal* and *ſopheroth haijobelim*, or buccinæ of rams.

This inſtrument was in uſe among the Jews, to proclaim their feaſt-days, new moons, jubilees, ſabbatic years, and the like. At Lacedæmon, notice was given by the buccina when it was ſupper-time; and the like was done at Rome, when the grandees had a buccina blown both before they ſat down to table, and after.

The ſound of the buccina was called *buccinus*, or *bucinus*, and the muſician who played on it, *buccinator*.

BUCCINA alſo denotes the ſpace or extent to which the ſound of the buccina may be heard.

BUCCINA *auris*, in *Middle Age Writers*, denotes the *tympanum* or *drum* of the ear.

BUCCINATOR, he that ſounds or winds the buccina. Among the Romans there was a public ſlave, denominated *buccinator nominum*, whoſe office it was to attend the public crier.

BUCCINATOR *Muſculus*, in *Anatomy*, ariſes from the alveolus, containing the laſt grinder of the lower jaw, from the coronoid proceſs, and from the tubercle behind the ſocket of the laſt grinder of the upper jaw; its fibres proceed over the membrane of the mouth, where it lines the cheek, and terminate extenſively in both the lips and in the angle of the mouth. It may draw the lips backwards towards its poſterior attachments, and when the lips are made fixed parts by the action of the orbicularis oris, it will thruſt any matter intervening between the cheek and the cavity of the mouth into that cavity, for the purpoſes of maſtication and deglutition.

BUCCINATOR, in *Entomology*, a ſpecies of HYDRACHNA, of an obovate form; colour red, black behind; tail cylindrical, yellow, and narrowed at the baſe.

Degeer has this as *acarus caudatus*. It is found on banks. The body is black beneath, eyes reddiſh, legs black.

BUCCINUM, in *Botany*. Dodon. gal. See DELPHINIUM *Conſolida*.

BUCCINUM, in *Conchology*, a genus of univalves, deſcribed by Linnæus as having the ſhell ſpiral and gibbous; the aperture ovate, terminating in a ſhort canal inclining to the right, with a retuſe tail or beak; and the pillar lip expanded. Animal inhabiting the ſhell a limax.

Linnæus comprehends a vaſt number of ſpecies in his genus buccinum, which, for the ſake of methodical uniformity and perſpicuity, he places under ſeveral diſtinct ſections; a mode of arrangement in which he has been cloſely followed by his editor, Gmelin, in the laſt edition of the Syſtema Naturæ. We ſhall follow the latter writer, as uſual, in the firſt inſtance, and afterwards notice certain alterations that have been made in the arrangement of the buccinum genus by other naturaliſts.

Ampullacea, the firſt family, is diſtinguiſhed by having the ſhell inflated, rotundate, thin, ſubdiaphanous, and fragile. This ſection includes the ſpecies olearium, galea, perdix, pomum, dolium, caudatum, niveum, and clathratum.

Caſſidea caudata, in which the tail or beak is exſerted, ſhort, reflected; lip unarmed externally. Many ſpecies are included in this ſection; namely, echinophorum, plicatum, cornutum, rufum, tuberoſum, flammeum, teſticulus, decuſſatum, areola, tigrinum, undulatum, cicatricoſum, teſſellatum, pennatum, maculoſum, bilineatum, gibbum, ventricoſum, ſtrigoſum, rugoſum, ponderoſum, recurviroſtrum, trifaſciatum, ſenegalicum, ochroleucum, ſtriatum, caſſis, ſtrigatum, tyrrhenum, and abbreviatum.

Caſſidea unguiculata. Shells of this family have the poſterior part of the lip prickly on the outſide, but in other reſpects reſemble thoſe of the laſt ſection; the ſpecies are erinaceus, glaucum, vibex, teſſulatum, noduloſum, fimbria, papilloſum, and glans.

Calloſa. Theſe ſhells have the pillar lip dilated and thickened. The ſpecies of this tribe are few, ; namely, arcularia, pullus, gibboſulum, mutabile, and neriteum.

Detrita, in which the pillar lip has the appearance of being worn flat; harpa, coſtatum, perſicum, monodon, patulum, hæmaſtoma, lapillus, ſmaragdulus, tuba, pyrum, ſpadiceum, umbilicatum, candidum, ſcala, craſſum, marginatum, labyrinthus,

rinthus, ruſticum, varium, filoſum, coronatum, ſqualidum, craſſum, and fornicatum, are the ſpecies of this family.

Lævigata, ſmooth, and not included in the preceding ſections. Spiratum, pyrozonias, læve, ocellatum, pyramidale, glaberrima, ſtrigoſum, trifaſciatum, leucozonias, cancellatum, obtuſum, glabratum, ſtromboides, praeroſum, auſtrale, orbita, and turgitum.

Angulata, angulated, and not included in the foregoing ſections. Undoſum, affine, tranquebaricum, verſicolor, cruentatum, ſulcatum, rumpſii, bezoar, gracile, undatum, ciliatum, viridulum, carinatum, ſolutum, tænia, lineatum, maclovienſe, foliorum, textum, ſtrigoſum, anglicum, porcatum, læviſſimum, igneum, plumatum, lyratum, clathratum, reticulatum, niveum, ſcalare, indicum nodulоſum, piſcatorium, S. mauritii, armillatum, plicatulum, vulgatum, ſtolatum, nanum, exile, chalys, verrucoſum, alatum, nigro-punctatum, nitidum, lævigatum, lamelloſum, ſcutalatum, hauſtorium, ventricoſum, teſtudineum, catarrhacta, tahitenſe, and lamellatum.

Turrita, ſmooth and ſubulate. The ſpecies of this kind are maculatum, crenulatum, hecticum, vittatum, ſtigilatum, duplicatum, lanceatum, dimidiatum, murinum, tigrinum, acus, ſuccinctum, commaculatum, haſtatum, aciculatum, phallus, flumineum, aſperum, muricinum, tuberculatum, punctulatum, acicula, faſciolatum, niveum, mucronatum, digitellus, obliquum, chalybeum, fluviatile, radiatum, lividum, edentula, pugio, canaliculatum, varioſum, cuſpidatum, cinereum, virginicum, proximatum, monile, cingulatum, and geminum.

The definition of the genus buccinum, as laid down by Linnæus, is liable to objection in ſeveral reſpects. It includes a number of ſhells ſo very diſſimilar in general form, and ambiguous in their moſt eſſential character, that we cannot eaſily reconcile ourſelves to retain the whole within the limits of a ſingle genus. But we are ſtill perſuaded that all the ſpecies which can conveniently be compriſed under either of the ſub-diviſions ought to be retained, and thoſe only to be removed from the buccinum genus which can with more propriety be referred to the other analogous genera of univalves. Bruguière divides the Linnæan ſhells of this tribe into four diſtinct genera; to the firſt of which he gives the name of *buccin*, or buccinum, the others he calls *vis*, *caſques*, and *pourpres*. La Marck has innovated farther ſtill on the Linnæan order; or, rather, he has laboured to overthrow the ſyſtem of the illuſtrious Swede altogether, and in its place to eſtabliſh the arrangement of his own. The ſhells which Bruguière retained under the title of buccin, La Marck divides again into four new genera; namely, buccin, harpe, tonne, and eburne-

The ſhells of the buccinum kind are commonly furniſhed with an operculum; the animal, as before obſerved, a limax or ſnail, ſubject to ſome ſlight difference in its form in different ſpecies. They are oviparous, and the males are ſaid to be ſmaller and higher in colour than the females.

BUCCIORSERAI, in *Geography*, a town of Hindooſtan, in the circar of Dooab; 18 miles S. E. of Etaya.

BUCCO, in *Anatomy*, a name given by Riolanus, and ſome others, to the muſcle more uſually called *buccinata*, and *contrahens labiorum.*

Bucco, in *Ornithology*, a genus of birds in the Picæ order, diſtinguiſhed by having the bill ſharp-edged, compreſſed on the ſides, notched on each ſide near the apex, bent inwards, with a long ſlit beneath the eyes. Noſtrils covered with incumbent feathers: feet formed for climbing. Gmel.

The ſpecies of the bucco genus are tamatia, cayennenſis, capenſis, elegans, macrorhynchos, melanoleucos, philippinenſis, niger, parvus, grandis, viridis, Lathami, fuſcus, rubricapillus, zeylanicus, dubius, and cinereus.

BUCCULA, in *Anatomy*, the fleſhy part under the chin. Some extend the name farther to the whole lower part of the face, comprehending the under part of the lower lip, with the chin and the fleſhy part under it.

Buccula, in *Antiquity*, denotes the *umbo* of a ſhield, or the part prominent in the middle thereof.

It is thus called, becauſe uſually made in the form of a mouth or face, either of a man or ſome animal. The like figures were ſometimes alſo found on other parts of armour, eſpecially on the *loricæ* and *thoraces*.

BUCENI, in *Geography*, a town of European Turkey, in the province of Moldavia; 38 miles N. N. W. of Galatz.

BUCENTAUR, the name of a large ſtate veſſel, uſed by the Venetians in the ceremony of eſpouſing the ſea, performed each Aſcenſion-day with much pomp.

The word comes from βȣκενταυρος; compoſed of βȣ, a particle of augmentation, uſed to denote an enormous greatneſs, and κενταυρος, *centaur*. Juſtiniani adds two other etymologies: the firſt from *bis*, and *taurus*, or rather *centaurus*, the name of one of Æneas's veſſels in Virgil: the other from *bucentaurus*, for *ducentaurus*, a word forged to ſignify a veſſel capable of holding two hundred men.

P. Juſtiniani gives a very preciſe deſcription of the bucentaur, which is adorned with five pillars on both ſides, and gilt from the prow to the ſtern, alſo covered over head with a kind of tent, made of purple ſilk; and he adds, that its origin is carried up as high as the year of Chriſt, 1311, though others trace it higher, to the year 1177, when the emperor Frederic Barbaroſſa came to Venice, to make peace with the republic and the pope; at which time the pope, in conſideration of the ſervices the ſtate had done him, in ſheltering him in their city, when he had been driven out of his own, granted them ſeveral privileges; and made a preſent to the doge of a gold ring, which is the origin of that, yearly caſt by the doge, from the bucentaur, into the ſea.

It is on Aſcenſion-day, that the doge, being advanced in the bucentaur a little way into the gulph, throws a gold ring into the ſea, and ſays, "We marry thee, O ſea, in token of that true and perpetual dominion which the republic has over thee."

In this veſſel the doge receives the great lords, and perſons of quality that viſit Venice, accompanied with the ambaſſadors, and counſellors of ſtate, and all the ſenators ſeated on benches near him.

The archducheſs Maria Joſepha, married to the prince of Saxony, on the day of her entry into Dreſden, was received in a magnificent galley, finely rigged and called a *bucentaur*, becauſe built after the model of that of Venice.

A veſſel of the ſame name, as large and magnificent as that of the Venetians, was conſtructed by order of the elector of Bavaria, and launched in a lake ſix leagues in length.

BUCEPHALIA, in *Entomology*, a ſpecies of Bombyx, the anterior wings of which are cinereous, with two ferruginous ſtreaks, and a large yellow terminal ſpot at the tip. *Gmel.* &c.; called in Engliſh the buff-tip moth. Feeds on the lime, oak, willow, &c.

Bucephala, or *Bucephalia*, in *Ancient Geography*, a town of India, on the weſt ſide of the river Hydaſpes, built by Alexander on the ſcite of his camp before his engagement with Porus, and ſo called (as Arrian ſays) in honour of his horſe Bucephalus, which was killed, as ſome ſay, in that action, or who died, according to Arrian, of old age, being about 30 years old, and was buried on the ſpot. Heſychius ſays, that this horſe derived its name from being branded on the buttock with the head of an axe. As he had been long the companion of the toils and dangers of his maſter, he ſhared extraordinary tokens of regard. When he was loſt for a time in the country of the Uxii, Alexander iſſued a proclamation, commanding his horſe to be reſtored, and threatening to ravage the whole country with fire and ſword. The command was inſtantly obeyed. "So dear," ſays Arrian, "was this horſe to Alexander, and ſo terrible was Alexander to the Barbarians." Arrian. de Exped. Alex. lib. v. p. 219, 220. ed. Gronovii.

Bucephala, a name given to a ſmall town on one of the iſlands of the Grecian Archipelago, now called "La Cavale," which Alexander cauſed to be built there in honour of his horſe Bucephalus.

Bucephala, in *Ornithology*, the name of a ſpecies of Anas that inhabits North America. In the *Arctic Zoology* it is called the *buffel headed duck*. This kind is of a whitiſh colour, with the back and wings black: the head large or tumid, ſilky, and ſhining.

Buffon calls this *le petit canard à groſſe tête*. The bill is ſhort, and either blue or brown: head black, gloſſed with green, or purple: collar and upper part of the breaſt white; lower part, with the abdomen, clouded browniſh: area of the wing white: tail cinereous: legs fulvous.

BUCEPHALON, in *Botany*. Plum. See Trophis.

BUCEPHALUS, in *Entomology*, a ſpecies of Cryptocephalus of a cyaneous colour, having the mouth, margin of the thorax, and the legs red. *Fabr.* Called by *Schaller*, Chryſomela bucephala.

BUCER, Martin, in *Biography*, an eminent German reformer, was born in 1491 at Scheleſtadt, in the province of Alſace. At the age of ſeven years he entered into the order of the Dominicans; and having ſtudied logic and philoſophy at Heidelberg, he afterwards applied himſelf to divinity, and became a proficient in the Greek and Hebrew languages. At Heidelberg he held ſome conferences with Luther in 1521, and having previouſly peruſed ſome of his writings, and alſo thoſe of Eraſmus, he was proſelyted to the proteſtant party. Of his converſion he gave evidence by marrying; and his wife was a converted nun, by whom he had 13 children. He ſettled at Straſburg, and officiated there both as miniſter and theological profeſſor for 20 years; and to his labours the progreſs of the reformation in that city was much indebted. His talents and reputation cauſed him to be employed in many conferences and negotiations; and in 1548 he was ſent for to Augſburg to ſign the agreement between the papiſts and proteſtants, called the "Interim;" but his oppoſition to that project involved him in a variety of troubles. At this time he was invited to England by archbiſhop Cranmer, and appointed a profeſſor of theology in the univerſity of Cambridge. King Edward VI. for whoſe uſe he compoſed a book, entitled "Concerning the Kingdom of Chriſt," manifeſted great regard for him; and when he complained of the cold of this climate, preſented him with 100 crowns towards purchaſing a German ſtove. He died of a complication of diſorders in 1551, and was interred at Cambridge with diſtinguiſhed funeral honours. In the bigotted reign of queen Mary, his body was dug up and burnt, and his tomb demoliſhed; but it was ſet up again by order of queen Elizabeth. His erudition was various and extenſive; of which he furniſhed ample evidence by his numerous writings, and by his learned lectures. His ſtyle, however, was obſcure, nor was it always eaſy to comprehend his meaning. He was moderate in his temper, and particularly ſolicitous for preſerving unity among the foreign churches. On occaſion of the differences that took place between Luther and Zuinglius, and their reſpective followers, he inclined to the ſentiments of the latter; but by his endeavours to reconcile them, he incurred reproach from the zealots of both parties. His zeal for maintaining peace and concord betrayed him into an ambiguity of language, and conciliatory artifices, which gave offence both to his friends and enemies. He ſeems to have been inclined to allow the merit of good works, nor was he adverſe to epiſcopacy; and on both theſe accounts he was regarded with ſome degree of ſuſpicion by Calvin and his followers. He was much oppoſed by the popiſh party at Cambridge; and as he did not poſſeſs the talents of an acute and ready diſputant, Peter Martyr adviſed him to avoid all public diſputes. Gen. Dict. Moſheim's Eccl. Hiſt. vol. iv.

BUCERAS, in *Botany*. Brown. Jam. See Bucida.

Buceras, Haller. See Trigonella *Fœnum Græcum*.

BUCEROS, in *Ornithology*, the name of a genus in the order Picæ, called in Engliſh hornbill. Birds of this kind have the bill convex, curved, ſharp at the edge, of a large ſize, and ſerrated outwardly; a horny or ſomewhat bony protuberance on the upper mandible, near the front of the head: noſtrils behind the baſe of the bill. Tongue acute and ſhort. Feet greſſorial.

Of this genus there are twelve ſpecies, namely bicornis, abyſſinicus, africanus, malabaricus, hydrocorax, rhinoceros, galeatus, panayenſis, manillenſis, naſutus, albus, and obſcurus. Obſ. The laſt is named plicatus by Latham, who alſo adds four new ſpecies to the buceros genus, ginginianus, orientalis, griſeus, and viridis.

BUCHAN, William, in *Biography*, doctor in medicine, of a reſpectable family in Roxburgſhire, was born at Aneram in the year 1729. Having paſſed through the uſual ſchool education, he was ſent to the univerſity at Edinburgh. His inclination leading him to mathematics, he became ſo conſiderable a proficient in that branch of ſcience, as to be enabled to give private leſſons to many of the pupils. Having made choice of medicine for his profeſſion, he attended the lectures of the ſeveral profeſſors, neceſſary to qualify him for practice; and as he continued in the univerſity nine years, and was of a ſtudious turn of mind, his progreſs in knowledge may be ſuppoſed to have been equal to his application. He now removed to Sheffield in Yorkſhire, where he commenced practitioner, in conjunction with another gentleman, who had invited him thither. Soon after he became a candidate, and ſucceeded in gaining the appointment of phyſician to the Foundling Hoſpital at Ackworth. From the opportunity he enjoyed here of ſeeing, and attending to the diſeaſes of children, he was probably induced to give for his inaugural theſis, on his taking the degree of doctor in medicine, "De infantum vita conſervanda." It was then much approved, and the ſubſtance of it nows forms a ſection in his "Domeſtic Medicine." He is ſaid from the regulations introduced by him for the management of the children in the hoſpital, to have conſiderably reduced the proportionate number of deaths of the children ſupported by that inſtitution. This, however, did not prevent government from withdrawing their ſupport to the hoſpital, which was in conſequence given up, and the doctor, with his wife and ſon, removed to Edinburgh, and continued to practiſe medicine there for ſeveral years, during which he employed his leiſure hours in compoſing his "Domeſtic Medicine," a work too well known to need being particularly deſcribed. It is written on the plan of Tiſſot's "Avis aux Peuples," to which it is certainly not inferior. It has been ſaid, that by familiarizing the method of treating diſeaſes, as it is attempted to be done by works of this kind, the medical profeſſion would be degraded, and the profeſſors of the art would loſe a portion of their reſpectability, and of their profits: but experience has ſhewn that none of theſe events have followed; neither have we much reaſon for believing that the public are better judges of the merit of their medical adviſers ſince the appearance of this popular work, which is one of the advantages we were taught to expect from it. If it has been profitable to any conſiderable degree, it may ſeem rather to have operated as a prophylactic, teaching the method of preventing diſeaſes by regimen, than the art of diſcriminating them, or the mode of curing them when preſent. However that may be, ſince the year 1771, when the "Domeſtic Medicine" was firſt publiſhed, it has paſſed through nineteen editions, each of them, we are told, of 5000, or more copies. It has alſo been tranſlated into all the modern languages, and procured for the author a gold medal, and a commendatory letter, more valuable than the medal, from the empreſs of Ruſſia. On the death of the late Dr. Gregory, Dr. Buchan offered himſelf as a candidate for the late profeſſorſhip, but did not ſucceed. Mr. Ferguſon, teacher of natural philoſophy, dying ſoon after, he left the doctor his apparatus, with which, in conjunction with his ſon, he gave lectures at Edinburgh twice each ſeaſon, for three years. In the mean while his fame being extended by the ſale of his book, he was induced to come to London about the year 1778. He had now opportunity of ſuperintending the reprinting of his "Domeſtic Medicine," to which from time to time he made ſuch alterations and additions as increaſing experience had enabled him to collect, which entitled him to further remuneration from the bookſellers. In 1786 he publiſhed "Cautions concerning Cold Bathing, and drinking Mineral Waters," 8vo. This was followed in 1796 by "Obſervations concerning the Prevention and Cure of the Venereal Diſeaſe." The next year he publiſhed "Obſervations concerning the Diet of the Common People." This has been incorporated with his Domeſtic Medicine. His laſt work publiſhed in 1800, is on "the offices and duties of a mother." He died on the 25th of February, 1805, of a dropſy in the cheſt, at the houſe of his ſon, in Percy ſtreet, and was buried in the cloiſters, on the weſt ſide of Weſtminſter abbey.

Buchan, in *Geography*, a diſtrict or territory on the eaſt coaſt of Scotland, lying partly in the county of Aberdeen, and partly in that of Bamff. The latter part extends northwards from the Ugie to the ſea, and weſtward as far as Deveron, comprehending a tract of twenty miles in length by nine in breadth. The ſurface is moſtly barren, though ſome parts of it are well cultivated. The coaſt is bold and rocky, and in ſome places preſents almoſt perpendicular precipices. This diſtrict formerly belonged to the earl of Buchan; but upon the attainder of that family in 1320, Robert Bruce divided the lands among his friends; and though the title has been renewed in the preſent family of the Erſkines, the preſent earl of Buchan poſſeſſes but little property in the diſtrict. See ſir John Sinclair's Statiſtical Account of Scotland.

BUCHANAN, George, in *Biography*, a famous poet and hiſtorian, eminently diſtinguiſhed among modern writers by the purity and elegance of his Latin ſtyle, was the deſcendant of an ancient family reduced to indigence, and born in the ſhire of Dumbarton, in Scotland, in 1506. The talents which he manifeſted in early life induced an uncle to ſend him to Paris for his education; but after purſuing his ſtudies with ſingular aſſiduity for nearly two years, the death of his uncle and his own ill ſtate of health obliged him to return home. Urged, perhaps, more by his neceſſities than by inclination, he enliſted as a common ſoldier in the body of French auxiliaries brought over to Scotland with John duke of Albany; but ſoon diſguſted with their mode of life, he attended the lectures on logic delivered at St. Andrew's by John Major, and accompanied him to Paris. After ſtruggling about two years with indigence and misfortune, he was appointed, in 1526, grammatical profeſſor in the college of St. Barbe; and having remained in this ſituation three years, he obtained the patronage of Gilbert Kennedy, earl of Caſſilis, and was introduced into his family as private tutor and domeſtic companion. In this ſituation he continued five years; and availing himſelf of the intervals of leiſure which he enjoyed, he tranſlated Linnacre's rudiments of grammar into Latin, which was printed at Paris by Robert Stephens, in 1533. Two years after his return to Scotland his noble patron died; and he was appointed by king James V. preceptor to his natural ſon James, afterwards the famous regent, earl of Murray. About this time he incurred the reſentment of the Franciſcan friars by a ſatirical poem, entitled "Somnium;" but the clamour of theſe monks ſerved only to increaſe his prejudice againſt them, and to ſtrengthen his inclinations towards Lutheraniſm. As ſoon as the king diſcovered, in 1538, that they were forming a conſpiracy againſt himſelf, he commanded Buchanan to write a poem againſt them. His firſt performance was leſs poignant than the king wiſhed it to have been; and he was commanded a ſecond time to write with greater ſeverity. Accordingly he publiſhed his "Franciſcanus;" written more in the ſtyle of Juvenal than of Horace, and abounding ſo much with invective and ridicule, that theſe monks became his irreconcileable enemies, and excited the general indignation of the clergy againſt him. The king himſelf was induced to withdraw his protection; ſo that Buchanan was tried for hereſy, and in 1539 committed to priſon. However, he ſoon found an opportunity of making his eſcape, and fled, firſt to England, and afterwards to France. But at Paris he dreaded the influence of his avowed enemy, cardinal Beaton, who happened to be then in the city, and he withdrew to Bourdeaux, whither he was invited by Andrew Goveanus, a learned Portugueſe, who was principal of a new college in that city. Here he taught for three years in the public ſchools; and he alſo compoſed two tragedies, viz. "Baptiſtes, ſive Calumnia," ſaid to have been tranſlated by Milton, and publiſhed in 1641, and "Jephthes, ſive Votum," and tranſlated the "Medea," and "Alceſtis" of Euripides. During his reſidence at Bourdeaux the emperor Charles V. paſſed through the city, and was preſented by Buchanan with an elegant Latin poem, which gave him great ſatisfaction. Cardinal Beaton made ſeveral attempts to render his ſituation uneaſy to him, but they were counteracted by the interpoſition of his friends. However, in 1543, he left Bourdeaux on account of the peſtilence, and for ſome time took part in the education of Michael de Montaigne, the celebrated author of the "Eſſays." In the following year he went to Paris, and joined Turnebus and Muretus in conducting the education of the ſtudents in the college of Bourbon. In 1547, he accompanied Goveanus to the newly founded univerſity at Coimbra; but the death of his friend, after a happy union of one year, ſubjected him to the enmity of the bigotted natives, who accuſed him of hereſy, and confined him for a year and a half in the priſon of the Inquiſition, from whence he was afterwards removed to a monaſtery. In this ſituation he began his tranſlation of "David's Pſalms" into Latin verſe, a work which has contributed in a high degree to his reputation as a poet. His tranſlation of the 104th pſalm has been particularly admired. The next in merit is the 137th in elegiac verſe. In 1551, he was releaſed, and the king, deſirous of retaining him in the country, granted him a ſmall penſion. But having no ſtrong inducements to prolong his ſtay in this country, he embarked for England; where, notwithſtanding ſome advantageous offers were made to him, public affairs were in an unſettled ſtate; and he thought it moſt adviſable to remove to France, in 1553. Although he ſeems to have been fond of this country, he deplores in ſome of his elegies the miſerable condition of thoſe who were employed in the department of inſtruction at Paris. In 1555, he was entruſted by Marſhal de Briſac, who then commanded in Piedmont, with the education of his ſon; and having continued in this ſtation for five years, he devoted his intervals of leiſure to the ſtudy of the ſacred writings, and alſo to ſome poetical compoſitions, viz. his "Ode" upon the capture of Calais by the duke of Guiſe, his "Epithalamium," on the marriage of Mary queen of Scots to the dauphin of France, and part of his poem on the "Sphere." In 1560, he returned to Scotland, and avowed his converſion to Proteſtantiſm, which was then the eſtabliſhed religion of the country. He was ſoon after, viz. about the year 1566, appointed principal of St. Leonard's college in the univerſity of St. Andrew's; where he alſo for ſome time taught philoſophy; and at this period he made a collection of his Latin poems. Such was the reſpect entertained for his uncommon abilities and learning, that, in 1567, he was appointed, though a layman, moderator of the general aſſembly of the church of Scotland. When his former pupil, the earl of Murray, came into power, he formed an intimate connection with him and with the party, that was adverſe to queen Mary. He accompanied this nobleman to York, and to Hampton court, where he acted as an aſſiſtant to the commiſſioners that were deputed from Scotland to conduct the accuſations againſt the queen. Previous to this period he had been appointed by an aſſembly of the Scots nobility preceptor to the young king James VI. It was under his tuition, which continued for ſeveral years, that James acquired that ſcholaſtic knowledge, on which he ſo much prided himſelf; and it is ſaid, that when Buchanan was afterwards reproached with having made his majeſty a pedant, he replied, "that it was the beſt he could make of him." It is moreover reported, that Buchanan's reverence for his royal pupil did not prevent his giving him a ſevere whipping, when he perſiſted againſt remonſtrance in diſturbing him whilſt he was reading. In 1571, Buchanan publiſhed his "Detectio Mariæ Reginæ," arraigning the character and conduct of queen Mary, and expreſsly charging her with being concerned in the murder of her huſband, lord Darnly; and of all our hiſtorians he alone avowedly accuſes the queen of a criminal paſſion for David Rizzio. On this ſubject it will be ſufficient to obſerve in this place, that admitting, with the moſt reſpectable and impartial judges, the general guilt of Mary, Buchanan diſcuſſes the queſtion and enforces the charge alleged againſt her with the vehemence and acrimony of a partizan. Such was the high eſtimation in which Buchanan was held, that after the aſſaſſination of his patron, the earl of Murray, in 1570, he continued in favour with thoſe who poſſeſſed power in the country, and was appointed one of the lords of the council, and lord privy ſeal. He had alſo a penſion of 100l. a year ſettled on him by queen Elizabeth; which can hardly be conſidered as an adequate recompence for the ſervices rendered by him, or ſuitable to the high offices which he ſuſtained, and of which his tenure was precarious and of no long continuance. In 1579, he publiſhed his famous treatiſe "De Jure Regni apud Scotos," written in the form of a dialogue, and containing an explicit avowal of the right of ſubjects to decide upon and controul the conduct of their rulers. This work, as we may naturally imagine, was highly extolled by ſome, and as violently cenſured and condemned by others. The author, however, ventured to dedicate it to his royal pupil, although the doctrine it contains was not very conformable to his views and inclinations. Whatever may be thought by contending parties of the principles which Buchanan has advanced in this publication, the avowal of them precludes the ſuſpicion of his having been actuated by mercenary motives. During the laſt twelve or thirteen years of his life he was employed in compoſing his hiſtory of Scotland; and for the ſake of obtaining greater leiſure he retired from court and paſſed ſome of his laſt years at Stirling. This work, entitled "Rerum Scoticarum Hiſtoria," and compriſed in 20 books, was publiſhed at Edinburgh in 1582, not long before his death, which happened on the 28th of September in the ſame year. Towards the cloſe of his life, his circumſtances were much reduced; and it is ſaid, that when he was dying, he ordered the ſmall ſum of money that remained, and which was inſufficient for defraying the expences of his funeral, to be given to the poor, expreſſing at the ſame time great indifference about the fate of his corpſe. Accordingly, he was buried at the expence of the city of Edinburgh in the cœmetery of the Grey friers. The manner of his death has given occaſion to his enemies for calumniating him as a libertine and an atheiſt; but for charges of this kind, chiefly adduced by bigotted Catholics, there is no juſt foundation. Sir James Melvil, differing with him in his political ſentiments and connections, has nevertheleſs done him the juſtice to declare, that he died a ſincere member of the reformed church. Againſt his moral character, it has been alleged, that he reduced himſelf by extravagance and debauchery to penury and indigence, at the cloſe of his life; but to this charge it has been replied, that his inattention to pecuniary matters, and the profuſeneſs of his charity, might account for his indigence, without aſcribing it to culpable prodigality. His advocates, however, allow, that when he poſſeſſed wealth, he was, to an extreme degree, careleſs of the future, and that he made no proviſion for the ſeaſon of dotage and helpleſſneſs. It has been further urged againſt him, that ſeveral of his poems indicate indelicacy and licentiouſneſs; but his advocates have ſought an apology for him from the age in which he lived, the taſte of which was in this reſpect very different from that of a later period. The ancient ſatiriſts, ſays Mr. Hume, often uſed great liberties in their expreſſions; but their freedom no more reſembles the licentiouſneſs of Rocheſter, than the nakedneſs of an Indian does that of a common proſtitute. With regard to his temper, Buchanan ſeems to have been harſh and unamiable; and, as a party man, virulent and little inclined to indulge ſcruples. The perſecutions of prieſts, and the oppreſſion of miſfortune, ſerved to augment the natural fretfulneſs and aſperity of his diſpoſition, and gave an edge to his ſpleen. However, in his conduct he frequently exhibits a noble independence; and with reſpect to the public principles which he adopted, there is no reaſon to ſuſpect in his avowal of them want of integrity; however he might have been influenced in ſome degree by partiality to his party, or deceived by the reports of others. The learned John Le Clerc has very ably ſhewn (Bibliotheque Choiſie), that there is much reaſon to conclude, that many of the ſevere cenſures which have been thrown out againſt Buchanan, were the reſult of ignorance, of prejudice, and of party animoſity. Sir John Melvil, who was of the oppoſite party, allows, that as far as he was concerned in public affairs, he diſtinguiſhed himſelf by his probity, and by his moderation. But whatever different opinions may have been entertained by perſons of oppoſite parties concerning his diſpoſition and moral character, all concur in applauding him as a writer. "His poetical character," ſays a very competent judge, "ſtands extremely high; yet his merit does not conſiſt ſo much in ſublimity or lofty flights of the imagination, as in ſplendour of diction, and harmony and variety of verſification. He wrote in almoſt every ſpecies of compoſition. His "Pſalms" are in almoſt all kinds of meaſure, and ſome of them exquiſitely beautiful. In tragedy, he is charged with want of elevation, and with familiarity of ſtyle approaching to the comic. His didactic poem "On the Sphere," is elegant but unequal. His odes, epigrams, ſatires, eulogies, and miſcellaneous pieces, poſſeſs merit of various kinds, not without many defects. They ſhew, however, extreme facility in the uſe of language, and an inexhauſtible vein of poetical expreſſion." As a poet, ſays Mr. James Crawford, he imitated Virgil in heroics, Ovid in elegiacs, Lucretius in philoſophy, Seneca in tragedies, Martial in epigrams, Horace and Juvenal in ſatires. As an hiſtorian, he is ſaid to have combined the brevity of Salluſt with the elegance and perſpicuity of Livy. He has been charged, however, with an inclination to fable in his narrative, and with an undue attachment to the party with which he was connected. Of his dialogue "De Jure Regni," it has been ſaid, that, notwithſtanding ſome objectionable ſentiments and invectives, it contains rational principles of government; that it diſplays uncommon acuteneſs and extent of knowledge; and that it was calculated to enforce ſound maxims of civil policy, at a period in which they were little underſtood. Of his "Scots Hiſtory," written in his old age, archbiſhop Spotſwood ſays, it was written with ſuch judgment and eloquence, that no country can ſhew a better; though he adds, that Buchanan is juſtly blamed for ſiding with the factions of the time. The celebrated Thuanus obſerves, that although, according to the genius of his nation, he ſometimes inveighs againſt crowned heads with ſeverity, yet this work is written with ſo much purity, ſpirit, and judgment, that it does not appear to be the production of a man who had paſſed all his days in the duſt of a ſchool, but of one who had been all his life-time converſant in the moſt important affairs of ſtate. Of Buchanan's hiſtory, Dr. Robertſon ſays, (Hiſt. of Scotland, vol. i. p. 5, 8vo.) that "if his accuracy and impartiality had been, in any degree, equal to the elegance of his taſte, and to the purity and vigour of his ſtyle, his hiſtory might be placed on a level with the moſt admired compoſitions of the ancients. But, inſtead of rejecting the improbable tales of the chronicle writers, he was at the utmoſt pains to adorn them; and hath clothed, with all the beauties and graces of fiction, thoſe legends, which formerly had only its wildneſs and extravagance." Theſe two works, as Mr. Mackenzie informs us, were condemned in Scotland by act of parliament. "The happy genius of Buchanan," ſays the celebrated hiſtorian juſt cited (Hiſt. of Scotland, vol. ii. p. 302.), "equally formed to excel in proſe and in verſe, more various, more original, and more elegant, than that of almoſt any other modern who writes in Latin, reflects with regard to this particular, the greateſt luſtre on his country." Of his different works many editions have ſeparately appeared; and a complete collection of them was publiſhed at Edinburgh, in 1714, in 2 vols. fol. and reprinted at Leyden in 1725, in 2 vols. 4to. Biog. Brit.

To the memory of this truly great man, neglected by his ungrateful country, which never afforded his grave the common tribute of a monumental ſtone, an obeliſk 100 feet high was erected by ſubſcription, in 1788, at Killearn, the place of his nativity, deſigned by Mr. J. Craig, nephew to the celebrated poet Thomſon.

BUCHAN-NESS, in *Geography*, the eaſternmoſt headland in Scotland. N. lat. 57° 30′. W. long. 1° 46′.

BUCHARIA, Bukharia, or Bokhara, an extenſive region of Aſia, lying between the river Jihon to the weſt, and the deſert of Cobi and other deſerts bordering on China, to the eaſt. It is ſuppoſed to derive its name from the city of Bokhara (which ſee) near the Jihon or ancient Oxus, which was the emporium of the commerce carried on by the Europeans in that quarter; and afterwards extended to the adjoining country, beyond it. Bokhar, or Bukhar, as Abulghazi Khan informs us, was a Mungl or Mogul word, importing a "learned man;" and as all thoſe who formerly wiſhed to be inſtructed in the languages and ſciences went, for that purpoſe, into Bukharia, the name was originally given to it by the Moguls, who conquered this country in the time of Genghis Khan. This extenſive region is divided into two parts, called *Great* and *Little Bucharia*, correſponding to the ſouthern diſtricts of the two ancient Scythias, which were ſeparated by the ridge of mountains denominated the "Imaus," and called by Sherefeddin the "Karangoutac" mountains.

Bucharia, *Great*, is that extenſive and important region of Independent Tartary, which comprehends part of the Touran or Turan of the ancient Perſians, and was chiefly known to the Greeks and Romans by the names of Sogdiana and Bactriana; the former being the Arab "Maweralnahar," or country beyond the river, i.e. the Jihon or Oxus, and correſponding to "Tranſoxana," the name anciently given to thoſe provinces which lay beyond this river; while Bactriana correſponds with Balk, and accordingly belongs to Iran, and not to Touran. Major Rennell cautions us againſt confounding, as ſome geographers have done, the modern Bucharia with the ancient Bactria. Bucharia, he ſays, is ſituated beyond the Oxus or Jihon, and is the country anciently named "Sogdiana," from "Sogd," the valley, a beautiful valley in which Samarcand (anciently Maracanda) is ſituated: whereas Bactria or Bactriana lay on the ſouth of the Oxus, and comprehended the preſent provinces of Balk and Gaur, and probably part of Khoraſan.

Great Bucharia extends more than 700 Britiſh miles in length from north to ſouth, by a medial breadth, if Fergana be included, of about 350; thus rather exceeding Great Britain in ſize, but much inferior to the country named Little Bucharia. On the north it is bounded by the mountains of Argun and Kara Tau; on the weſt by a deſert, the river Amu, and other deſerts, which divide it from Kharaſm and Khoraſan; and on the ſouth, if it be extended ſo as to include Balk, by the mountains of Gaur or Paropamiſus, and the Hindooh Koh; and on the eaſt by the chain of Belur. According to theſe boundaries, it is ſituated between about 35° and 42° N. lat. and between about 60° and 70° E. long. The original population of this country was Scythian; and the natives are ſtill denominated by the ſame Tartaric name of "Tadjiks," which the barbarous victors aſſigned to the Perſians. The Perſian monarchs were often engaged in wars with thoſe of Touran, or the Scythians on this ſide and beyond the Imaus, whoſe queen, Thomyris, is ſaid to have ſlain Cyrus in battle. After the progreſs of Alexander as far as Cogend on the river Sihon (or ancient Jaxartes), this country became better known, being probably the furtheſt limit of his courſe towards the north. When Genghis Khan died, A. D. 1227, he bequeathed Great Bucharia to his ſecond ſon Jagatay Khan, and it took the name of Jaghatay or Zagatay in honour of its new proprietor: which name it retained as long as the Khans deſcended from him reigned in theſe parts. But in 1498, ſultan Babur, a deſcendant of Timur, was expelled with his Monguls from Great Bucharia; and the Tartarian victors, called Uſbeks, eſtabliſhed a powerful monarchy in the country. Succeſſive Khans held the ſceptre from 1498 to 1658; and ſoon after this period the extenſive and fertile country of Bucharia ſeems to have been divided into ſeveral governments, under numerous Khans. All the great towns, both of Great and Little Bucharia, from the borders of Kharaſm as far as China, are inhabited by the Bukhars, or deſcendants of the ancient poſſeſſors, called by the Tartars, Tadjiks. Theſe are well made and very fair, allowance being made for the climate; they have generally large, black, and lively eyes; their countenances are open, their noſes aquiline, their hair black, and their beards buſhy. The women are generally tall, and well-ſhaped, with fine complexions, and very beautiful features. Both men and women wear calico ſhifts and drawers; over which the men wear a veſt of quilted ſilk, or calico, reaching to the mid-leg, and tied about the middle with a ſilk-crape girdle or ſaſh. In winter they are covered with a long cloth gown, faced and lined with fur. The head is covered with a round cloth bonnet, having a large fur border; and ſome wear turbans. Their boots reſemble the Perſian buſkins, and they poſſeſs a ſingular art of preparing horſe-hides for this uſe. The women wear long gowns that are full and looſe; their hair hangs in treſſes, and is adorned with pearls and other jewels. Their bonnets are ſmall, flat, and coloured. The Bucharians are a commercial people; and their caravans travel through the whole continent of Aſia, and traffic with Ruſſia, Thibet, China, India, and Perſia. Ruſſia contains ſeveral colonies of Bucharians, who are ſettled in many large towns of the ſouthern provinces, and maintain a conſtant communication with the merchants of their own country. Their principal marts are Tomſk, Kiacta, and Orenburg, which is the moſt conſiderable. Their caravans are expoſed to pillage from the Kirghuſe Tartars, through whoſe country they are obliged to paſs. Their exports are gold and ſilver, chiefly in Perſian coins and Indian rupees, gold-duſt found in the ſand of the rivers of Bucharia, precious ſtones, particularly rubies, lapis lazuli, ſpun and raw cotton, cotton ſtuffs in great abundance, both Indian and Bucharian, half-ſilks, unprepared nitre, native ſal-ammoniac, lamb-ſkins, raw ſilk in ſmall quantities, rhubarb, and large droves of ſheep and horſes, which are bought for ſale by the Kirghuſe Tartars. Pallas ſays, that above 60,000 ſheep and 10,000 horſes are yearly ſold at Orenburg. The Bucharians receive in return cloth, leather, beads, and trinkets, hardware, indigo, cochineal, &c. The Bucharians never bear arms; but on this account they are deſpiſed by the Tartars, as a cowardly and weak people. The Jagatay Tartars, who are the deſcendants of the Tartars who firſt poſſeſſed this region, are now compriſed under the general name of Uſbeks. The Uſbeks are commonly reputed the moſt civilized of all the Mohammedan Tartars, although like the reſt they are great robbers. Both men and women are clothed like the Perſians, as low as their boots; and the chiefs wear plumes of white heron feathers on their turbans. Their moſt delicious diſhes conſiſt of "pillaw," which is rice ſtewed in broth, and horſe-fleſh. Their common drink is kumiſs and arak, both made of mare's milk. Their language is a mixture of the Turkiſh, Perſian, and Mongolian tongues. Their arms conſiſt of the ſabre, dart, lance, and bow, of a larger ſize than ordinary, which they manage with much ſtrength and dexterity. For ſome time paſt they have uſed muſkets. When they go to war, many of their cavalry wear coats of mail, and a little buckler for defence. They value themſelves on being the moſt robuſt and valiant of all the Tartars; and even their women, who ſurpaſs the other Tartars in beauty, are not averſe from warfare, but will ſometimes attend their huſbands to the field. Although many of theſe inhabitants of Bucharia reſide in huts in the ſummer, yet in winter they inhabit the towns and villages. The religion of the Uſbeks and Bucharians is the Mahometan of the Sonni ſect; and the government of the Khans is deſpotic. The amount of their population is not preciſely aſcertained; but it is probable that upon an emergency an army of 100,000 men might be muſtered. We have no accurate ſtatement of the revenue of theſe fertile provinces; but it is not improbable that the revenue of Great Bucharia is at leaſt equal to that of Khoraſan, which, by Mr. Hanway's account, is equal to half a million ſterling annually. The climate in general appears to be excellent; the heat even of the ſouthern provinces being tempered by the high mountains capped with perpetual ſnow; and the proximity of the Siberian deſerts and the lofty Alps, renders the ſun much more temperate than that of other countries, ſuch as Spain, Greece, and Aſiatic Turkey in the ſame parallel. The face of the country preſents a great variety; but though there are numerous rivers, hills, and mountains, there ſeems to be a deficiency of wood. Near the rivers the ſoil is productive, ſo that the graſs ſometimes exceeds a man's height; and in ſome parts conſiderable induſtry is ſhewn in the cultivation of rice and other grain. In the hands of any other perſons beſides thoſe of the Tartars, this country might rival any European region. There is not a more flouriſhing or a more delightful country, ſays a famous Arabian geographer, than this, eſpecially the diſtrict of Bokhara. From the ancient caſtle of this city a ſcene of luxuriant and beautiful verdure preſents itſelf on every ſide of the country; ſo that the ſpectator would imagine the green of the earth and the azure of the heavens were united; and as there are green fields in every quarter, ſo there are villas interſperſed among the green fields. In all Khoraſan and Maweralnahar there are not any people more long lived than thoſe of Bokhara. The rivers and lakes of this country are numerous and conſiderable in ſize; and its mountains are lofty and extenſive. For the principal rivers, ſee AMU, SOGD, MORGAB, KISILE-DARIA, DEHASH, &c.; and for the principal range of mountains, ſee BELUR.

The cities in Great Bucharia generally give name to the provinces, or receive their appellation from them. In the north is the province of Fergana, the capital of which is Andegan. The other chief provinces are the weſtern part of Shaſh, and a diſtrict called by M. d'Anville Oſruſhna, from a town of the ſame name, and by Ebn Haukal, Setruſhtah. The moſt fertile province is Sogd; and next to this are Vaſh, Kotlan, and Kilan. The Alpine region that ſeparates this country from Little Bucharia, is Belur; and the moſt ſouthern provinces are Tokareſtan and Gaur. The chief city of Great Bucharia is Samarcand, and vying with this for dignity is Bokhara. See each of theſe articles reſpectively. See alſo BALK, ZOUF, BADAKSHAN, TERMED, &c.

BUCHARIA, *Little*, is ſo called, not becauſe it is more limited in extent than Great Bucharia, being in reality much larger; but becauſe it is inferior to it as to the number and importance of its cities, the quality of its ſoil, and the amount of its population. This country correſponds to the "Scythia extra Imaum" of the ancients, and to the "Serica" of Ptolemy. The Scythians beyond the Imaus are deſcribed by this geographer as reſtricted to a confined ſtrip of territory on the eaſtern ſide of the Imaus, and divided by an imaginary line from the Seres, who were undoubtedly the people of Little Bucharia. But as ancient knowledge here terminated, it is probable that the Scythians beyond the Imaus not only held the eaſtern ridges of theſe mountains, as a barbarous race continues to do without moleſting the induſtry of the diſtant plains, but that they were diffuſed along the ridge of

Alak, and the wide region called Geté, extending as far as the mountains of Bogdo, till they were expelled or ſubdued by more numerous or powerful nations from the eaſt. But as it is now allowed by all geographers that the range called Belur Tag repreſents the Imaus, and that this range runs from north to ſouth, forming the eaſtern boundary of Great Bucharia, it will be evident from Ptolemy's deſcription and maps that "Serica" can be no other country but Little Bucharia, always poſſeſſed by an intelligent and induſtrious race of men; not only the ridge of Imaus, but the remarkable courſe of two conſiderable rivers towards the north-eaſt, while all his other Aſiatic ſtreams have very different directions, ſufficiently indicate Little Bucharia, in which the rivers correſpond with Ptolemy's delineation; the Oechardes being probably the Orankaſh of modern maps, or perhaps the river of Yarcand; while his Bautiſus may be the river of Koten, or that of Karia. The knowledge of Ptolemy does not appear to have extended eaſtward further than 80° from Greenwich; and, therefore, few compariſons can be inſtituted between the modern names and ſituations and thoſe of Ptolemy. M. D'Anville ſuppoſes that the mountains of Annabi are thoſe of Altai; whereas they are thoſe of Alak, called by ſome Muſart, on the north of Little Bucharia. The mountains on the ſouth correſpond with thoſe of Mus Tag, or the mountains of Ice on the north of Thibet. To the ſouth alſo lies the ſandy deſert of Cobi, of unaſcertained extent, but ſuppoſed by ſome to reach weſtward as far as the northern ſnowy mountains of Thibet already mentioned. The ſouthern part of Little Bucharia contains ſeveral large provinces, as Koten and Karia or Kereja, ſo called from their capital cities; and the intelligent Strahlenberg has denominated Koten a kingdom, and has inſerted ſeveral names of rivers and towns. On the eaſt Little Bucharia is bounded by deſerts and provinces of Mongolia, and particularly by the province of Hami or Chamiel belonging to China. The weſtern and northern parts of this country are more accurately known by means of various accounts, and by the maps of D'Anville and Iſlenieff. To the north is the Alak mountain, and beyond it Soongaria, and in the weſt the Belur Tag, which ſeparates it from Great Bucharia. In Rennell's map, however, the weſtern boundary is that ridge of the ancient Imaus, denominated by Sherefeddin the Karangoutac mountains, and between this and the Belur ridge is Baltiſtan or Little Thibet. The chief rivers of Little Bucharia are the Bulanghir, probably the Polonkir of the Jeſuitic maps, flowing into the lake Lock-nor, the Chaidu and Yarcand Darija iſſuing from it, and ſupplying ſeveral branches, as the Koten, Orankaſh, &c., and the Kareja proceeding from a lake in the deſert of Sultus. The principal towns are Caſhgar, Yarcand, Akſu, Chialiſh, Turfan, Koten, and Karia, which ſee reſpectively. Independently of the regions to the north, the extent of Little Bucharia, from the confines of Hami to the mountains of Belur, is more than 1000 Britiſh miles; and the breadth, from the mountains of Thibet to thoſe of Alak, more than 500. It is of courſe comprehended between 36° and 43° N. lat., and about 72° and 87° E. long. As the land is much elevated and abounding in mountains, the climate is cold; and, in contradiction to the uſual courſe of nature, the ſouthern part bordering on the Alps of Thibet is colder than the northern, which is protected by the lower ridge of Alak. Among its hills are ſeveral fertile plains; but the population is not extenſive. Between the cities in this country there are no villages; and in travelling a whole day from one to another, there is not a houſe of entertainment to be found. From Du Halde's atlas it may be deduced that the Contaiſh, or Great Khan, could raiſe 20,000 men from this province, taking one man from 10 families; and hence the number of families would be 200,000, which would yield a population of one million. The inhabitants, who are for the moſt part deſcendants of Bucharians, with a great mixture of Tartars or Turcomans, and a few Kalmuks, are generally ſwarthy and black-haired, although ſome of them are very fair, handſome, and well made. They are ſaid to be polite and benevolent; and their language is probably that called the Zagathian or Turkiſh, which has ſupplanted their native tongue. The dreſs of the men reſembles that of the Tartars, reaching no lower than the calf of the leg, and bound with girdles like thoſe of the Poles. The garments of the females are of the ſame kind, commonly quilted with cotton; and they wear long ear-rings, twiſt their hair in treſſes, lengthened by decorated ribbands and taſſels of ſilk and ſilver, ſo as to hang down to their heels. Their necklaces are ornamented with pearls, ſmall pieces of coin, and ſeveral gilded or ſilvered baubles. Some of them tinge their nails with henna. Perſons of both ſexes wear trowſers, with light boots of Ruſſia leather, and occaſionally high-heeled ſlippers. The head-dreſs reſembles that of the Turks. Married women are diſtinguiſhed from thoſe that are ſingle by a long piece of linen worn under their bonnets, which is folded round the neck and tied in a knot behind, ſo that one end of it hangs down to the waiſt. Both ſexes carry about them prayers written by their prieſts, and kept in a ſmall purſe, under the form of relics. Their houſes are commonly of ſtone, well built, and decorated with ſome articles of china. When they go to ſleep, they throw off every garment; they are cleanly in the preparation and uſe of their food, which is uſually minced-meat, and their general drink is tea, which they prepare with milk, ſalt, and butter. At their meals they uſe neither chairs nor tables, knives nor forks, but ſit croſſed-legged on the ground, and when the meat is ſerved up ready cut, they take it up with their fingers or wooden ladles. Their wives are purchaſed, ſo that a perſon who has many daughters is accounted rich. The ceremonies of marriage differ little from thoſe of other Mahometans, and polygamy, though regarded among the Bucharians as a kind of ſin, is generally practiſed. Their children are named on the third day after birth, and circumciſed on the 7th, 8th, or 9th day. In ſickneſs the mullah or prieſt has great influence; and when a perſon dies, he lays a koran on his breaſt, and recites ſome prayers, after which the body is interred in ſome pleaſant wood, and incloſed with a hedge or palliſade. Their money conſiſts of copper kopeiks, weighing nearly one-third of an ounce; and in paſſing ſilver or gold, they weigh it, like the Chineſe. The prevailing religion is the Mahometan; and the Kalmuks or Eluths allow unlimited toleration. The government, before the Chineſe took poſſeſſion of the country, was firſt of all adminiſtered by a Khan, and afterwards by the Contaiſh of the Kalmuks, who appointed inferior magiſtrates. The ſoil of Bucharia is in many parts of it fertile and productive, and yields various kinds of fruits, and particularly wine. It is alſo rich in mines of gold and ſilver, but neither the natives nor Kalmuks are ſufficiently ſkilful to work them; and out of the torrents, which flow from the mountains when the ſnow melts, they collect gold-duſt, which they carry to India, China, and Siberia. Precious ſtones and diamonds are alſo found in this country, and the ſouthern mountains near Thibet furniſh muſk. As the dreſs is chiefly cotton, the plant probably abounds in this country; though from their proximity to China the Seres might eaſily have tranſmitted ſilk to ancient Europe. Pallas, ſpeaking of Bucharia, but probably meaning Great Bucharia, mentions raw ſilk as a product of the country, very fine lamb-ſkins, the hair of camels, and an excellent rhubarb, which latter article grows in the ſouth-eaſt part of Little Bucharia.

In more ancient times Little Bucharia, as we have already obſerved, was the country of the Seres; but it ſeems to have been but little known before the time of Genghis Khan, upon whoſe death this country, as well as Great Bucharia, became the portion of his ſon Jagatay, or Zagathai, and was occaſionally called by his name, but more generally known by the appellation of Caſhgar. It was then conſidered as a part of Moguliſtan, or Mongolia; and the northern provinces belonged to the country of Geté. It had a ſucceſſion of Khans, ſeparate from Great Bucharia, till about the beginning of the 14th century. From that time it ſeems to have been governed by a ſucceſſion of the deſcendants of Timur, till the year 1683, when it was ſubdued by the Eluths, or Kalmuks. To them it remained ſubject, till at a recent period it was conquered by the Chineſe. In 1759, Kiang Long, or Chin Lung, completely vanquiſhed theſe people; and thus annexed an extenſive territory to his dominions.

BUCHAU, a free imperial town of Germany, in the circle of Swabia, ſeated on the Feder lake; 24 miles S.W. of Ulm. N. lat. 48° 6′. E. long. 9° 37′.

Buchau, a ſmall country of Germany, in the circle of the Upper Rhine, comprehending the eſtate of the abbey of Fulda, of which Fulda is the capital.

BUCHEN, a ſmall town of Germany, in the circle of the Lower Rhine, and electorate of Mentz; 22 miles E. of Heidelberg.

BUCHENBERG, a town of Germany, in the circle of Swabia, and territory of the abbey of Kempten; 5 miles W.S.W. of Kempten.

BUCHERI, a town of Italy, in the valley of Noto; 3 miles N.E. of Monte-Roſſo.

BUCHHOLZ, a ſmall town of Germany, in the circle of Upper Saxony, and Middle Mark of Brandenburgh; 23 miles S. S. E. of Berlin.—Alſo, a ſmall mine-town of Germany, in the circle of Erzgebirg, having a ſeat and voice at the Land-diets. At this place conſiderable quantities of lace are made.

BUCHIGLIERA, a town of Naples, in the province of Calabria Citra; 11 miles W N. W. of Umbriatico.

BUCHLOE, or Buchlake, a town of Germany, in the circle of Swabia, and biſhopric of Augſburg; 18 miles S. S. W. of Augſburg.

BUCHNER, Andrew Elias, in *Biography*, phyſician and aulic counſellor to the king of Pruſſia, and profeſſor of medicine, firſt at Erfurt, and afterwards at Hall in Saxony, publiſhed, in 1755, in 4to.; "Hiſtoria Academiæ Naturæ Curioſorum," of which he was ſeveral years preſident; "Fundamenta Materiæ Medicæ, Simplicium Hiſtoriam, Vires et Præparata exhibentia," Hall, 1754, 8vo.; "Syllabus Materiæ Medicæ ſelectioris cum deſignatione ponderis," &c. Hall, 1755, 8vo. He was alſo author of ſeveral ingenious diſſertations publiſhed in the Miſcell. Nat. Curioſ. and of a number of diſſertations, or inaugural theſes, on botanical ſubjects. Among theſe, Haller particularly notices the "Diſputatio de genuinis viribus Tabaci, ex ejus principiis conſtitutivis demonſtratis; et de genuinis Opii effectibus in Corpore Humano;" each of them containing ſeveral ingenious experiments made on animals, with the view of aſcertaining the properties of thoſe drugs; alſo a method of inſtructing deaf perſons. He died in the year 1769. Hall. Bib. Bot.

Buchner, J. Gottfried, of whom we have no biographical memoirs, has left ſome curious and uſeful works in botany, of which the following are the titles: "Diſſertationes Epiſtolicæ de Memorabilibus Voigtlandiæ: 1. De arbore una nocte virente, et florem ſimulque fructus, tempore hiemali proferente; 2. De arboribus et plantis inſolito tempore florentibus; 3. De arbore quovis æſtate binis vicibus, et flores et fructus protrudente; 4. De arboribus diverſi generis fructus in uno ſtipite proferentibus; 5. De frumentis ſpicis proliferis, aliiſque plantis monſtroſis; 6. De aloe Americana majori, aliiſque plantis exoticis Voigt. florentibus;" 4to. 1743. The remainder of his writings, conſiſting of diſſertations on ſimilar ſubjects, is publiſhed in the ſecond, fourth, fifth, and ſeventh volumes of the Miſcel. Nat. Curioſ. Haller. Bib. Botan.

BUCHNERA, in *Botany* (in honour of A. E. Buchner, a German naturaliſt). Linn. gen. 772. Reich. 833. Schreb. 1035. Willd. 1174. Gært. 323. Juſſ. 100. Claſs and order, *Didynamia Angioſpermia*. Nat. Ord. *Perſonatæ*, Linn.; *Pediculares*, Juſſ.

Gen. Char. *Calyx* of one leaf, five-toothed, permanent. *Cor.* monopetalous; tube rather long, bored; border flat, ſhort, five-cleft, nearly regular. *Stam.* four, very ſhort; anthers oblong, obtuſe. *Piſt.* germ ovate-oblong; ſtyle thread-ſhaped, the length of the tube; ſtigma obtuſe. *Peric.* capſule acuminate, two-celled, many-ſeeded, opening at the top in two diviſions; partition contrary. *Seeds* angular; receptacle faſtened to the middle of the partition.

Eſſ. Char. *Cal.* five-toothed. *Cor.* funnel-ſhaped; border five-cleft, nearly equal. *Stam.* four unequal. *Capſ.* two-celled; partition ſimple, contrary to the valves. *Seeds* numerous, ſmall. Gært.

Sp. 1. B. *Americana*, Linn. Syſt. Nat. "Leaves toothed, lanceolate, three-nerved." *Stem* ſcarcely branched. *Spike* with flowers remote from each other. *Stamens*, two in the throat of the corolla; two in the middle of the tube. The plant grows black with drying. Native of Virginia and Canada. 2. B. *elongata*, Willd. "Leaves nearly linear-lanceolate, entire; calyx a little hairy, longer than the capſule." Swartz. A native of Jamaica, Vera Cruz, and Guiana. 3. B. *cernua*, Linn. Mant. "Leaves cuneate, five-toothed, ſmooth; flowers ſpiked; ſtem ſhrubby." *Stem* half a foot high, regularly branched, a little jointed by the ſcars of the leaves, purpliſh. *Leaves* oppoſite, often ternate, ſeſſile, with two acute ſerratures on each ſide the tip, even. *Spikes* terminal, ſolitary, oblong. *Flowers* ſeſſile, erect, with a linear acute bracte ſhorter than the calyx, and two ſhorter lateral briſtles. *Calyx* tubular, oblong, ſemiquinquefid, equal; ſegments connected by a membrane. *Corol.* white; tube filiform, twice as long as the calyx, recurved; border flat, five-cleft; ſegments ſubovate. *Anth.* below the jaw; ſtigma incloſed, reflex, rather thick. On mountains at the Cape of Good Hope. 4. B. *cuneifolia*, Linn. Supp. "Leaves wedge-ſhaped, ſmooth, ſeven-toothed at the tip." Found by Thunberg at the Cape of Good Hope. 5. B. *cordifolia*, Linn. Supp. "Stem four-cornered; leaves oppoſite, heart-ſhaped, three-nerved, ſerrated; racemes terminal, approaching to ſpikes." Referred to this genus by the younger Linnæus, though very different in habit, and more reſembling a vervain, on the authority of Koenig, who found it about Tanjour. 6. B. *grandiflora*, Linn. Supp. "Scabrous; leaves oppoſite, ſeſſile, oblong, entire; peduncles axillary, one-flowered, two-leaved; calyx funnel-ſhaped." A very beautiful plant. *Stem* erect, ſmooth, very ſimple. *Leaves* five-nerved. *Peduncles* toward the ſummit of the ſtem, ſolitary, ſhorter than the leaves, with two oppoſite linear-ſubulate bractes about the middle. *Calyx* five-toothed, long, but ſhorter by half than the tube of the corolla, which gradually enlarges into a large, flat border, with five rounded lobes. *Obſ.* The younger Linnæus, not having ſeen the fruit, was not certain of the genus, eſpecially as it has ſome reſemblance to the *gerardias*, and like them, becomes entirely black in drying. Native of South America. Mutis. 7. B. *æthiopica*, Linn. Mant. "Leaves three-toothed; flowers peduncled; ſtem rather ſhrubby." *Stem* half a foot high, much branched. *Leaves* oppoſite, ſeſſile, lanceolate, about the ſize of thoſe of *polygonum aviculare*, generally with a tooth on each ſide near the tip. *Flowers* toward the top of the branches, lateral, oppoſite; peduncles one-flowered, longer than the leaves, erect. *Calyx* monophyllous, five-toothed, a little hiſpid. *Corolla* yellow, twice as long as the tube of the calyx. *Capſule* bilocular, ovate-oblong, ſcarcely longer than the calyx. 8. B. *viſcoſa*, Hort. Kew. "Leaves linear-lanceolate, diſtantly toothed, a little glutinous; flowers peduncled; ſtem ſhrubby." Native of the Cape of Good Hope. Found by Maſſon, and introduced into England 1774. 9. B. *capenſis*, Linn. Mant. "Leaves toothed, linear, alternate; calyx pubeſcent." *Stem* annual, about five inches high, ſtraight, with four or five ſimple branches near the top. *Leaves* generally alternate. *Flowers* ſeſſile, in ſhort, terminal ſpikes. *Calyx* a little inflated. *Corol.* yellow; tube ſlender, ſlightly villous; two of the ſtamens projecting a little beyond the throat of the corolla. *Stem*, branches, leaves, and calyxes clothed with a ſomewhat viſcous down. La Marck, from a dried ſpecimen. Allied to *rhinanthus capenſis*, Linn. Native of the Cape. 10. B. *aſiatica*, Linn. Spec. Plant. "Leaves very entire, linear; calyx ſcabrous." *Stem* obtuſely four-cornered; branches alternate, with the habit of an *euphraſia*. *Leaves* linear; upper ones alternate, lower oppoſite. Tube of the *corolla* filiform, incloſing the ſtamens; border two-cleft, one ſegment nearly upright and trifid, the other open and heart-ſhaped. Vahl. (Symb. 3. p. 81.) deſcribes the leaves as covered on the upper ſurface, and at the rib and margin of the lower, with numerous white ſcales, producing very ſmall, ſolitary hairs; and the calyxes as ſolitary, nearly ſeſſile, ſtriated; the ſtriæ toothed with numerous minute, rigid hairs. La Marck has, in his Herbarium, a plant reſembling *euphraſia Indiæ Orientalis* of Plukenet, and which he preſumes is *buchnera aſiatica*. It is rough to the touch; and the calyxes are ſtriated in a very remarkable manner. Native of Ceylon and China. 11. B. *euphraſiodes*, Willd. "Leaves linear, very entire, ſcabrous with hairs; ſegments of the corolla linear, obtuſe." Vahl. Reſembles *euphraſia longiflora*. *Stem* acutely four-cornered, branched; branches oppoſite, higher than the ſtem, preſſed cloſe to it, and almoſt imbricated. *Leaves* ſhort, oppoſite and remote below, alternate and crowded above. *Calyx* ſeſſile, axillary, about the length of the leaves. Tube of the *corolla* villous; ſegments linear. Vahl. Native of the Eaſt Indies. 12. B. *geſnerioides*, Willd. "Leaves oblong, ciliated, preſſed cloſe to the ſtem, ſquamiform; tube of the corolla curved." *Stem* half a foot high, branched at the baſe, at firſt ſight appearing naked. *Leaves* very minute. *Flowers* ſeſſile, axillary, longer than the leaf, furniſhed on each ſide with a linear, obtuſe, bracte, ciliated at the margin. *Calyx* five-cleft; ſegments lanceolate, ciliated. *Corolla* nearly of *euphraſia longiflora*; tube ſmooth; ſegments of the border oblong. *Capſule* oblong, obtuſe, bilocular. Willdenow, from a dried ſpecimen. Native of the Eaſt Indies. 13. B. *pinnatifida*, Linn. Suppl. "Leaves pinnatifid, ſmooth." Found at the Cape of Good Hope by Thunberg. *Obſ.* La Marck is inclined to think that *buchnera manulea* and *erinus*, are properly only one genus. They differ from *hebenſtreitia* and *ſelago* in having a two-celled, polyſpermous capſule.

BUCHNERA *humifuſa* (Forſkal). See BROWALLIA, where, on Forſkal's authority, it is placed by La Marck, and ſaid to have a one-celled capſule; but Vahl, on the other hand, aſcribes to it a bilocular capſule with a partition oppoſite to the valves, very like that of *buchnera aſiatica*, from which plant, he ſays, it differs only in its proſtrate ſtem and obovate leaves. It does not appear, that either La Marck or Willdenow had ſeen a ſpecimen.

BUCHODZ, PETER JOSEPH, in *Biography*, a phyſician, who roſe by his merit to the firſt rank, in eminence, in his profeſſion, was born at Mentz about the year 1736. After receiving a liberal claſſical education, in which he is ſaid to have made a more than ordinary proficiency, he was ſent to Pont-a-Mouſſon, and was admitted to the degree of doctor in medicine at the univerſity there, in 1759. Being ſoon diſtinguiſhed for ſuperior abilities and induſtry, he was in ſucceſſion made phyſician to Staniſlaus king of Poland, to the duke of Lorraine, &c. and teacher or demonſtrator in botany to the Royal College of Phyſicians at Nancy. He was alſo aſſociated as foreign member to moſt of the medical and philoſophical academies on the continent, to which he from time to time communicated his obſervations. His works are numerous, all on botanical ſubjects. The titles of a few of them follow: "Diſcours ſur la Botanique," Paris, 1760. "Traité hiſtorique des Plantes qui croiſſent dans la Lorraine, et les trois evêchés," Nancy, 8vo. from 1763 to 1769, 9 vols. The work was abruptly broken off incomplete. He was aſſiſted, in forming it, by the papers and the Hortus Siccus of his father-in-law, Marquet, to which he made large additions. The firſt volume contains diſcourſes on botany, with explications of the ſyſtems of Tournefort and of Linnæus; the ſecond, purging; the third, pectoral; the fourth, ſternutatory; the fifth, emmenagogue; the ſixth, plants exciting perſpiration. In each volume are engravings of the moſt remarkable plants in each claſs, with occaſional experiments to aſcertain their properties. "Medicine rurale et pratique," Paris, 1768, 12mo, containing uſeful information, and enabling the poor to ſelect proper remedies for their complaints. "Secrets de la Nature et de l'Art pour les Alimens, la Medicine, la Veterinaire, avec un Traité ſur les Plantes qui peuvent ſervir a la Teinture, &c." Paris, 1769, 12mo. 4 vols. "Dictionaire raiſonné des Plantes et des Arbuſtes de France," Paris, 1770, 4 tom. For the titles of the remainder of his works, ſee Haller. Bib. Botan.

BUCHOLTZ, in *Geography*, a town of Germany, in the circle of Weſtphalia, and county of Verden: 18 miles E. N. E. of Verden.

BUCHOREST. See BUCHAREST.

BUCHORN, an imperial town of Germany, in the circle of Swabia, ſeated on the north ſide of the lake of Conſtance. The inhabitants are Lutherans. Here are warehouſes for goods conſigned to it for the paſſage of the lake. It is diſtant 13 miles E. from Conſtance. N. lat. 47° 41′. E. long. 9° 20′.

BUCHOV, a town of Hungary; 2 miles W. of Boleſko.

BUCHOW. See BUCK.

BUCHWALD, BALTHAZAR, JOHN, in *Biography*, a German phyſician, publiſhed, in 1720, "Specimen Medico-practicum Botanicum," 4to Hafniæ, containing the deſcriptions and accounts of the medical properties of many of the common plants, with dried ſpecimens of the plants affixed to the leaves. "De Diabetis Curatione, præprimis per Rhabarbarum, 4to 1737," alſo "Viſci Analyſis, ejuſque in diverſis Morbis Uſus, 4to. 1753." Haller. Bib. Botan.

BUCHY, in *Geography*, a town of France, in the department of the Lower Seine, and chief place of a canton, in the diſtrict of Rouen, 4½ leagues N. E. of it. The town contains 673, and the canton 9060 inhabitants; the territory comprehends 162½ kiliometres and 30 communes.

BUCIDA, in *Botany* (originally called by Brown, *Buceras*, ox-horned, but changed by Linnæus into Bucida, without aſſigning a reaſon). Linn. Sp. Pl. Reich. 602. Schreb. 758. Willd. 881. Juſſieu 75. Claſs and order, *Decandria Monogynia*. Nat. Ord. *Holoraceæ*, Linn. *Elæagni*, Juſſ.

Gen. Char. *Cal.* Perianth one-leafed, pitcher-ſhaped, obſoletely five-toothed, ſuperior, permanent. *Cor.* none. *Stam.* filaments ten, capillary, longer than the calyx and inſerted into its baſe. *Anther* upright, heart-ſhaped. *Piſt.* germ inferior, ovate; ſtyle the length of the ſtamens: ſtigma obtuſe. *Peric.* berry dry, ovate, one-celled, crowned with the calyx. *Seed* one, ovate.

Eſſent. Char. *Cal.* five toothed, ſuperior. *Cor.* berry one-ſeeded.

Spec. 1. B. *Buceras*. Olive bark tree, Linn. Brown Jam. t. 23. f. 1. Sloane Jam. t. 189. f. 3. La Marck. pl. 356. "Spikes elongate; leaves wedge-ſhaped, ſmooth." Vahl. *Stem*, a tree, thirty feet high, about one in diameter. *Branches* divaricate, or flexuoſe, roundiſh, ſmooth, and even. *Leaves* only at the divarications and ſummits of the branches, crowded together, petioled, obovate or ridge-ſhaped, obtuſe, very entire, veined, ſmooth, near two inches long. *Spikes*, or rather ſpike-like racemes numerous, ſimple, peduncled, axillary near the ends of the branches, about the length of the leaves. *Flowers* ſmall, yellowiſh, alternate, ſeſſile, hoary without, tomentoſe within. The ſtyle or upper part of the germ, eſpecially at the extremity of the raceme, is ſometimes extended to the length of an inch or more, and curved ſomewhat in the form of a bull's horn; whence Linnæus and other authors have obſerved its affinity to *rhizophora*. Deſcribed by La Marck from a dried ſpecimen. A native of the Weſt-Indies and South America. In Jamaica it is called black olive: in Antigua, French oak; and in the French iſlands, Grignon. Its bark is uſed for tanning leather: and its wood is excellent for cheſts of drawers and other kinds of cabinet-makers' work, as it is ſeldom attacked by worms. 2. B. *capitata*. Willd. "Flowers with capitate ſpikes; leaves ridge-ſhaped, ciliated." Vahl.

BUCINO, in *Geography*, a town of Naples; 6 miles W.N.W. of Cangiano.

BUCIOCHE, in *Commerce*, a ſort of woollen cloth manufactured at Provence in France, which the French ſhips carry to Alexandria and Cairo.

BUCK, in *Zoology*, a male horned beaſt of venery or chace, whoſe female is denominated a *doe*. A buck the firſt year is called a *fawn*, the ſecond a *pricket*, the third a *ſorel*, the fourth a *ſore*, the fifth a *buck of the firſt head*, and the ſixth a *great buck*. See DEER and HUNTING.

BUCK is alſo applied to the males of the hare and rabbit kind. Hares commonly go to *buck* in January, February, and March, and ſometimes all the warm months; ſometimes they ſeek the buck ſeven or eight miles from the place where they ſit. The *buck* rabbit is ſaid to kill all the young he can come at; on which account the doe is careful to hide her offſpring in ſome remote corner; out of his way. The doe coney goes to buck as ſoon as ſhe has kindled. She cannot ſuckle her young till ſhe has been with the buck. When he has bucked, he uſually falls backward, and lies as in a trance half dead, at which time he is eaſily taken.

BUCK, or BUSK, in *Geography*, a town of Poland, in the palatinate of Beltz, 24 miles S.S.E. of Beltz.

BUCK, or BUCHOW, a town of Germany, in the circle of Upper Saxony, and old mark of Brandenburg, 22 miles N.W. of it.

BUCK-*bean*, in *Botany*, a corruption of bogbean, one of the Engliſh names of *menyanthes trifoliata*, derived from the place of its growth, and from a ſlight reſemblance of its leaflets to thoſe of the common cultivated bean.

BUCK *iſland*, in *Geography*, one of the ſmaller Virgin iſles in the Weſt Indies, ſituate on the eaſt of St. Thomas, in St. James's paſſage. N. lat. 18° 15′. W. long. 63° 30′.

BUCK *maſt*, in *Botany*, is uſed by ſome for the maſt or fruit of the beech tree.

BUCK-*ſkins*. See SKINS.

BUCK-*ſtall*, in our *Ancient Law Books*, a toil wherein to take deer. By an ancient ſtatute, no perſon is allowed to keep a *buck-ſtall*, who has not a park of his own. Stat. 19. Hen. VII.

BUCKEBURG, in *Geography*, a town of Germany, in the circle of Weſtphalia, and county of Schauenburg, ſurrounded with walls, and having a caſtle, where the tribunal of juſtice is held. It contains one church, two colleges, and a houſe of orphans; 3 miles eaſt of Minden.

BUCKEGBERG, a bailliage of the canton of Soleure in Swiſſerland, on the eaſt ſide of the Aar; its average annual value is 166l.; the inhabitants of this bailliage profeſs the reformed religion, and in eccleſiaſtical affairs they are under the protection of Bern. They take the oath of fidelity every third year to the government of Soleure: but if aggrieved in their religious eſtabliſhment, have recourſe to Bern. The ſenate of Bern nominates to the vacant benefices, but the prieſts are under the neceſſity of obtaining the confirmation of the chapter of Soleure. Bern alſo enjoys ſupreme juriſdiction in criminal affairs. If a criminal is arreſted for any capital offence, he is tried by the bailiff of Buckegberg and the jury of the bailliage; but if condemned to death, he is delivered for execution to Bern, provided that republic diſcharges the expence of the trial. Soleure enjoys all the other rights of ſovereignty. N. lat. 47° 9′. E. long. 7° 20′.

BUCKEN, a town of Germany, in the circle of Weſtphalia and county of Hoya; 2 miles S. of Hoya.

BUCKENHAM, or NEW BUCKENHAM, a ſmall town in the county of Norfolk, England, is ſeated on the river Warency. It obtains the appellation of New, to diſtinguiſh it from another place of the ſame name, which is more ancient, and is called Old Buckenham. Both theſe places have been of ſome note, but both have greatly declined. Henry I. created this a diſtinct pariſh, and William d'Albany built a handſome church here. At Buckenham was formerly a ſplendid caſtle, the ſite of which was ſubſequently occupied by a priory. The lords of the manor are butlers at the coronation of our kings. Here are two annual fairs, but the market has been diſcontinued. The pariſh contains 125 houſes and 664 inhabitants. Blomefield's Hiſtory of Norfolk.

BUCKET, in *Hydraulics*, a kind of veſſel or recipient chiefly of uſe for the raiſing or conveyance of water from wells, and other places. The word is formed from the French *bacquet*, a *pail* or *tub*. In an army, buckets are carried with the artillery, in the fire-workers ſtores. Town buckets, for extinguiſhing fires, are made of thick leather, ſtrongly ſoaked and boiled. One method of raiſing water, deſcribed by hydraulic writers, is by the means of a chain of buckets.

BUCKET, *ſea-gage*. See *Sea*-GAGE.

BUCKFIELD, in *Geography*, a poſt-town of America, in Cumberland county, and ſtate of Maine, 48 miles N. of Portland; containing 1002 inhabitants.

BUCKHAVEN, a village on the coaſt of Fifeſhire, in the pariſh of Wemyſs, in Scotland. This place is wholly inhabited by perſons engaged in the fiſheries, as this part of the coaſt is much frequented by haddocks. About 50 years back theſe fiſh were caught here in ſuch abundance, that they were ſold at the rates of ſixpence and ten-pence per hundred. The firſt inhabitants of this place are ſaid to have been ſome Dutch fiſhermen, whoſe veſſel was ſtranded here in the reign of Philip II. In the year 1791, the village contained 601 inhabitants. Sinclair's Statiſtical Account of Scotland.

BUCKIE, a conſiderable fiſhing village in the pariſh of Rathven, county of Bamff, Scotland. Here is a tolerable harbour, to which belong 6 ſloops, 14 boats, and 1 yawl. It is ſeated at the mouth of a river of the ſame name, and contained, in 1793, 703 inhabitants. The property of the place belongs about equally to the duke of Gordon and the honourable baron Gordon. Sinclair's Statiſtical Account of Scotland.

BUCKING, among *Miners*. See Ore.

Bucking, an operation performed on linen cloth, cotton, and yarn, to render them ſomewhat white, by working them with lye made of aſhes. Bucking of cloth is the firſt ſtep or degree of whitening it. See Bleaching.

To drive a buck of yarn, they firſt cover the bottom of the bucking-tub with fine aſhes of the aſh-tree, then ſpread the yarn thereon, then cover it again with aſhes, and thus *ſtratum ſuper ſtratum*, till the yarn is all in; when they cover the whole with a bucking-cloth, and lay on it more aſhes, and pour in warm water, till the tub be full, and let it ſtand all night. Next morning they let the lye run into another veſſel, and, as it waſtes, fill up the tub with warm water from a kettle, and, as this waſtes, fill it up with the lye that runs from the bucking tub, ſtill obſerving to make the lye hotter and hotter, till it boils. Thus are both the tub and kettle to be ſupplied for at leaſt four hours, which is called *driving a buck of yarn*.

BUCKINGHAM, in *Geography*, the county town of Buckinghamſhire, England, appears to be a place of conſiderable antiquity, and has been the ſcene of ſome particular hiſtorical events. According to biſhop Kennet, it was at or near this town that the Roman general, Aulus Plautius, ſurpriſed and routed the Britons, under the command of Caractacus and Togodumnus, the ſons of Cunobeline. In the early Saxon times, it became celebrated as the burial-place of the infant ſaint Rumbald, who was born at King's Sutton in Northamptonſhire, and is reported, by catholic fabuliſts, to have lived but three days, during which period he profeſſed himſelf a Chriſtian, and wrought many miracles. According to the Saxon Chronicle, Edward the Elder reſided here in the year 918, and built two forts to repel the incurſions of the Danes. The town was ravaged by the Daniſh ſoldiers in 941, and again in 1010, when, having plundered the adjacent country, they retreated hither to ſecure their ſpoils. At the time of the Norman conqueſt, Buckingham is ſtated to be the only borough in the county; yet it was then but an inconſiderable place. In the reign of Edward III. its importance was increaſed by that monarch making it a mart for wool; but the trade being removed to Calais, it again declined; and in the 27th of Henry VIII. Buckingham was in the liſt of decayed cities and towns which were relieved by act of parliament. The removal of the aſſizes to Ayleſbury ſtill leſſened the conſequence of Buckingham; and, in 1724, a dreadful fire completed its misfortunes, when, out of 387 houſes, 138 were conſumed, beſides outhouſes and manufactories. The damage was eſtimated at 40,000l. Since that period the trade has in a ſmall degree revived, part of the county buſineſs being reſtored, and the aſſizes fixed here by act of parliament in 1758, in which year a gaol was erected. The town-hall is a large brick building, ſurmounted by a gilt ſwan, the arms of the borough. But the moſt conſpicuous and principal ornament of the town is the church, which ſtands on the ſummit of an artificial mount, which was anciently occupied by a caſtle. This ſtately fabric was begun in 1777, and completed in 4 years, at the expence of about 7000l.; the greater part of which was contributed by the late earl Temple. The church is built of ſtone, and has a handſome ſquare tower attached to its weſt end, ornamented with pinnacles, embraſures, and a light tapering ſpire, which riſes to the height of 150 feet from the ground. The interior is conſtructed on the ſame plan as Portland chapel in London. A large gallery, ſupported by Doric columns, projects from three of its ſides. From the gallery riſe twelve more columns of the Ionic order, ſuſtaining a richly decorated ceiling. The corporation conſiſts of a bailiff and twelve burgeſſes, in whom is veſted the right of election for members of parliament. It does not appear that this town ſent members previous to 36 Hen. VIII. though three perſons were ſent, as early as 11 Edward III. to a council of trade held by that monarch at Weſtminſter. A free-ſchool was founded here, about 1540, by Iſabel Denton; the endowment of which has been increaſed by ſucceſſive donations; and a Sunday ſchool has been lately eſtabliſhed for the children of the poor. The extent of the town and pariſh is computed at 3800 acres. The houſes, which are chiefly brick, and irregularly built, are eſtimated at 545, and the inhabitants at 2605, who are divided into ſeveral religious ſects; the preſbyterians, quakers, and methodiſts have each a place of worſhip. Lace making is carried on to a conſiderable extent; for as it requires but little ingenuity, and cheap materials, there is ſcarcely a female who is not provided with a lace-pillow and its neceſſary implements. The profits of the buſineſs depend on the facility of execution; and the daily earnings are therefore different. Some women can gain from eighteen pence to two ſhillings a day; but others not more than one ſhilling. Their receipts have lately experienced a conſiderable drawback, from the eſtabliſhment of a manufactory at Nottingham, where lace is made by *machinery*, and being quicker executed, is retailed at a lower price; but its quality is not ſo good as that made by hand. Buckingham is ſituated 57 miles N. W. from London. It has a market on Saturdays, and ſeven annual fairs.

About two miles north of Buckingham are the magnificent manſion and celebrated gardens of Stowe, the chief ornament of the county, and principal ſeat of George Grenville Nugent Temple, marquis of Buckingham. Domeſday book contains the earlieſt account of this manor, and ſtates, that in the reign of Edward the Confeſſor its value was 60s. and that it was held by Robert d'Oyly and Roger Ivory of the biſhop of Baieux. The preſent manſion is a large handſome ſtructure, ſeated on a high ſpot of ground, which ſlopes, in a ſoutherly direction, to a fine lake of water. The interior of this houſe is furniſhed in the moſt elegant ſtyle, and contains a large collection of pictures, and a very ſpacious library filled with choice books, numerous manuſcripts, &c. The pleaſure grounds, which conſiſt of about 400 acres, are ornamented with numerous plantations, temples, &c. and are diverſified with various inequalities of ground. Beauties of England and Wales, vol. i. "A Deſcription of the Houſe and Gardens at Stowe," 8vo. 1797.

Buckingham, a county of America, in the ſtate of Virginia, bounded N. by James' river, S.E. by Cumberland, S.W. by Campbell, and S. by Appamattox river; 65 miles long and 30 broad; containing 7053 free inhabitants, and 6336 ſlaves. Its court-houſe is 223 miles from Waſhington.

Buckingham *Houſe*, the moſt weſterly of the ſettlements belonging to the Hudſon bay company in New South Wales, lies north-weſterly from Hudſon-houſe on the northern ſide of Saſkaſhawen river, near its ſource. N. lat. 54°. W. long. 110° 20′.

BUCKINGHAMSHIRE, one of the inland counties of England, appears to have been moſtly peopled at the time of the Roman invaſion, by a claſs of the Britons, which the hiſtorians of that period named Cattieuchlani. When the Romans had ſubjugated the iſland, this part of it was included in that diviſion named Flavia Cæsariensis. After their departure, it became the theatre of many battles and revolutions, and, at length, in the Saxon dynaſty, conſtituted a part of Mercia, to whoſe monarchs it became ſubject during the continuance of that kingdom. Buckinghamſhire is bounded on the north by Northamptonſhire; on the eaſt by the counties of Bedford, Hertford, and Middleſex; on the ſouth by Berkſhire: and on the weſt by Oxfordſhire. Its extent has been variouſly eſtimated; but the moſt correct computation has been given in the General View of its Agriculture; wherein it is ſaid to be 45 miles in length, 18 in breadth, and 138 in circumference. It contains about 518,400 acres of land, and is divided into 8 hundreds, including 16 market-towns, 185 pariſhes, about 21,000 houſes, and about 107,440 inhabitants. Its limits are moſtly artificial, the river Coln bounding only a ſmall portion on the eaſt ſide, and the Thames ſeparating it from Berkſhire.

The face of this county is much varied. The ſouthern parts are occupied by the Chiltern hills and their appendages. Theſe eminences are chiefly compoſed of chalk intermixed with flints, and though very inferior to the northern diſtrict, with reſpect to richneſs of ſoil, have been rendered extremely productive from the great attention given to the cultivation and improvement of the land. The prolific *Vale of Ayleſbury* ſpreads through the middle of the county, and furniſhes a rich paſturage to vaſt numbers of cattle, its amazing fertility being chiefly employed in the ſupport of the dairy and grazing ſyſtems. The more northern parts are diverſified with gentle ſand-hills, which enter from Bedfordſhire. In the vicinity of the Chiltern hills, where the ſoil is light, and inimical to production without much labour, the moſt ſedulous care is beſtowed, and every mode of improvement adopted. In the vale of Ayleſbury, and the more northern diviſions of the county, the aſtoniſhing produce of the meadows rendering exertion leſs neceſſary, the farmer turns a deaf ear to every argument of an inſtructive tendency.

The ſoil of this county is principally compoſed of rich loam, ſtrong clay, chalk, and loam upon gravel. Its chief application in the Chiltern diſtrict, is to the growth of wheat, barley, oats, beans, and ſaintfoin; the northern diviſion, as we have already intimated, is chiefly applied to paſture and meadow, with a very ſmall proportion of arable. The great quantities of butter annually made on the dairy farms, are moſtly purchaſed by the London dealers, who contract for it half-yearly. The average weight produced weekly from each cow, is eight pounds in ſummer, and ſix pounds in winter. In ſome of the dairies, a very uſeful machine, called a mill-churn, has lately been introduced, by which the fatiguing operation of churning is greatly facilitated, the mill being worked by a horſe. In other dairies a barrel-churn is uſed with two handles, turned by two men, who make from ſix to ſix ſcore pounds of butter at one churning. The ſkim and butter-milk are made uſe of to fatten ſwine. In the neighbourhood of Medmenham, Great and Little Hampton, &c. many calves are ſuckled; and at Ayleſbury, and its vicinity, great attention is given to the rearing of ducks, to ſupply the markets of the metropolis. For ploughing, and other laborious operations of agriculture, horſes are preferred to oxen. The latter have frequently been tried, but the flintineſs of ſome parts of the ſoil, and the very heavy quality of others, have cauſed the farmer to decide in favour of the horſe. In the ſouthern parts, the ſwing and high wheel ploughs are chiefly uſed, and are drawn by four horſes ranged two abreaſt. In the northern diviſion the looſe handle ſwing and low wheel ploughs, worked by five or ſix horſes in a line, are principally uſed. The progreſs of agricultural improvement is conſiderably checked on many eſtates, by the reſtrictive conditions on which they are leaſed; the tenants being confined to two or three crops and a fallow; with a prohibition to the growth of clover and green food. The manures are principally marl, peat-aſh, yard and rabbit dung. On ſome of the ſtrong and cold ſoils, hair and hoofs are ſtrewn with much advantage. Soot and aſhes are equally beneficial to the wheat and young clover. Farms are generally let from 60l. to 250l. a year; ſome amount to 500l.; and two or three to 1000l. In the Agricultural View of the County, the common fields were eſtimated at 91 900 acres, but a large proportion has ſince been incloſed. The waſte lands are but inconſiderable, their extent not being more than 6000 acres, the greateſt part contained in the heaths of Iver, Fulmer, Stoke, and Wycombe. The ſouthern diviſion of the county produces large quantities of fine beech: near a ſixth part of the land between the road to Oxford and the Thames is ſuppoſed to be covered with that wood. On Wavendon heath (now the property of the duke of Bedford) ſeveral flouriſhing plantations of Scotch firs have been made ſince its incloſure, about the year 1778. In the coppices on Whaddon chace are numbers of fine oak and aſh trees. The chief manufactures are thoſe of paper and lace. The latter affords employment for nearly all the lower claſs of females in the county.

The principal rivers are the Ouſe and the Thame. The Ouſe enters Buckinghamſhire on the weſtern ſide, paſſes Water Stratford, and flows in a devious courſe to Buckingham; thence winding to the north through a rich tract of meadow land, purſues its way to Stony Stratford, Newport-Pagnell, and Olney; ſoon afterwards, turning ſuddenly to the eaſt, it leaves the county near Brayfield. The Thame riſes near the borders of the county in Hertfordſhire, and flowing through the vale of Ayleſbury from eaſt to weſt, receives the waters of ſeveral ſmaller ſtreams, and enters Oxfordſhire near the town of Thame. The interchange of traffic has been much facilitated of late years by the Grand Junction canal, which enters this county near Woolverton, and running eaſtward, goes within a mile of Newport-Pagnell; thence, flowing to the ſouth, it paſſes Fenny Stratford, Stoke Hammond, Linſlade, and Ivinghoe, into Hertfordſhire, near Bulbourne. From a branch of the canal at Old Stratford, a cut has been made to Buckingham, and another from Bulbourne to Wendover.

Buckinghamſhire is in the dioceſe of Lincoln, with the exception of ſix pariſhes belonging to the ſee of Canterbury, and four to the dioceſe of London. It ſends fourteen members to parliament; viz. two for the county, two for Buckingham, two for Ayleſbury, two for High Wycombe, two for Amerſham, two for Wendover, and two for Great Marlow. It pays twelve parts of the land tax, provides the militia with 560 men, and is in the Norfolk circuit. General View of the Agriculture of the County of Buckingham.

Buckinghamshire, a county of America, in the diſtrict of Three Rivers, in Lower Canada, on the ſouth ſide of the St. Lawrence river.

BUCKLAND, a townſhip of America, in Hampſhire county, and ſtate of Maſſachuſetts, containing 1041 inhabitants; 106 miles W. from Boſton.—Alſo a poſt-town in Prince William county, Virginia; 42 miles S.W. from Waſhington.

BUCKLE, in *Matters of Trade*, a little metalline machine, whereby to retain and keep faſt certain parts of the habit, as well as of the harneſs of horſes, &c.

The word is formed from the French *boucle*, and that, according to Caſſeneuve, from the barbarous Latin *pluſcula*, which ſignified the ſame: According to Menage, from *bucula*, the *anſa*, or handle of a buckler. The buckle is a part of modern dreſs correſponding to the *fibula*, among the ancients. Buckles are of divers ſorts, as ſhoe and garter buckles; ſome round, others ſquare, or oval, or cut, each of which have their reſpective artificers by whom they are made. The like may be ſaid of the great variety of buckles belonging to the pack and hackney ſaddles.

Buckle, *girth*, among *Sadlers*, is a four-ſquare hood, with a tongue, which is made ſteady, by going through a hole of leather, and faſtened with narrow thongs.

BUCKLER, a piece of defenſive armour, uſed by the ancients to ſcreen their bodies from the blows of their enemies.

The word comes from the barbarous Latin *bucularium;* of *bucula*, the umbo or middle point of this weapon, which had uſually a head or mouth, repreſented prominent thereon.

The buckler is the ſame with what we otherwiſe call ſhield or target; and by the one or the other we indifferently render what among the ancients were denominated *clypeus*, *ſcutum*, and *parma:* though the three latter were different from each other.

The *ſcutum* was an oblong ſhield with an iron boſs or *umbo* projecting from the middle; 4 feet long and 2½ broad, made of wood, joined together with ſmall plates of iron, and wholly covered with a bull's hide. The *clypeus* was a round ſhield of a ſmaller ſize. The *parma* was a round buckler made of wood, and covered with leather.

The buckler of Achilles is deſcribed in Homer, that of Æneas in Virgil, that of Hercules in Heſiod; Ajax's buckler was lined with ſeven bulls' hides.

The buckler among the Greeks, called Ασπις, was ſometimes compoſed of wicker-work, and ſometimes of the wood of fig, willow, beech, or poplar; but moſt commonly of hides, which were doubled into folds, and fortified with pieces of metal. In the middle of the buckler was a boſs, upon which was fixed another prominence. A thong of leather, and ſometimes a rod of metal, reached acroſs the buckler and ſerved for hanging it on the ſhoulders. Sometimes it was held by little rings; and it had afterwards a handle, compoſed chiefly of ſmall iron bars croſſing each other, in the form of the letter X. When the wars were ended, and the bucklers ſuſpended in the temples of the gods, they took off the handles, that they might become unfit for immediate uſe. Little bells were ſometimes hung upon bucklers to ſtrike terror into the enemy. They were often adorned with various figures of beaſts and birds, of the celeſtial bodies, and of the works of nature. The bucklers of the Argives ſeem to have been longer than the reſt, and to have covered the whole body. Their form was uſually round. Phil. Tranſ. N° 241, p. 206. See Shield. See alſo Armor, and Arms.

The ancients were particularly ſolicitous to preſerve their bucklers in fight; it being highly infamous, and even penal to return without them. It was on their bucklers that they carried off the bodies of their ſlain, eſpecially thoſe of diſtinction.

The Spaniards ſtill retain the ſword and buckler in their night-walks.

Bucklers on medals, are either uſed to ſignify public vows, rendered to the gods for the ſafety of a prince; or that he is eſteemed the defender and protector of his people.—Theſe were particularly called *votive bucklers*, and were hung at altars, &c.

Buckler, in *Heraldry*. See Shield.

Buckler *of a caſk*, denotes a moveable head, whereby to compreſs the contents of it.

In this ſenſe we ſay, a buckler of pilchards.

Buckler *Muſtard*, in *Botany*. See Biscutella and Clypeola *Jonthlaſpi*.

BUCKOVINA, in *Geography*, a part of the ancient province of Dacia, became ſubject to Auſtria in 1777, and was annexed to Galitz, vulgarly denominated Galicia. It contains no town of any conſequence; but Czernowitz is reckoned the principal. Hoeck eſtimates the number of inhabitants at 130,000; they ſpeak Poliſh and German; and their religion is the Roman Catholic. The annual revenue is reckoned at 400,000 florins.

BUCKRAH, a town of Hindooſtan, in the Soubah of Oude; 18 miles N.W. of Goorackpour.—Alſo, a town of Hindooſtan, in the country of Bahar; 25 miles N. of Patna.

BUCKRAM, a thick ſort of linen or hempen cloth, ſtiffened with gum or glue, uſed in the linings of cloths, to ſuſtain and make them keep their form.

Of buckram are alſo made wrappers for covering cloth and other commodities, in order to preſerve them from being ſoiled, and their colours from fading. Buckram is ſold wholeſale by the dozen of ſmall pieces, each about four ells long, and of breadth correſponding to the piece from which they are cut.

BUCKS, in *Geography*, a county of Pennſylvania, in America, lying N.N.E. from Philadelphia, ſeparated from Jerſey by the river Delaware on the ſouth-eaſt and north-eaſt, and having Northampton county on the north-weſt. It contains 27 496 inhabitants. Bucks is a well cultivated county, containing 411,900 acres of land, and comprehends 28 townſhips, the chief of which is Newtown. It abounds with lime-ſtone, and in ſome places are found iron and lead ore. At the north end of the county is a remarkable hill called Haycock, ſituate in a townſhip of the ſame name. This hill is 15 miles in circumference, with a gradual aſcent, and commands from its ſummit a very delightful proſpect. The waters of Tohickon creek waſh it on all ſides except the weſt.

Bucks *Harbour*, a bay of the Atlantic, on the ſouth coaſt of the diſtrict of Maine, in America. N. lat. 44° 42′ W. long. 63° 34′.

BUCKSHORN, in *Botany*. See Plantago *Coronopus*.

BUCKSTOWN, in *Geography*, a town of America, in Hancock county, and diſtrict of Maine, on the eaſt ſide of Penobſcot river, containing 624 inhabitants, 260 miles N.E. from Boſton.

BUCKTHORN, in *Botany*. See Rhamnus.

Buckthorn, *ſea*. See Hippophæ, *rhamnoides*.

BUCKTOWN, in *Geography*, a town of America, in Dorcheſter county, Maryland, ſituate between Blackwater and Tranſquacking creeks, 12 miles from their mouths at Fiſhing bay, and 8½ miles S.E. from Cambridge.—Alſo, a townſhip in Cumberland county, and diſtrict of Maine, near Portland, containing 453 inhabitants.

BUCK-WHEAT, in *Botany*. See POLYGONUM *fagopyrum.*

BUCK-WHEAT, in *Agriculture*, is a ſort of grain much cultivated in the field in ſome diſtricts. It is earneſtly recommended to farmers by Mr. Young, in his excellent Calendar of Huſbandry, as being yet only known by name in nineteen pariſhes out of twenty throughout the kingdom. It poſſeſſes as many excellencies to good farmers, he ſuppoſes, as any other ſorts of grain or pulſe that are employed in cultivation; having the property of ameliorating the land, as well as that of preparing it for wheat or any other crop. It is equally valuable with barley, and where known ſells at nearly the ſame price; and, beſides its utility in fattening ſome ſorts of animals, is the beſt of all crops for ſowing graſs ſeeds with, as it affords them the ſame ſhelter as barley or oats, without depriving them of their neceſſary ſupport. The time of ſowing it has likewiſe an advantage in affording a full opportunity for getting the ſoil into a proper condition. And there is ſcarcely one-fourth of the expence of a barley crop incurred in the ſeed.

It is ſaid by ſome to thrive well on any ſoil, even thoſe of the pooreſt kinds; and that in moſt of the arable diſtricts it is ſown on the inferior ſorts of land, as when cultivated on the richer kinds, it is found to run too much to ſtraw.

Mr. Banniſter, however, obſerves, in his Synopſis of Huſbandry, that it delights in land which has been reduced into good order by tillage, and has likewiſe partaken liberally of the dung-cart, for which reaſon it often ſucceeds a crop of turnips; and there is this advantage attending the cultivation of it, that as, from the tender nature of the plant, it requires to be ſown late, it may follow a crop of turnips that has been fed off at a time when it would be highly imprudent to ſow the ground with barley.

Mr. Young conſiders this as a very profitable crop on all ſorts of land, except the very heavy kinds, that require late ſowing, and where barley cannot be put in at a ſufficiently early period; as he ſuſpects there are not many ſoils on which a buck-wheat crop ſown in May will not be more valuable than one of barley ſown at the ſame time, though it is the common practice in many diſtricts to put that crop in at ſo late a ſeaſon.

The lands intended for this grain ſhould undergo a proper tillage in April, ſo as to render them fine and perfectly clean from weeds, eſpecially where graſs-ſeeds are to be ſown with it.

The proper time for ſowing buck-wheat, Mr. Banniſter obſerves, is in May, “ when there is no longer any danger to be apprehended from the froſts; for ſo tender is this vegetable at its firſt appearance, as to be unable at an earlier period to withſtand the vernal cold; and the ſlighteſt froſt, in their infant ſtate, would infallibly cut off the young ſhoots; and, as from this circumſtance it muſt be ſown at a ſeaſon when dry weather may be expected, the crop does on that account not unfrequently miſcarry.” And Mr. Young aſſerts that it often ſucceeds well, when put into the ground in June, and even the beginning of July, which is conſidered as an advantage in a crop that prepares the land for wheat.

But the author of the Synopſis of Huſbandry remarks, that “ being ſown late, the harveſt likewiſe falls out very backward, by which the greater part of the crop is often devoured by the hogs in the field; as this grain ſeldom ripens till towards Michaelmas, when the other corn ſtubbles have been long open. Add to this, the injury likely to accrue from rain, which may be expected to fall in great abundance at this ſeaſon, ſo that the haulm, being extremely ſucculent, does in the moſt kindly harveſt require a great deal of field room: but in a wet autumn it is a very difficult matter to get the crop home in good order; and in ſuch years he has known the ſwarths of buck-wheat lying abroad throughout the greateſt part of November.” Hence there is evidently great hazard in this grain, not only from its being expoſed to the ravages of the hogs, when cultivated in open fields, as before mentioned, but from the ſhedding of the ſeed; circumſtances which will cauſe the returns to be very trifling when threſhed. To this may be added the inferior value of the ſtraw, chaff, &c. when compared with an oat or barley crop.

The proportion of ſeed which is neceſſary, muſt vary in ſome meaſure according to the nature of the land; but, in general, a buſhel to the acre is fully ſufficient. It ſhould be well harrowed in with a light ſhort-tined harrow.

This grain generally, as has been ſeen, bears a price equal to that of barley, and is uſed for fattening of ſwine, poultry, and other domeſtic animals. “ In its external form,” Mr. Banniſter ſays, “ it bears not the ſmalleſt reſemblance to wheat; and the method of culture, and the progreſs of its growth, are totally different from that grain: but, when ground, it produces a white flour, whence it may probably have gained the appellation. In Hertfordſhire and Buckinghamſhire, it is a common mode of huſbandry to ſow turnip ſeed with buck wheat; but the Kentiſh farmers uſually ſow their woold or weld on their buck-wheat lands; and as the ſeeds of either covet a light bed, and both of them require to be ſown late, the woold generally ſucceeds well when raiſed among buck-wheat; and ſometimes buck-wheat, turnips, and woold are crowded together in one ſeaſon.” This is, however, a practice by no means to be generally adopted.

The proper quantity of this grain, according to this writer, “ to ſow on an acre, is half a buſhel; and ſuch is the uncertainty of the return, that five quarters have been produced from an acre in ſome years, while in others not ſo much as five buſhels.”

“ The green haulm of buck-wheat has a peculiar inebriating effect on ſwine. He has ſeen hogs, which have fed heartily on it, come home in ſuch a ſtate of intoxication, as to be unable to walk without reeling.”

This ſort of grain is likewiſe, he ſays, ſometimes “ ſown on ſtiff lands, for the purpoſe of ploughing in the ſtalks as a manure. On fallows, where the land has a clayey bottom, this method may be purſued to advantage; but it is to be noted, that the ground ſhould be in pretty good heart, ſo as to throw out a large burthen of haulm, otherwiſe no benefit can accrue from this mode of huſbandry.” At the ſtirring of the fallow in May, in this mode of culture, the ſeed ſhould be ſown pretty thick; and when the ſtalks have arrived to their full growth, they ſhould be laid flat with the roller, and afterwards turned in with the plough; and when the ground has continued in this ſtate till towards Michaelmas, by which time the ſtalks of the buck-wheat will be rotted, the ſeed furrows for the ſucceeding crop ſhould be begun. “ This method of ploughing-in the green ſtalks of buck-wheat contributes, it is obſerved, much toward the melioration of ſtiff ſoils, and diſpoſes them to work more kindly than they would otherwiſe have done, by overcoming that adheſion, which is the greateſt evil that attends this ſpecies of land.”

The author of the “ New Farmer's Calendar,” who aſſures us that he ſpeaks from much actual experience, ſays, that “ the invariable reſult has ſhewn its inferiority to every other grain, but ſuperiority over other vegetable food, namely carrots, potatoes, and the like. In the ſtate of herbage, cattle, he knows, will eat it; but it is from Hobſon's choice, as a hundred trials have convinced him. Its fitneſs for ploughing into the land is undoubted, on account both of its bulk and ſucculence. The juice of it, however, is watry, and far enough from nutritious. Hogs, he has found from numerous trials, fatten neither ſo faſt with it, nor is the fleſh ſo firm as that which has been fatted upon corn. He has uſed it in large quantities ground, with hard-working horſes, both draught and ſaddle, but the difference of price by no means compenſated for its inferiority to oats and beans; and beſides, it did not always agree with them, as he ſometimes fancied it had a kind of ſtupefying effect. In nutriment, however, he confeſſes, that it is ſuperior to carrots for working-horſes. He tried it with a ſtock of ſeveral hundred head of poultry; and it was in the ſame degree inferior both in the fattening and laying ſtock. He does not hear that it is very highly prized even in the diſtillery." In fine, he concludes, "that buck-wheat is valuable upon land that will grow nothing elſe, and where it is produced with ſmall expence; and that when ready, its beſt application is to the market." The experience of other practical farmers, however, affords a more favourable opinion of the utility of this grain.

It has been ſaid, the ſame writer further obſerves, that this grain being black cannot be diſcoloured by wet; which is by no means a practical remark, ſince its diſcolour conſiſts in the loſs of its fine black; beſide which, the grain feels cold and damp, to the great injury of the ſample. Wet or dry, the only uſe for the haulm is under foot. To thoſe who expect to get money by buck-wheat, he recommends early ſowing, and even to allow it the manure neceſſary for a following wheat crop; he ſhould think, by ſuch management, five, perhaps ten quarters might be obtained from an acre of good land, which would remain in excellent order for wheat. This neceſſarily ſuppoſes land in no want of late ſpring-tillage. In this caſe, ſhould a ſuſpicion be entertained of the crop running too much to haulm, it might, he thinks, be advantageouſly rowed and hoed.

In the "Rural Economy of Norfolk," Mr. Marſhall remarks, that "buck wheat is propagated as grain, and as a manure; and that, as the main intention of its propagation, whether as a crop or as a melioration of the ſoil, is the ſame, namely, the cleanſing of foul land, it may be convenient to keep the two objects in nearly the ſame point of view. With reſpect to ſpecies there is only one; this grain having not yet, he believes, run into any varieties ſufficiently ſtriking to have diſtinguiſhing names appropriated to them. It is ſown almoſt indiſcriminately on all ſpecies of ſoils; he, however, thinks that light poor land has the preference; it is, ſays he, to this ſpecies of ſoil that buck ſeems moſt eſpecially adapted. It likewiſe ſucceeds every ſpecies of crop; the ſtate of the ſoil as to foulneſs and poverty being generally more attended to than either the nature of the ſoil or the crop it bore laſt. The ſoil-proceſs depends upon the ſtate of the land, and the intention jointly; if the ſoil be tolerably clean, and the buck be intended to be ploughed under as manure, it is ſown on one ploughing; but, in general, the ground is broken, as for barley or peas, to forward the fallow, and ſecure the crop.

The ſeed-proceſs is the ſame for both intentions; excepting that, for a crop, the ſeed is ſown firſt, namely, immediately after barley-ſeed; and that intended to be ploughed under is ſown as ſoon afterwards as the ground is in a ſtate fit to receive the ſeed. It is univerſally ſown above-furrow. The quantity of ſeed, ſix pecks to two buſhels an acre. The growth of buck is ſo rapid as to outſtrip and ſmother almoſt every ſpecies of weeds; an excellency peculiar to this crop. The method of ploughing buck under, and the after-management of buck-fallows, are nearly as for wheat. The harveſt-proceſs is like that of barley, as is that of its farmery and management; except that the ſtraw being fit for litter only, and the grain being wanted for the fattening of pigs in autumn and the beginning of winter, it is frequently threſhed out immediately after harveſt, before the live ſtock are taken into the farm-yard."

Mr. Moſely of Suffolk cultivated this crop after tares, finding it highly advantageous as a preparation for wheat, by preſerving the land after that crop had been removed, from the diſſipating effects of the ſun till the period of the wheat being ſown. This is a combination of crops by which much is effected in the opinion of Mr. Young; "a coat of manure is gained at no expence, the year carried through from Michaelmas to Michaelmas, and three crops put in on three ploughings, viz. tares, buck-wheat, and wheat." It is not, he ſays, eaſy to form a more complete ſyſtem.

It is recommended in the firſt volume of the Annals of Agriculture, in feeding horſes, to try the efficacy of buck-wheat mixed with bran, chaff, or grains, either in the whole, or broken in a mill; as a buſhel of it, which goes further than two buſhels of oats, even with beans, mixed with at leaſt four times as much bran, will be full feed for any horſe a week, and much leſs hay will do. It is alſo further remarked, that in fattening hogs eight buſhels of buck-wheat meal will go as far as twelve buſhels of barley-meal. In the feeding of poultry and pigeons it is likewiſe highly uſeful and advantageous, as they eat it with great avidity, and thrive well upon it.

BUCOLICA, is uſed by ſome for the art of managing, feeding, and breeding cattle.

BUCOLICS, in *Ancient Poetry*, *Paſtorals*; a kind of poems relating to ſhepherds and their flocks. The word is derived from βȣς, and κολον, *cibus*, *meat*; hence βȣκολεω, *to feed cattle*, and βȣκολος, *bubulcus*, *a herdſman*.

Bucolic poetry is the moſt ancient of all the kinds of poetry; and is ſuppoſed to have had it origin in Sicily, amidſt the mirth and diverſions of the ſhepherds; and to have been inſpired by love and idleneſs: by degrees, their rural gallantries were brought under rules, and became an art. The concerns of the flocks, the beauties of nature, and the pleaſures of a country life, were their principal ſubjects. Moſchus, Bion, and Theocritus were the moſt agreeable among the ancient bucolic poets.

Fontenelle obſerves, that Theocritus's ſtyle is ſometimes a little too bucolic. Some authors attribute the invention of bucolic poetry to a ſhepherd called *Daphnis*; and others to Bucolius, ſon of Laomedon: but this appears all fiction. Some aſcribe the invention of bucolic poetry to the herdſmen of Laconia, who not being able to hold the cuſtomary feaſt of virgins in honour of Diana Caryatis, by reaſon of the war with Xerxes, inſtituted βȣκολιασμοι, or bucolic exerciſes in lieu thereof.

Hence alſo the origin of a ſort of poetical champions, called βȣκολιαςαι, by the Latins *luctiones*, who went about the country, contending for the prizes frequently propoſed for the conquerors in this kind of combat; of which rank Daphnis was the moſt diſtinguiſhed. They not only rehearſed their verſes, but played on a kind of *fiſtula*, or pipe, called *ſyrinx*. Scal. Poet. lib. i. cap. 4. Pott. Arch. lib. ii. cap. 20. Hiſt Acad. Inſcr. tom. iii. p. 123, & 131, &c.

Bucolic poetry is by ſome called *Aſtrabic*, as being ſuppoſed to have firſt commenced among the ancient herdſmen in riding a ſort of waggons called *aſtrabes*. It is uſually divided into *monoproſopium*, or monologue, wherein only a ſingle perſon ſpeaks, and *amœbæum*, or dialogue, wherein are ſeveral interlocutors.

Bucolics, ſays Voſſius, bear ſome reſemblance to comedy, as they are both pictures and imitations of ordinary life; but with this difference, that comedy repreſents the manners of the inhabitants of cities; whereas bucolics exhibit rural occupations. Sometimes this kind of poetry has action, and ſometimes only narration, and it is ſometimes compoſed of both. The hexameter verſe is the moſt proper for bucolics in the Greek and Latin languages.

Theocritus's IDYLLIA, and Virgil's ECLOGUES, are the chief of the ancient bucolics now extant. The firſt modern Latin bucolics are thoſe of Petrarch, about 12 in number, written about the year 1350. Their number multiplied ſo ſoon, that a collection of 38 modern bucolic poets in Latin was printed at Baſil in 1546. Theſe writers judged this indirect and diſguiſed mode of dialogue, conſiſting of ſimple characters which ſpoke freely and plainly, the moſt ſafe and convenient vehicle for abuſing the corruptions of the church. The eclogues of Mantuan, which appeared about the year 1400, were the model of Alexander Barklay (ſee BARCLAY), and became ſo popular, that Mantuan acquired the eſtimation of a claſſic, and was taught in ſchools. But although Barklay copies Mantuan, the recent and ſeparate publication in England of Virgil's bucolics, by Wynkyn de Worde, might partly ſuggeſt the idea of this new kind of poetry. See Wharton's Hiſt. of Eng. Poetry, vol. ii. p. 256.

BUCORTA, in *Geography*, a river of Italy, which runs into the ſea near Pagliapoli, in Calabria Ultra.

BUCQUET, JOHN BAPTISTE MICHEL, in *Biography*, was born at Paris, February the 18th, 1746. After paſſing through the uſual ſchool education, in the courſe of which he had eminently diſtinguiſhed himſelf, he was ſent by his father to be inſtructed in juriſprudence; but his diſpoſition leading him to the ſtudy of natural philoſophy, he ſoon quitted the law, and applied himſelf with zeal to acquire a knowledge of anatomy, botany, chemiſtry, and mineralogy, attending the lectures of the moſt celebrated maſters, and with ſuch aſſiduity, that he was ſoon qualified to become a teacher. His firſt courſe was on mineralogy and chemiſtry conjointly. Theſe he treated in a familiar manner; and as he had made himſelf perfectly acquainted with the ſubjects of his lecture, and had a peculiar facility in communicating the knowledge he had acquired, he ſoon became a popular teacher. This procured him the intimacy of the celebrated Lavoiſier, with whom he went through a ſeries of experiments, to aſcertain the properties of heat; they alſo analyſed a variety of minerals, at that time but little known. To enable his pupils the more eaſily to profit by his lectures, he publiſhed an "Introduction to the Analyſis of the Vegetable Kingdom." He alſo ſent to the Royal Academy accounts of various chemical experiments, which were publiſhed with their memoirs. He had now acquired ſo much reputation, that on the death of M. Bourdelin, he was admitted a member of this academy. He had before, viz. in the year 1776, become a member of a ſociety, inſtituted at Paris, for the improvement of medicine. To this ſociety he ſent the account of a proceſs for making opium tranſparent; for making lapis cauſticus; and a memoir on the action of volatile alkali in the deliquium, cauſed by carbonic acid. By theſe various labours, purſued with ardour and intenſeneſs, he had now, though a young man, ſo impaired his health, as to render him incapable of performing his duties without having recourſe to powerful ſtimulants, which, while they gave a momentary vigour, ſtill farther ſapped his conſtitution. But as he was married, and had ſeveral children, for whom he had made but ſlender proviſion, he determined to perſevere. He has been known, his biographer ſays, to take two pints of æther and an hundred grains of opium in a day. In this way, ſomething ſimilar to that practiſed by John Brown of Edinburgh, he paſſed the latter months of his life. His laſt memoir, read to the academy was on inflammable air, and the means of rendering the hydrogen gas of marſhes as pure as that obtained during the ſolution of metals. He died on the 24th of January, 1780, eſcaping, by this early and premature diſſolution, the keen and bitter pang he muſt have felt at ſeeing his friend Lavoiſier hurried to the guillotine, an event which took place, to the regret of all lovers of ſcience, a few years after. Gen. Biog.

BUCRETIUS, DANIEL, a phyſician of eminence of Bruſſels, was initiated into the knowledge of anatomy and medicine under Spigelius, who, a little before his death, entruſted him with his papers, containing his ſyſtem of anatomy, with directions to publiſh them. This office Bucretius performed with diligence, ſupplying ſuch parts as were not completed, partly from his own obſervations and labour, and partly from the plates of Julius Caperius. Having completed this work, which was publiſhed in royal folio, at Padua, in 1626, he went to Paris, and attended for ſome months the diſſections of Riolan. Riolan complaining to him, that Spigelius had introduced into his work many obſervations, taken from his books, without making any acknowledgment from whence he had received them, Bucretius confeſſed he had done it, to do honour to his maſter. Sometime after he retired into a monaſtery, where he died of a dyſentery, about the year 1630. Douglas. Bibliog. Anat.

BUCTON, in *Anatomy*, a word uſed by Severinus, and ſome others, as a name for that part of the *pudendum muliebre* commonly called the HYMEN.

BUCY LE LONG, in *Geography*, a town of France, in the department of the Aiſne, and diſtrict of Soiſſons, 1 league N.E. from it.

BUCZA, a town of Lithuania, in the palatinate of Brzeſc, 90 miles E. of Brzeſc.

BUD, in *Botany*, in its ſtrict and moſt uſual acceptation, as an Engliſh word, denotes the protuberances which appear in the axils of the leaves of trees and ſhrubs, and ſometimes when there is an exceſs of vegetative power, on the trunks themſelves, unaccompanied by a leaf; and which contain the rudiments either of ſeparate leaves and flowers, or of both together, on an elongated receptacle, which gradually ſhoots out into a young branch. But, as a ſcientific term, it is convenient to include in it all the means employed by nature for the renewal of plants, without the intervention of fertilized ſeeds. A bud, taken in this extenſive ſenſe, is ſeated either on the aſcending caudex, or on the deſcending caudex, or on a tuberous radicle. On the aſcending caudex, it is either a gem, or a cauline bulb: on the deſcending caudex, it is either a root bulb or a turio: on the tuberous radicle, it is uſually called an eye. See thoſe words.

BUD, in *Vegetable Anatomy*. The tranſpiration of the leaves, during their expoſure to the light and heat, determines the courſe of the juices of the vegetable powerfully towards their points of attachment. The tubes, which convey the ſap, elaborate it; the cambium is gradually formed, and depoſited around the baſe of the leaves: it there gives birth to new tubes, which obeying the impulſe communicated to them, elongate towards the bark, and penetrate it. As the ſpring is the ſeaſon moſt favourable to the production of new parts, it is then that we firſt perceive what is called the *eye* of the *bud*, within the axilla of the leaves, or that angle formed between their baſe and the branch. In the courſe of the ſummer, the eye enlarges, and becomes a bud; it continues to increaſe during the autumn, and in the winter falls into a ſtate of torpidity; in the enſuing ſpring, however, it revives, and expands into a *ſhoot*, or ſucculent branch, which acquires ſolidity in the ſummer, and becomes cloathed with leaves or flowers.

The period required for the evolution of the buds is ſubject to vary: it is ſometimes retarded for five years; at other times accidental cauſes accelerate this proceſs. Thus, if the leaves, which accompany the buds, happen to periſh, their developement is ſo much more rapid, that theſe buds produce branches ſuſtaining leaves and flowers in autumn, which, in the ordinary courſe of vegetation, would not appear before the enſuing ſpring. Theſe untimely productions, however, are deſtroyed by the firſt froſt.

The buds of the ſame tree are not all developed in the ſame time, ſome being more expoſed than others to the action of air and light. In general, thoſe ſituated at the extremity of the branches are the firſt to unfold themſelves.

The poſition and figure of the buds are peculiar in each genus, and often even ſerve to characterize the ſpecies of plants. A knowledge of theſe diſtinctions is found very uſeful by thoſe who rear trees in nurſeries.

Bonnet arranged buds into five orders, according to their poſition upon the branch. In the firſt they occur alternately as in the *filberd tree*. In the ſecond, they ariſe oppoſite to each other as on the *aſh*. The third mode of arrangement is, when the buds ſurround the branches in a ring: the example of this which Mr. Bonnet quotes, is the *pomegranate;* but all the young branches of this tree have the buds placed oppoſite. The fourth poſition of the buds is, where they form, with reſpect to each other, quincunxes, and, when taken together, compoſe a ſpiral figure, which ſurrounds the branches in the manner of a cork-ſcrew. This takes place in many *fruit-trees*, but more eſpecially in the *plum-tree*. In the fifth order are thoſe trees which have the leaves ſurrounding the branches in a double ſpire, as they appear in the *pine*. The true buds of the pines do not, however, grow in the axillæ of the leaves, but on the extremity of the branches.

In the trees with oppoſite buds, the extremities of the branches are uſually furniſhed with three buds, the one in the middle being much the largeſt; and when the buds are placed alternately, the branch is commonly terminated by a ſingle bud.

The direction of the buds is different in different ſpecies; ſometimes they ſtand out ſo much from the branch, that they form with it almoſt a right angle, as may be ſeen in the *lilac:* in other inſtances, as the *cornel-tree*, they are cloſely applied in all their length to the ſide of the branch. In the *Euonymus Europæus*, the buds at the extremity of the branches are laid cloſe, as thoſe of the cornel-tree; whilſt thoſe on the other parts of the branch are directed outwards.

There are numerous other peculiarities in the form and appearance of the buds, which, although uſeful for the gardener to know, it would be tedious to enumerate in this place.

No annual plant can, with propriety, be conſidered as poſſeſſing buds; theſe parts being intended to ſurvive the winter, and contain the rudiments of the branches and flowers which are to be developed on the return of the ſeaſon of vegetation. The true bud ought not, therefore, to be confounded with thoſe ſmall cones found in the axillæ of herbaceous plants, and which are converted into branches in a few days. The lilaceous plants, and other monocotyledons with bulbous roots, do not produce buds in the axilla of their leaves: the bulbs of theſe vegetables perform all the functions of buds, and have, therefore, very properly been ranked as ſuch, and called by ſome writer *ſubterraneous buds*. Although we acknowledge the ſimilitude of theſe two parts to each other in the fulleſt extent, we prefer giving the deſcription of bulbs under their proper name. See Bulb.

Beſides the varieties of buds which ſerve to diſtinguiſh different genera, and ſometimes the ſpecies of plants, there are other peculiarities which characterize the nature and offices of different buds upon the ſame tree: ſome buds being intended to develope the leaves and branches; others to contain only the parts of fructification; and others again give origin to both leaves and flowers. Thoſe of the firſt kind are called the *leaf-buds*, or *buds with wood;* the ſecond, the *flower* or *fruit-buds;* and the laſt are termed the *mixt buds*. The cultivators of fruit trees are careful to diſcriminate the different kinds of buds, as a guide in the various operations of grafting, pruning, &c. The leaf-buds, compared with the others, are ſlender, long, and pointed; the fruit-buds are thick, ſhort, and round; and thoſe of a mixt nature, have an intermediate form, being neither ſo pointed as the one, nor ſo round as the other.

In a great number of trees, the flower buds are ſituated upon the extremity of the little ramifications, called fruit-branches. See Branches. *Fig.* 9. of *Plate* II. in *Vegetable Anatomy*, repreſents a fruit-bud of the *pear-tree*, ſubſtained by one of theſe little branches; *a* the branch; *b* the bud; and on the neighbouring branch upon which this one grows, is ſeen a wood-bud, indicated by *c*.

In the *peach-tree*, and many others of the ſame family, the wood and fruit-buds ariſe together from the ſame branch: this is ſhewn by *fig.* 10. *of Plate* II. in *Vegetable Anatomy: a* is a ſhort portion of a branch of the *peach-tree*, on which are placed three buds; *b*, *b*, the two external buds contain the flowers, &c. the intermediate one is the wood-bud.

When the male and female flowers are ſituated upon different parts of the ſame plant, or upon ſeparate individuals, it is proper to diſtinguiſh the flower-buds into two kinds; as in many ſpecies, the buds, which furniſh the catkins, are very unlike thoſe which produce the fruits: thus, in the *walnut-tree*, the fruits owe their origin to the buds placed along the length of the branches, whilſt the catkins proceed from other buds ſo very ſmall that they are hardly perceptible, and which are ſituated at the ſide of thoſe which furniſh the fruits.

The buds of almoſt every vegetable which is congenial to a northern climate, are cloathed with a number of ſcales, and a cotton-like ſubſtance. The ſcales are laid upon each other in an imbricated manner, or like the tiles of a houſe. Thoſe ſituated moſt externally are ſtrong, hard, and dry, and generally of a brown colour, but the ſcales which are covered by others are more pliant, tender, and ſucculent; and the nearer they approach to the centre of the bud, they acquire more of the herbaceous texture of young leaves: the internal ſcales are uſually of a pale green or white colour. The ſcales are very generally lined with a downy or cotton-like ſubſtance. This becomes dry and coloured upon the external ſcales; but where it is ſhielded from the action of the air, it remains ſoft and white, not unlike the downy ſurface of ſatin. The form of each ſcale is that of a ſpoon or ſhallow oval cup, with one extremity more thin and pointed than the other. The ſurfaces of the ſcales are uſually beſmeared with a viſcid matter, of a gum reſinous nature; this becomes involved in the down, and forms a perfect barrier to the tranſmiſſion of air or moiſture to the internal parts of the bud; and not unfrequently the reſinous matter is ſo abundant, that it exudes upon the external ſurface of the bud, giving it all the appearance of being coated with varniſh, as may be obſerved on the buds of the *horſe-cheſnut*, the *tacamahaca*, &c.

If thoſe buds, which have their ſuperficies imbued by a reſinous ſubſtance, be removed from their ſituation, and if the ſurface which unites them to the branch be covered with wax, they may be ſuffered to lie in water for ſeveral months, without experiencing any alteration; nay, it is ſtated by Mirbel, that this experiment has been prolonged for ſome years, without the leaſt injury to the buds.

On proſecuting the diſſection of the bud to its centre, we diſcover either the rudiments of the future branch, or the parts of the fructification in extreme miniature. In the wood-buds the embryo of the branch conſiſts of ſome ſucculent filaments, or imperfectly formed leaves, folded together and ſupported upon a tender footſtalk, very ſimilar to the plumule of the trunk contained in the grain; and in the fruit-buds, the parts compoſing the flower can be diſcerned at a very early period, although in a very ſoft and half organized ſtate.

Both the rudiments of the branch and flower undergo a continual, though ſecret developement, during their exiſtence in the bud; which has been aſcertained by diſſections of the buds, inſtituted at different periods of their growth. The little plumule of the branch can be diſcovered as ſoon as the bud is fairly formed, and continues gradually to acquire more perfect organization, until it burſts from its nidus in the full ſeaſon of vegetation. The rudiments of the bloſſoms of the *pear-tree* are to be ſeen in the month of January, in a group of eight or ten flowers, attached by filaments to a common peduncle. In the midſt of theſe little flowers there are ſeveral minute, thin leaves, of various forms and of a pale green colour, which Duhamel conceives are deſigned to perform the ſame offices, with reſpect to the embryo flower, that the ſeminal leaves anſwer in the ſeed. The ſtamina may be obſerved, at this period, within the flowers, but as yet almoſt tranſparent. The petals are hardly diſcernible, and the piſtils cannot be detected. In the month of March the tops of the ſtamina are red; the petals, although ſmall, may be clearly perceived, and even the pipins may be diſtinguiſhed; they are white, and each nouriſhed by a particular filament: it is probable, that the pipins, and all the eſſential parts of the fructification, are coeval with the bud itſelf, although their ſoftneſs and tranſparency prevent their being diſtinguiſhed: ſo juſt was the obſervation of Grew, that the flowers of the ſpring were formed in the preceding year.

The ſtructure of the wood and flower-buds is exemplified in *Plate* II. in *Vegetable Anatomy*. *Fig.* 11. exhibits the external appearance of the bud of the *horſe-cheſnut*, which is ſelected for the ſake of its great ſize. The ſcales are ſeen laid over each other, like the tiles of a houſe; their more pointed extremities being turned upwards, and all their edges in cloſe contact, as the bud appears in winter. At the baſe of the bud may be ſeen ſome projecting rugæ, and immediately beneath theſe the impreſſions left from the attachment of the former leaves. *Fig.* 12. ſhows a longitudinal ſection of the ſame bud; *a*, the brown ſcales which form the external invelopes; *b*, the tender ſcales ſituated more internally, and becoming more thin, pliant, and folded, the nearer they are to the centre; *c*, the imperfectly-formed leaves of the young branch compreſſed together, and involved by the white down or cotton-like ſubſtance; *d*, the bark of the branch which ſuſtains the bud; *e*, the ligneous portion of it; *f*, its pith. *Fig.* 13. repreſents a bud of the *horſe-cheſnut*, deſpoiled of its ſcales in order to bring into view the fœtal branch, which has its parts ſeparated a little, and cleaned from the down which invelopes them, that they may be more diſtinctly obſerved. The marks appearing beneath the plumule, point out the attachments of the ſcales, which have been removed.

The fourteenth, fifteenth, ſixteenth, and ſeventeenth figures in *Plate* II. in *Vegetable Anatomy*, are intended to explain the ſtructure of the fruit-bud. *Fig.* 14. is the fruit-bud of the *peach-tree*, divided longitudinally, and conſiderably magnified; *a*, *a*, indicate the imbricated ſcales which compoſe the external invelope of the bud; *b*, *b*, refer to the cut edge of the calyx of the flower, which, in the embryo ſtate, forms a complete cell, incloſing the parts of fructification; *c*, *c*, are the ſtamina, almoſt pellucid; *d*, the piſtil. *Fig.* 15. exhibits one of the ſcales abſtracted from its ſituation, and highly magnified; it appears entirely covered by villous proceſſes. *Fig.* 16. ſhews the flower-bud of the *peach tree*, a little larger than the natural ſize, as it appears when diveſted of its ſcaly coverings; *a*, is the calyx, with its edges applied to each other, ſo as to form a perfect cyſt. *Fig.* 17. is the ſame calyx drawn a little larger, and with its leaflets ſeparate from each other, and turned back to expoſe the ſtamina; and in the piſtil within the calyx may alſo be ſeen the rudiments of the petals.

The buds of the *pine* differ in many reſpects from thoſe of other trees. According to Mr. Tſchudi, who has deſcribed theſe buds, they are placed always on the extremity of the branches; they are commonly numerous, the bud, which is at the extremity, being ſucceeded by others much ſmaller than itſelf; they are all contained in one membranous ſheath, formed of many cylindrical pieces, adjuſted the one to the other, and accompanying the developement of the bud. When it firſt appears it is about two fingers in length; it then continues to extend, ſoon becomes large, and the little leaves which have been hitherto ſealed up, unfold themſelves, and the branch comes forth. It is poſſible to diſcover, a long time before the buds are matured, thoſe which are to appear upon the extremity of the branch.

It is difficult to decide with certainty what are the parts of the branch from which the buds, in the firſt inſtance, are derived. When the bud makes its appearance, it is ſo imperfectly organized, that it ſcarcely admits of diſſection, or of being diſtinguiſhed into thoſe parts which it is ultimately to exhibit. Accordingly, we find, that anatomiſts have held very different opinions upon this ſubject. Pontedera conceived that the rudiments of the buds were lodged in the wood alone. Duhamel ſuppoſed that all the parts of the branch were continued into the bud; the internal part of the bark being prolonged to form the ſcales, and the bark of the plumule; the ligneous fibres giving riſe to thoſe of the embryo branch, and the pith being extended into the interior of the different parts of the bud. On the contrary, Hill and others aſſert, that the buds are formed excluſively by the parenchyma. The ſcales of the bud, however, appear to be leaves which have never arrived at maturity: this is the opinion of Mirbel, which he illuſtrates with much ingenuity; he ſuppoſes that the leaves, which afterwards appear as the ſcales of the bud, are rendered abortive, by the abatement in the circulation of the ſap, which takes place on the approach of winter; for, if the motion of the ſap were to be either totally ſuſpended, or not impeded at all, no ſcales would form, which is exactly what may be obſerved in a few trees which inhabit cold countries, and in moſt plants that are natives of hot climates. If, alſo, the top of a tree be cut off before the evolution of the buds, thoſe which are afterwards developed are unfurniſhed with ſcales.

Around the baſe of the bud there is always a degree of tumefaction of the branch, which is called a *burr*; this is formed at the eruption of the bud, and enlarges in all directions,

tions before the ſcales fall, and the parts contained in the bud are unfolded. The *burr* is ſuppoſed to anſwer two very important purpoſes; with reſpect to the bud, the firſt is to ſupply the place of the leaves, by collecting a greater portion of the ſap around the root of the bud, and thus ſupporting it during its hybernation, and yielding, during the ſeaſon of interrupted vegetation, a degree of proviſional nouriſhment to the embryo branch or flower, which is neceſſary for the ſecret developement they are known to experience. The other uſe of the *burr* appears to be to ſeparate the ſcales of the bud from each other previous to the expanſion of the ſhoot; this is accompliſhed by the enlargement of the burr on the return of ſpring. It is evident, the ſlighteſt ſeparation of the ſcales, at their origin, muſt cauſe a conſiderable one of their unattached edges; without the aſſiſtance derived from the growth of the burr, it ſeems quite impoſſible that the tender plumule of the branch or the embryo flower ſhould ever be able to force aſunder the hard and unyielding ſcales that encaſe them, more eſpecially in thoſe inſtances where the ſcales are agglutinated to each other by the gum-reſinous matter.

In ſome experiments which were undertaken by Senebier upon the buds of the *cheſnut*, *apple*, and *pear* trees, he found, that by depriving the flower-buds of their ſcales and little leaves, he did not interrupt the evolution of the flower, nor prevent their going on to produce fruits. Senebier accounts for the flowers ſurviving the privation of their ſcales, by ſuppoſing that the burr in ſome degree might ſupply their place.

The moſt extraordinary circumſtances in the hiſtory of buds, are the converſion of flower-buds into wood-buds, and that of wood-buds into flower-buds. The former is related as being effected by Mariotte in this manner: he deprived, in the latter part of the month of Auguſt, a roſe-tree of its branches and all its leaves, and ſuffered to remain only the buds, which ought to produce flowers the enſuing ſpring; theſe buds continued to grow, but when the period of their developement arrived, inſtead of furniſhing flowers they put forth leaves and branches.

The converſion of the wood-buds into thoſe bearing fruit is accompliſhed by a variety of means, practiſed by common gardeners. Thus, if the upper part of a branch be cut away, the buds near the extremity of the remaining ſtem, from acquiring a greater proportional ſupply of nutriment, will produce leaves and wood, which might otherwiſe have been flowering buds; and, on the contrary, if a vigorous branch of a wall tree, which was expected to bear only leaf-buds, be bent down to the horizon, or lower, it will bear flower-buds, with weaker leaf-buds. On this circumſtance chiefly depends the management of wall fruit trees, and of eſpaliers. For the purpoſe of converting leaf-buds into flower-buds it has been alſo recommended to bind ſome of the moſt vigorous ſhoots with ſtrong wire, and even ſome of the large roots. Some gardeners ſcore the bark in a ſpiral direction, or cut off an entire cylinder of the bark, three or four inches long, and replace it with a proper bandage.

The bud appears to fulfil nearly the ſame purpoſes in the vegetable economy as the ſeed. It contains the embryo of the branch or of the flower, and ſhields it from the operation of the air, the light, and moiſture, and the viciſſitudes of temperature, until it is enabled to withſtand theſe influences by a full exerciſe of the functions of vegetable life. By this means the internal parts of the bud are capable of gradually, though inviſibly, developing themſelves, like the plantule of the ſeed, independently of the vegetable from which they have drawn their exiſtence. The bud alſo, like the grain, admits of removal from its original connexions; of having its actions ſuſpended for an indefinite period, and afterwards of having them renewed at pleaſure; of deriving, by tranſplantation or engrafting, its ſuſtenance from different ſources; and, laſtly, on being laid in the earth, of producing an interior plant in a ſimilar manner as the ſeed, when placed in the ſame circumſtances. As the ſeeds are the oviparous progeny of vegetables, the buds may be conſidered as the viviparous offſpring. They appear to differ chiefly in this circumſtance, that the ſeeds always reſult from a ſexual congreſs, and partake of the properties of both parents; whereas the buds proceed directly from one parent, to which their productions afterwards bear a perfect reſemblance.

Bud is uſed, in *Country Language*, for a weaned calf of the firſt year; ſo called, becauſe the horns are then in the bud.

BUDA, in *Geography*, called by the Germans *Offen*, the ancient metropolis of Hungary, is ſeated on an eminence on the weſt ſide of the Danube, and is connected with Peſth, ſituate on the oppoſite ſide of the river, by a bridge of boats about ¾ths of a mile in length, and conſiſting of 63 large pontoons. The old city is ſeated on a plain extending itſelf from the ſuburbs of New Buda to the ſpace that lies between the Pilis mountains and the Danube, and was formerly called "Sicambria." But this is now a wretched place, and affords nothing remarkable beſides the ruins of an old aqueduct, built either by the Romans or Hungarians. A wide ſubteraneous paſſage has been diſcovered, with which the Turks ſeem to have been well acquainted, and which leads from this place to the citadel of Buda. New Buda is a royal free town. It was formerly the capital of the kingdom, and, in its connection with Peſth, the largeſt and fineſt of all the Hungarian towns, and the reſidence of the kings. The houſes are moſtly conſtructed of ſquare ſtone; but ſince the Turks took poſſeſſion of it, they ſuffered the fineſt buildings to ſink into decay. The lower part of the city, called the "Jews town," extends like ſuburbs from the upper city to the Danube. The higher town occupies the declivity of a mountain, and is fortified with walls and towers. The caſtle, ſeated on an eminence towards the eaſt ſide, commands the greateſt part of it, is encompaſſed by a deep moat, and is defended by an old faſhioned tower, to which ſome new fortifications have been added. One ſuburb is encloſed with hedges. The moſt ſumptuous of its preſent ſtructures are the caravanſeras, moſques, bridges, and baths. The chief public and private buildings are in Peſth, and within the fortreſs; the royal palace in particular is a large and ſtately edifice. The form of Peſth is quadrangular; and it has, beſides the royal palace, a military hoſpital, with ſeveral churches and convents. At a little diſtance from it is a field, in which many diets have been held, and where the ſtates of Hungary formerly met on horſeback, and in arms, to elect their king. Among the decayed buildings of Buda, the church of the Aſcenſion of the Virgin Mary is the principal, near which the Jeſuits have an academical college and ſeminary. The Carmelite nuns have a convent, and the Franciſcans have churches. Both Catholics and Calviniſts are allowed the free exerciſe of their religion; and the Jews have a ſynagogue near the caſtle garden. But the moſt famous edifices of Buda are its baths; of which there are two ſorts, the upper or Trinity baths, and thoſe of Muſtapha, who was governor of the place, and built them with ſtone, covering them with lead. Some of theſe waters are of ſuch moderate temperature, that they may be uſed in their natural ſtate either for drinking or bathing; but others are ſo hot, that they muſt be mixed with cold water, or conveyed to cool in other baths, before they can be uſed. The adjacent country is fertile, though not well cultivated; and affords good red wine and excellent melons.

This city was the reſidence of the Hungarian monarchs, till it was taken by the Turks, under the Sultan Solyman, in 1526; but though they were diſpoſſeſſed of it the next year by Ferdinand, archduke of Auſtria, they recovered it again in 1529. Although it was afterwards frequently beſieged, it continued under the dominion of the Turks till the year 1686, when it was beſieged and taken, after an obſtinate reſiſtance and great ſlaughter, by the duke of Lorrain. From this time it has remained under the dominion of the houſe of Auſtria. In 1784, the ſeat of the provincial government, and the public offices, were reſtored from Preſburg to Buda; and, therefore, this city, joined with Peſth, may ſtill be regarded as the capital of Hungary. The population of Buda is eſtimated at 20,000; but if Peſth be included, it may be computed at 34,000. Dr. Townſon, (Travels in Hungary, 4to. 1796.) ſtates it at 38,000. The univerſity of Buda, as we are informed by this traveller, poſſeſſes an income of about 20,000l. ſterling, of which only 4000l. are applied towards paying the ſalaries of the profeſſors. Beſides the uſual chairs which exiſt in every univerſity, there are thoſe of natural hiſtory, botany, and economy. The inſtruments for natural philoſophy, and the models of machines are good; and the muſeum of natural hiſtory, which contains the collection of the late profeſſor Piller, beſides that of the univerſity, may be ranked among the fine collections of Europe. Buda is diſtant 125 miles E.S.E. from Vienna, and 15° N. N. W. from Belgrade. N. lat. 47° 30′. E. long. 19° 10′.

Buda, a town of Lithuania, in the palatinate of Wilna; 80 miles E. of Wilna.

BUDÆUS, William, in *Biography*, one of the moſt learned men of the 15th century, and a deſcendant of an ancient and honourable family, was born at Paris, in 1467; and having paſſed through the grammar ſchools at Paris, and having ſpent three years at Orleans, in the ſtudy of the law, to little or no purpoſe, he conceived a diſguſt at the prevalent barbariſm of literature, and devoted himſelf wholly to youthful pleaſures. At length, however, he was ſeized with an ardent paſſion for literary purſuits, which induced him to abandon every amuſement, and to dedicate his whole time and attention to ſtudy, ſo that he ſcarcely allowed himſelf the neceſſary intervals for his meals and reſt. By means of unwearied aſſiduity, firſt without any aſſiſtance, whence he called himſelf αυτομαθης, and οψιμαθης, i. e. *ſelf-taught*, and *late-taught*, and afterwards with the advantage of inſtructions from Hermonymus, whom he retained at a large ſalary, and from Laſcaris in Greek, and James de Fevre in mathematics, he acquired ſingular reputation as a ſcholar. and particularly for an acquaintance with the Latin and Greek languages. He had reaſon, however, to regret that want of early practice, which is adapted to form eaſe and elegance of language; and hence his ſtyle, both in French and Latin, though ſtrong and lofty, was harſh and perplexed. His firſt literary performances were tranſlations of ſome treatiſes of Plutarch; and, in 1508, he publiſhed "Notes on the Pandects." But his principal reputation among the learned was owing to his treatiſe "De Aſſe," which contributed in a very eminent degree to facilitate the ſtudy of the ancient coins, weights, and meaſures. The fame which he thus eſtabliſhed, excited envy among his contemporaries; and Eraſmus, though he acknowledged his merit, became jealous of him, ſo that a diſagreement took place between theſe two diſtinguiſhed perſons, which prevented Budæus's citing Eraſmus in his works. By avoiding the topics which might occaſion a ſuſpicion of his faith, he precluded thoſe objections to the revival of learning, to which the intereſted and the ignorant were at that time diſpoſed to recur. Upon his firſt introduction to the French court, he was employed by Lewis XII. in two embaſſies to Italy, and appointed the king's ſecretary; and in the reign of Francis I. who diſtinguiſhed himſelf by his patronage of learned perſons, he obtained the place of maſter of requeſts, together with the office of librarian and ſecretary to the king; and was deputed on an embaſſy to Leo X. He was alſo choſen provoſt of the merchants of Paris. At his ſuggeſtion, in concurrence with that of Du Bellay, Francis founded the Royal College for giving inſtruction in the languages and ſciences. During his progreſs with the king in Normandy, in 1540, he was ſeized with a fever, and this terminated in his death, after his return to Paris, in the 73d year of his age. His funeral was performed, in conformity to his expreſs orders, privately, and by night; and this circumſtance gave his enemies occaſion to charge him with having adopted the ſentiments of the reformers, though he had explicitly, and even acrimoniouſly condemned them in ſome of his publications. He had alſo occaſionally declaimed with vehemence againſt the court of Rome, and the corruptions of the clergy. The ſuſpicion, however, was confirmed by the removal of his widow to Geneva, where ſhe, and two of his ſons, avowed themſelves proteſtants. Of his character it is ſaid, that it was fair and honourable; though Bayle obſerves concerning him, that he was more feared than beloved in the republic of letters; and that in his diſputes with Eraſmus he was the leaſt moderate of the two. His works were collected and printed at Baſil, in 1557, in 4 vols. fol. Beſides the treatiſes already mentioned, he wrote "Commentaries on the Greek and Latin Languages;" and a "Treatiſe on the Inſtruction of a Prince," dedicated to Francis I. Gen. Dict.

BUDARIN, in *Geography*, a town of Ruſſian Tartary, in the government of Caucaſus, on the weſt ſide of the Ural; 36 miles S.S.W. of Uralſk.

BUDAWUN, a town of Hindooſtan, in the country of Malwa; 240 miles S. of Delhi, and 132 N.E. of Ougein.

BUDAYEON, a town of Hindooſtan in the country of Oude; 24 miles S.W. of Bereilly, and 70 N.E. of Agra.

BUDDÆUS, John-Francis, in *Biography*, a learned and diligent profeſſor and writer, was born at Anelam, in Pomerania, in 1667; and after having acquired a large fund of learning in the languages, as well as in philoſophy and divinity, he firſt gave private lectures at Jena, and in 1692, was appointed profeſſor of Greek and Latin at Coburg. From thence, he was removed by the invitation of Frederic, elector of Brandenburg, to the chair of moral and political profeſſor in his newly founded univerſity of Halle. After continuing in this ſtation 12 years, he re-aſſumed the profeſſorſhip of theology at Jena, where he died, in 1729. Beſides the diligent diſcharge of his profeſſional duties, he maintained an extenſive correſpondence, and wrote many works. Of theſe the principal are, "Elementa Philoſophiæ practicæ, inſtrumentalis et theoreticæ," 3 vols. 8vo., which ſerved for a long time as a text-book in the proteſtant German univerſities: "A Syſtem of Theology," 2 vols. 4to. much eſteemed by the Lutherans: "The great German Hiſtorical Dictionary," 2 vols. fol.; "A Treatiſe on Atheiſm and Superſtition," 8vo., tranſlated into French; and "Miſcellanea Sacra," 3 vols. 4to. Nouv. Dict. Hiſt.

BUDDEKANO, in *Geography*, a town of Hindooſtan, in the country of Agimere, ſeated on the river Pudder; 87 miles W. of Oudipour, and 100 N. of Amedabad. N. lat. 24° 30′. E. long. 72° 50′.

BUDDENBORG, a town of Germany, in the circle of Weſtphalia, and county of Marck; 2 miles N.W. of Lunen.

BUDDESDALE. See Botesdale.

BUDDING, in *Gardening*, is a method of propagation, practiſed for various ſorts of trees, but particularly thoſe of the fruit kinds. It is the only method which can be had recourſe to with certainty, for continuing and multiplying the approved varieties of many ſorts of fruit and other trees: as although their ſeeds readily grow, and become trees, not one out of a hundred, ſo raiſed, produces any thing like the original; and but very few that are good. But trees or ſtocks raiſed in this manner, or being budded with the proper ſorts, the buds produce invariably the ſame kind of tree, fruit, flower, &c. continuing unalterably the ſame afterwards.

This mode of propagation is particularly uſeful for peaches, nectarines, and apricots, which ſucceed better by budding than grafting; and are uſually worked upon plum ſtocks, raiſed from ſeed, and ſometimes, from thoſe raiſed from ſuckers, layers, and cuttings. Theſe ſorts of trees are often likewiſe budded upon ſtocks raiſed from the kernels of theſe kinds of fruit; they are, however, more ſtrong and durable, in general, when grafted upon plum ſtocks. Plum and cherry trees are alſo often propagated by budding, as well as grafting; the ſecond ſort is, however, generally the moſt proſperous by the latter method, as being more apt to gum and go off by budding. Theſe different trees being of the ſame genus, grow upon ſtocks of each other, but much the beſt upon their own ſtocks, as plum upon plum, and cherry upon cherry ſtocks.

Apples and pears may likewiſe be propagated by the budding method, as well as by grafting; but as they grow freely by grafting, which is the moſt eaſy and expeditious, they are more commonly increaſed in that method. In ſhort moſt kinds of fruit trees, as well as others, that are capable of being propagated by grafting, alſo ſucceed by budding; grafting is, however, more adapted to ſome ſorts, and budding to others. Various ſorts of foreſt and flowering trees, deciduous as well as evergreen, may likewiſe be propagated by budding, which is a certain method to continue particular varieties, ſuch as many of the variegated leaved kinds, as the variegated hollies, and many other ſorts. The budding in almoſt all ſorts, is performed on young trees raiſed from ſeed, ſuckers, layers, &c. which when raiſed purpoſely for budding and grafting upon, are called ſtocks, and which after becoming about half an inch thick in the bottoms of the ſtems, or a little more or leſs, according to circumſtances, are of a proper ſize for the purpoſe, though it may be performed upon ſtocks from the ſize of a gooſe quill to an inch or more, being moſtly done upon ſtocks or trees of the ſame genus.

The ſtocks for this uſe, are commonly, as has been obſerved, raiſed from ſeed, as the kernels or ſtones of theſe different ſorts of fruit, &c. ſown in autumn or ſpring in beds in the nurſery an inch or two deep, which, when a year or two old ſhould be tranſplanted into nurſery rows, two feet aſunder, and fifteen or eighteen inches diſtant in the rows, to ſtand for budding upon, keeping them to one ſtem, and ſuffering their tops to run up entire; when of two or three year's growth, or about the ſize of the little finger at bottom, or a little more, they are as has been ſeen of due ſize for budding upon. Stocks raiſed, from ſuckers ariſing from the roots of the trees of theſe different ſorts, layers, and cuttings of them, are alſo made uſe of; but they are not ſo good for the purpoſe. Budding may likewiſe be performed occaſionally upon trees that already bear fruit, when intended to change the ſorts, or have different ſorts on the ſame tree, or to renew any particular branch of a tree; the operation being performed on the young ſhoots of the year, or of one or two years' growth only.

The moſt proper ſeaſon for performing the operation of budding, is from about the middle of June, until the middle or latter end of Auguſt; ſome, however, begin to bud in June, but the buds inſerted ſo early are apt to ſhoot in the ſame year, and theſe not having time to harden, are liable to be killed in winter. The buds for this uſe ſhould in general be taken only from the young ſhoots of the year, as thoſe of the ſame ſummer's growth, which muſt be cut from the trees of the ſorts intended to be propagated, always chooſing them from healthy thriving trees; and if fruit trees, from ſuch as bear the fineſt fruit of their reſpective kinds and varieties. A quantity of the beſt moderately ſtrong young ſhoots ſhould be cut each day as they are wanted; and as they are gathered, the leaves cut off, but not quite cloſe, reſerving about a quarter of an inch of their foot-ſtalks, trimming off alſo the ſoft unripened top end of each cutting, covering them from the ſun and air, and taking them out as wanted. As each cutting furniſhes many buds, they are to be cut off about an inch and a half long, one at a time, as they are inſerted in the ſtocks. Thoſe in the middle part of the cutting are preferable to thoſe towards each end, though in caſes of ſcarcity of cuttings, every one of them may be uſed. One bud only is in general inſerted in each ſtock; ſome, however, place two on each ſide oppoſite each other.

The moſt proper height to bud ſtocks varies according to the intention, but from about three or four inches to ſix feet or more from the ground is practiſed. To have dwarf trees for walls and eſpaliers, &c. they muſt be budded from within about three to ſix inches from the bottom, that they may firſt furniſh branches near the ground; for half ſtandards, at the height of three or four feet; and for full ſtandards, at from about five to ſix or ſeven feet high; the ſtocks being trained accordingly.

The neceſſary implements and materials for this purpoſe, are a ſmall budding knife for preparing the ſtocks and buds for inſertion, having a flat thin haft to open the bark of the ſtocks in order to admit the buds; and a quantity of new baſs ſtrings well moiſtened, to tie them with.

In performing the operation of budding, the head of the ſtock is not to be cut off, as in grafting, but the bud inſerted into the ſide, the head remaining intire till the ſpring afterwards, and then cut off. A ſmooth part on the ſide of the ſtocks at the proper height, rather on the north ſide, away from the ſun, ſhould be choſen; and then with the knife, an horizontal cut made acroſs the rind, and from the middle of that cut, a ſlit downwards about two inches in length, in the form of the letter T, being careful leſt the ſtock be wounded. Then having cut off the leaf from the bud, leaving the foot-ſtalk remaining, make a croſs cut about half an inch below the eye, and with the knife ſlit off the bud with part of the wood to it, ſomewhat in the form of an eſcutcheon, pulling off that part of the wood which was taken with the bud, being careful that the eye of the bud be left with it, as all thoſe buds which loſe their eyes in ſtripping, ſhould be thrown away as good for nothing; then having gently raiſed the bark of the ſtock where the croſs inciſion was made with the flat haft of the knife clear to the wood, thruſt the bud in, placing it ſmoothly between the rind and the wood of the ſtock, cutting off any part of the rind belonging to the bud, which may be too long for the ſlit; and after having exactly fitted the bud to the ſtock, tie them cloſely round with baſs ſtring, beginning at the under part of the ſlit, and proceed to the top, taking care not to bind round the eye of the bud, which ſhould be left open and at liberty. When the buds have been inſerted about three weeks or a month, examine which of them have taken; thoſe which appear ſhrivelled and black being dead, but ſuch as remain freſh and plump are joined; and at this time, looſen the bandage, which, if not done in time, is apt to pinch the ſtock, and greatly injure, if not deſtroy the bud. The March following, cut off the ſtock about three inches above the bud, ſloping it that the wet may paſs off, and not enter into the ſtock. To the part of the ſtock which is left, ſome faſten the ſhoot which proceeds from the bud, to prevent the danger of its being blown out, but this muſt continue no longer than one year; after which, it muſt be cut off cloſe above the bud, that the ſtock may be covered by it. Some adviſe it to be cut cloſe at firſt, which is probably the beſt practice.

But though it is the ordinary practice to diveſt the bud of that part of the wood which was taken from the ſhoot with it, yet in many ſorts of tender trees, it is better to preſerve a little wood to the buds, without which they often miſcarry. The not obſerving of this, has occaſioned ſome to imagine, that ſome ſorts of trees are not to be propagated by budding, which, if performed in this method, might have ſucceeded. Where this has been done, the whole effort of the ſtocks being directed to the inſerted buds, they ſoon puſh forth ſtrongly, one ſhoot from each; many ſhoots alſo ariſe from the ſtocks, but theſe muſt be conſtantly rubbed off as often as they appear, that all the power of the ſtocks may be collected for the vigorous growth of the bud ſhoots, which now commence trees; and which, by the end of the ſummer, will, in ſome ſorts, be advanced three or four feet in height. In the autumn or ſpring following, the young trees may be tranſplanted into the places where they are to remain, or remain longer in the nurſery, according to the purpoſe for which they are deſigned. In trees that are deſigned for fruit on walls, eſpaliers, or as dwarfs, the firſt ſhoots from the buds ſhould, in the ſpring after they are produced, be headed down to four or five eyes to force out ſome ſhoots near the bottom; but if deſigned for half or full ſtandards, and budded at proper heights, the firſt ſhoots of the buds may either be ſhortened as above, to four or five eyes to provide lateral branches near the top of the ſtem, to form a ſpreading head, or be ſuffered to grow up in height, and branch out in their natural way, by which they will form more erect heads of loftier growth. Such full or half ſtandards as are deſigned for walls, and were budded high on the ſtocks, muſt alſo neceſſarily have the firſt ſhoots headed down in the ſpring following, to force out lateral ſhoots to furniſh the allotted ſpace of walling; and on the other hand, where trees are deſigned for any ſort of ſtandards, and budded low on the ſtocks, the firſt ſhoots of the buds ſhould be trained up for ſtems to a proper height before they are ſtopped, and then topped to throw out ſhoots to form heads of the deſired heights. See Inoculation.

BUDDLE, in *Mineralogy*, a name given by the Engliſh dreſſers of the ores of metals, to a ſort of frame made to receive the ore after its firſt ſeparation from its groſſeſt foulneſs.

The ore is firſt beaten to powder in wooden troughs, through which there runs a continual ſtream of water, which carries away ſuch of it as is fine enough to paſs a grating, which is placed at one end of the trough; this falls into a long ſquare receiver of wood, called the *launder*: the heavieſt and pureſt of the ore falling at the head of the launder, is taken out ſeparately, and requires little more care or trouble; but the other part, which ſpreads over the middle and lower end of the launder, is thrown into the buddle, which is a long ſquare frame of boards, about four feet deep, ſix long, and three wide; in this there ſtands a man barefooted, with a trampling ſhovel in his hand, to caſt up the ore about an inch thick, upon a ſquare board placed before him as high as his middle; this is termed the *buddle-head*; and the man dexterouſly, with one edge of his ſhovel, cuts and divides it longwiſe, in reſpect of himſelf, about half an inch aſunder, in theſe little cuts; the water coming gently from the edge of an upper plain board, carries away the filth and lighter part of the prepared ore firſt, and then the metalline part immediately after, all falling down in the buddle, where, with his bare feet, he ſtrokes it and ſmooths it, that the water and other heterogeneous matter may the ſooner paſs off from it.

When the buddle by this means becomes full, the ore is taken out; that at the head part, being the fineſt and pureſt, is taken out ſeparate from the reſt, as from the launder. The reſt is again trampled in the ſame buddle; but the head, or, as it is called the forehead, of this buddle, and of the launder, are mixed together, and carried to another buddle, and trampled as at firſt. The foreheads of this laſt buddle, that is, that part of the ore which has fallen at the head, is carried to what they call a drawing buddle, whoſe difference from the reſt is only this, that it has no tye, but only a plain ſloping board, on which it is once more waſhed with the trampling ſhovel. Tin-ore, when it is taken from this, is called black tin, and this is found to be completely ready for the blowing-houſe. Phil. Tranſ. N° 69. See *Dreſſing of* Ore.

BUDDLEA, in *Botany* (in honour of Adam Buddle, an eminent Engliſh botaniſt at the latter end of the 17th century, whoſe Herbarium is now depoſited in the Britiſh Muſeum) Linn. gen. 140. Reich. 146. Schreb. 184. Willd. 220. Gært. 275. Juſſ. 118. La Marck. Illuſ. 182. Claſs and order, *tetrandria monogynia*.

Nat. ord. *Scrophulariæ* Juſſ. *Perſonatæ* Vent.

Gen. char. *Cal.* Perianth very ſmall, four-cleft, acute, erect, permanent. *Cor.* one-petalled, bell or funnel-ſhaped, four-cleft, erect, longer than the calyx, ſegments ovate or obtuſe. *Stam.* Filaments four, very ſhort, inſerted below the diviſions of the corolla: anthers very ſhort, ſimple. *Piſt.* Germ ſuperior, ovate: ſtigma obtuſe or bifid. *Capſ.* ovate, two-furrowed, two-celled, two-valved (each finally dividing into two, Juſſ. partition double, parallel to the valves, Gært.)

Eſſen. char. *Cal.* four-cleft. *Cor.* four-cleft. *Stam.* from the diviſions. *Capſ.* two-celled, two-furrowed, many-ſeeded.

Species 1. B. *americana.* Linn. Brown. Jam. 144. Sloan. Jam. 139. Hiſt. 2. p. 29. T. 173. f. 1. "Leaves ovate, ſerrated; ſpikes panicled, terminal." La Marck. A ſhrub, nine or ten feet high. *Branches* tomentoſe. *Leaves* oppoſite, acute, narrowing at their baſe into the petiole, green above, whitiſh beneath. *Flowers* yellow, ſmall, bell-ſhaped, ſeſſile on the common peduncles. Lam. A native of the Weſt Indies, ſent to Sir Hans Sloane from Jamaica by Dr. Houſtoun in 1730. 2. B. *occidentalis.* Linn. Pluk. t. 210. f. 1. is referred to by Linnæus, but La Marck thinks that that figure does not expreſs any ſpecies of this genus. Gært. t. 49. f. 7. Lam. Illuſt. Pl. 69. f. 1. "Leaves lanceolate, acuminate, ſlightly ſerrated; ſpikes interrupted, ſomewhat panicled." Lam. It differs from the preceding in having longer, narrower, and leſs ſerrated leaves, white flowers, and interrupted ſpikes. Lam. Swartz doubts whether it be more than a variety. Miller in addition to the diſtinctions mentioned by La Marck, ſays that it has long, narrow, ſpear-ſhaped leaves between the ſpikes; whereas thoſe of the former ſpecies are naked. Sent to Mr. Miller from Carthagena by Dr. Houſtoun. 3. B. *betonicæfolia* Lam. Illuſt. "Leaves ovate-oblong, ſlightly ſcolloped, much wrinkled; ſpikes interrupted, panicled." Leaves petioled, obtuſe. Joſ. Juſſ. Native of South America. 4. B. *thyrſoides*. Lam. Illuſ. "Leaves lanceolate-linear, ſerrated, ſeſſile; raceme ſpikelike, terminal." *Leaves* erect, tomentoſe beneath. Commer. Native of Monte Video. 5. B. *virgata*. Linn. Jun. Supp. Thunb. Prod. 30. "Leaves linear-oblong, obtuſe, entire, or obſcurely toothed; branches ſlender, erect; racemes terminal. Habit of Hyſſop. *Branches* and *leaves* hoary, with a fine down. Linn. Jun. *Leaves* like thoſe of lavender; the upper ones growing gradually ſmaller. Lam. Found by Thunberg at the Cape of Good Hope. 6. B. *ſalicina*. Lam. Illuſt. "Leaves oblong-lanceolate, a little toothed, petioled, white, with down beneath; ſpikes ſlender, terminal." Native of India, ſpecific character formed from a ſpecimen without flowers in the Herbarium of Juſſieu. It is probably the ſame as the B. ſalicifolia of Willdenow taken up from Vahl with the following ſpecific character. "Leaves lanceolate, ſerrated outwards, tomentoſe beneath; racemes terminal; pedicles many-flowered; flowers nodding." 7. B. *volubilis*, Lam. Ill. "*Leaves* linear, acute, very entire; ſtem twining; cymes axillary, downy-ferruginous." Found by Commerſon in the Iſle of Bourbon. 8. B. *globoſa*. Hort. Kew. V. 1. p. 150. Lam. Willd. (B. capitatata, Jac. ic. rar. 2. p. 332. Palquin. Feuill. peruv. 2. p. 71. tab. 38.) "Leaves lanceolate, ſharp-pointed, ſcolloped, downy beneath; heads globoſe." Lam. A branched, ever-green ſhrub, from eight to ten feet high. *Leaves* about five inches long, finely ſcolloped at their edges, narrowed at the baſe, oppoſite, connate, reticulated with veins like thoſe of the common ſage. *Flowers* ſmall, bell-ſhaped, yellow, of a pleaſing ſmell, on a common globular receptacle. *Heads* of flowers peduncled, axillary and terminal. A native of Chili, introduced into England by Meſſrs. Kennedy and Lee in 1774. 9. B. *madagaſcarienſis*, La Marck, tab. 69. fig. 3. Willd. "Leaves lanceolate, entire, petioled, tomentoſe beneath; flowers in terminal racemes." *Leaves* oppoſite, entire. *Racemes* compound. *Flowers* ſeveral together, on common peduncles, which gradually diminiſh in length, till the flowers become ſeſſile near the top of the raceme. *Calyx* ſhort. *Corolla* funnel-ſhaped. A native of Madagaſcar, found by Sonnerat, and deſcribed by Lamarck from a dried ſpecimen in the Herbarium of Commerſon. 10. B. *ſalvifolia*. Hort. Kew. Lam. Willd. (Lantana *ſalvifolia*, Linn.) "Leaves ovate-lanceolate, ſcolloped, wrinkled, nearly ſeſſile; racemes compound." La Marck. A ſhrub five or ſix feet high. *Branches* tomentoſe, four-cornered. *Leaves* oppoſite, ſometimes ternate, ſharp-pointed, wrinkled and reticulated like thoſe of ſage, a little tomentoſe. *Stipules* ſubovate, in pairs. *Racemes* terminal, and axillary on the upper part of the branches. *Flowers* in ſmall, tomentoſe, oppoſite, peduncled faſcicles or corymbs, with bractes at their baſe, and at the baſe of the common peduncles. *Calyx* very ſhort. *Corolla* tubular, ſlender, pale purple, covered with a mealy down, tube three times longer than the calyx; border with very ſhort diviſions. A native of the Cape of Good Hope; cultivated by Mr. Miller in 1760. The fruit was unknown to Linnæus; and does not appear to have been ſeen by any ſucceeding botaniſt, not having been brought to perfection in any of the Engliſh or French gardens. La Marck was induced to place it in this genus by the ſimilarity of its flowers to thoſe of B. madagaſcarienſis. 11. B. *diverſifolia*, Willd. (B. indica, Lam.) "Leaves ovate, entire, petioled: corymbs axillary, very ſhort, clothed with a ferruginous down." A ſhrub. *Leaves* oppoſite, on ſhort petioles, a little tomentoſe, and ferruginous on their lower ſurface. *Flowers* from ſix to nine; in ſmall, oppoſite corymbs, ſhorter than the leaves. *Calyx* tomentoſe, very ſhort, and almoſt truncate. *Corolla* tubular, tomentoſe on the outſide, ſlender. *Style* the length of the corolla. *Fruit* unknown A native of Java, communicated by M. Sonnerat, and deſcribed by La Marck from a dried ſpecimen. 12. B. *incompta*. Linn. jun. Supplement. Willd. La Marck Dict. but omitted in the ſubſequent illuſtrations. "Leaves faſciculated, ovate, hoary; branches zig-zag, ſtiff; racemes terminal." Found by Thunberg at the Cape of Good Hope. 13. B. *aſiatica*. Martyn's Miller. Lour. Coch. "Leaves lanceolate-linear, wrinkled, ſmooth, ſpikes full." *Stem* ſuffruticoſe, three feet high, with aſcending branches. *Leaves* long, not interrupted. *Calyx* with awl-ſhaped, upright ſegments. *Corolla* with rounded diviſions. *Style* equal to the ſtamens. Stigma longiſh, bifid. Native of Cochin-china. 14. B. *ternata*. Martyn's Miller. Lour. Coch. "Leaves ternate, acuminate; peduncles one flowered." *Stem* ſuffruticoſe, two feet high, upright, round, branched. *Leaflets* lanceolate, ſerrated. *Flower* white, axillary. Segments of the *calyx* converging. *Nectary* hairy. *Stigma* bifid. Native of Cochin-china.

Propagation and culture. The americana, occidentalis, globoſa, and ſalviſolia, are the only ſpecies which have hitherto been cultivated in Europe. The americana and occidentalis muſt be raiſed from ſeed ſent *in their capſules* from their native country, which ſhould be ſowed in ſmall pots, and very lightly covered with rich, light earth. The pots ſhould be plunged into a moderate hot-bed, and gently watered every third or fourth day. If the ſeeds are freſh and good, and ſown in the ſpring, the plants will come up in about ſix weeks, and may generally be tranſplanted in about two months after. They ſhould then be planted ſeparately in ſimilar pots and earth, ſhaded from the ſun, and occaſionally watered. After they have taken root, they ſhould have freſh air every day, according to the warmth of the ſeaſon, and be moderately ſupplied with water. About the middle of Auguſt it will be proper to ſhift them into larger pots, and to turn over the tan in the bed, that the heat may be renewed. In the autumn they muſt be removed into the ſtove, where they muſt conſtantly remain plunged in the tan-bed. In the winter they ſhould have little water, and muſt be kept warm; but in ſummer they ſhould have freſh air, and be frequently ſprinkled all over with water. They will flower about the fourth year from the ſeeds.

The globoſa and ſalvifolia may be propagated by cuttings on an old hot-bed in July, covered with a bell-glaſs, and ſhaded from the ſun. In a month they may be planted in pots; and when they have taken freſh root, ſhould be removed to a ſheltered ſituation till the winter, when they muſt be preſerved in the conſervatory, or dry ſtove. The globoſa will flower well, and live through a mild winter out of doors in a warm ſheltered border.

BUDDLING *of calamine*, denotes the operation of cleanſing it from filth, by waſhing and picking it, preparatory to the baking of it in the oven. Phil. Tranſ. N° 198. p. 675. See Calamine.

Buddling *diſh*, a ſmall, ſhallow veſſel, like the baſons of a pair of ſcales, for the waſhing of ores of metals by the hand.

BUDDRA, in *Geography*, a river of the peninſula of India, which riſes in the Myſore country, and joining the Toom near the county of Hooly-Onorc forms the Toombuddra river.

BUDDRINANT, or Badrenaut, a town of Thibet, on the eaſt ſide of the river Alikmundra, or Aluknundra. N. lat. 32°. E. long. 80° 20′.

BUDDS Valley, a place in the county of Morris, and ſtate of New Jerſey, in America, ſituate on the head waters of Rariton.

BUDE *river* and *haven*, lie on the north coaſt of Cornwall, about S.S.W. and S.½W. from Hartland point, on the coaſt of Devon.

BUDEA, or Budacum, in *Ancient Geography*, a town of Magneſia.—Alſo, a town of Aſia Minor in Phrygia. Steph. Byz. *Budea* was one of the appellations given to Minerva.

BUDEL (*Ridinger*), in *Zoology*, the water-dog: (Canis) variety *aquatilis*.

BUDELICH, in *Geography*, a town of Germany, in the circle of the Lower Rhine, and electorate of Treves; or by the French arrangement, in the department of the Sarre, and chief place of a canton, in the diſtrict of Treves; 11 miles E. of Treves; the town contains 195, and the canton 6560 inhabitants; and the territory comprehends 24 communes. N. lat. 49° 52′. E. long. 6° 55′.

BUDERICH. See Burich.

BUDESHEIM, a town of Germany, in the circle of the Lower Rhine, and electorate of Mentz; one mile E. of Bingen.

BUDETIN, a town of Hungary; 16 miles E. N. E. of Boleſko.

BUDGE, in *Law*. See Bouche *of court*.

Budge-*barrels*, are ſmall barrels well hooped, with only one head, the other end having nailed on it a piece of leather, to draw together upon ſtrings, like a purſe.

Budge-barrels are uſed for carrying powder along with a gun or mortar; as being leſs dangerous, and alſo eaſier than whole barrels. They are alſo uſed upon batteries of mortars, for holding meal-powder.

BUDGELL, Eustace, in *Biography*, the relation and friend of Addiſon, and an ingenious writer, was the ſon of Gilbert Budgell, D. D. of St. Thomas near Exeter, and was born about the year 1685. He was educated as a gentleman commoner at Chriſtchurch College, Oxford, and afterwards entered at the Inner Temple, London, with a view to the profeſſion of the law. But an inclination to pleaſure, and alſo to polite literature, diverted his attention from ſtudies appropriate to the bar; and in 1710, he accompanied Addiſon to Ireland, as one of his clerks. By aſſociating with perſons of taſte and faſhion, and cultivating an acquaintance with the beſt writers, ancient and modern, he acquired the accompliſhments of the gentleman and ſcholar. But though he was diſtinguiſhed by a lively imagination, tenacious memory, genteel addreſs, and graceful elocution, his conſummate vanity depretiated his other talents, and became a prominent feature of his character through life. His firſt exhibition as an author was in the Spectator; and the papers marked X in the firſt ſeven volumes are attributed to him. The eighth volume is ſaid to have been wholly conducted by Addiſon and Budgell. Dr. Johnſon, however, ſays that his papers were either written by Addiſon, or ſo much improved by him, as to be rendered in a manner his own; and, it is obſerved, that their ſtyle reſembles that of Addiſon. The humorous and admired epilogue to the Diſtreſſed Mother, uſually aſcribed to Budgell, is alſo ſaid to have been the compoſition of Addiſon. About this time, Budgell wrote ſeveral epigrams and ſongs, which together with Addiſon's ſincere attachment to him, recommended him to general notice and eſteem. But, notwithſtanding his literary connections and engagements, and his acceſſion to a family eſtate, encumbered indeed with debts, of 950l. a year, he was unremitting in his attention to the duties of his office. In the preface to the Guardian, he is repreſented as having a concern in that work, in connection with Addiſon and ſir Richard Steele; but his papers are not now diſcriminated. In 1714, he publiſhed a tranſlation from the Greek, of "The Characters of Theophraſtus," which was commended by Addiſon, and which appears to have been executed with ingenuity and elegance. In this year, he was advanced to the offices of under ſecretary to the lord lieutenant, chief ſecretary to the lords juſtices of Ireland, and deputy clerk of the council in that kingdom. To theſe was added the honour of a ſeat in the Iriſh parliament, where he diſtinguiſhed himſelf as a ſpeaker. When the rebellion broke out in 1715, he was entruſted with the charge of tranſporting troops to Scotland, which he executed in a manner equally able and diſintereſted. In the beginning of the year 1717, when Addiſon became ſecretary of ſtate, he was promoted, under his patronage, to the office of accomptant and comptroller general of Ireland. But this tide of proſperity took an unfavourable turn ſoon after this latter appointment, when the duke of Bolton was appointed to the vice-royalty. When the duke's ſecretary inſiſted on quartering upon him a friend, his indignation was rouſed; and he attacked both the ſecretary and the lord lieutenant in a virulent lampoon, which he publiſhed againſt the advice and remonſtrance of Addiſon, and which cauſed him to be deprived of his place as accomptant. Upon his return to England, he determined, in oppoſition to the counſel of his beſt friends, to publiſh his caſe, and, by this ſecond act of indiſcretion, he increaſed the reſentment of his enemies. By a popular pamphlet written in 1719 againſt the famous peerage bill, he incenſed the earl of Sunderland; and, at this time, the death of Addiſon, his ſteady friend and faithful counſellor, terminated all his expectations from the court. His circumſtances, however, were eaſy and affluent, and he might have lived with dignity and independence. But deluded by the infatuation of the fatal year 1720, he embarked in the South Sea ſcheme, and loſt 20,000l. Having taken an active part in the concerns and debates of the company, and publiſhed pamphlets on the occaſion, that were well received, he attracted the notice of the duke of Portland, who had been a ſufferer in this bubble as well as himſelf; and he was taken under his ſpecial patronage, with the promiſe of accompanying him as his ſecretary to Jamaica, of which iſland he was appointed governor. But the implacable reſentment of the court fruſtrated his expectations, for the duke was expreſsly forbidden to take him out as his ſecretary. This cruel treatment irritated his temper; and with a view of giving importance to his oppoſition, he ſpent nearly 5000l. in various unſucceſsful efforts for obtaining a ſeat in parliament; and he was aided by the ducheſs-dowager of Marlborough in 1727 with the ſum of 1000l. for this purpoſe. His attempts failed; his affairs of courſe became deranged; and he involved himſelf in a variety of quarrels and law-ſuits, which entailed upon him diſtreſſes that diſgraced and embittered the cloſe of his life. In 1732, he publiſhed an hiſtorical work, entitled "Memoirs of the Life and Character of the late Earl of Orrery, and of the Family of the Boyles," which, whatever valuable information it may contain, does not bear the character of impartiality. It is needleſs to mention his other publications, which, though well received, are now forgotten, or to add that he contributed ſeveral papers to the "Craftſman," and that he eſtabliſhed a weekly pamphlet called the "Bee," which had no long duration. His reputation was ſunk very low; and a circumſtance occurred which totally ruined it. On the death of Dr. Matthew Tindall, the author of "Chriſtianity as old as the Creation," in the publication of which he was thought to have had ſome concern; a bequeſt to Budgell of 2100l. appeared in his will. This legacy, ſo diſproportionate to Tindall's circumſtances, ſo injurious to his nephew, the Rev. Nicholas Tindall, the tranſlator of Rapin, and ſo contrary to his known intentions and conduct, ſurpriſed thoſe who heard of it, and excited a ſuſpicion of unfair dealing, very reproachful to Budgell. The will was conteſted and ſet aſide. To this tranſaction, Pope, who has introduced Budgell into the Dunciad, and ſatirized him in ſeveral parts of his works, evidently alludes in one of his epiſtles:

"Let Budgell charge low Grub-ſtreet on my quill,
And write whate'er he pleaſe except my will."

At length, this unfortunate man, unable to ſtruggle any longer with his embarraſſed circumſtances and indelible diſgrace, adopted the reſolution, ſtrengthened by the pride of his temper, and his diſbelief of revelation, to put an end to his life; and on May 4th, 1737, he took a boat at Somerſet ſtairs, and having ordered the waterman to ſhoot the bridge, he threw himſelf overboard, with ſtones in his pockets, and immediately ſunk. He had previouſly attempted to perſuade a natural daughter to ſhare his fate; but ſhe, preferring a continued life to this ſhocking mode of terminating it, became afterwards an actreſs at Drury Lane theatre. On the bureau of Budgell was found a ſlip of paper, on which were written theſe words:

"What Cato did, and Addiſon approv'd,
Cannot be wrong."

But this charge againſt Addiſon is wholly groundleſs; for he attempted to obviate the ill effects that might be ſuppoſed to ariſe from Cato's example by a dying diſapprobation of his own conduct. Biog. Brit.

BUDGERONS, in *Geography*. See Boeseroons.

BUDGEROWS, in *Sea Language*, the denomination given to travelling boats, or pleaſure barges, uſed by the Europeans as well as by the principal natives in Bengal. On the outſide they are conſtructed like the Burs; but within, they are much better adapted for convenience. The ſpace from the middle to the ſtern is occupied by one or two apartments, having windows on the ſides, and from ſix to ſeven feet high; and ſome of them 14 feet wide: the ſternmoſt of them is the bed room. Theſe budgerows are of various ſizes; from 25 to 60 feet in length, and longer. They are rowed by a number of men, from 6 to 20, with oars, which are long poles, to the end of which a little oval board is nailed, in lieu of a leaf, and which do not ſtrike the water croſs-ways, but obliquely backwards. They are ſteered by a large paddle or oar, extending 10 feet from the ſtern; and forwards ſtands a maſt, upon which is hoiſted a ſquare ſail, when they go before the wind; and they have likewiſe a top-maſt with a ſquare top-ſail for fine-weather. When they have a ſide wind, they drive down athwart the ſtream, not having a keel or timber enough under water, as they are flat-bottomed, and draw ſcarcely a foot, or a foot and a half of water. Some of them draw from four to five feet. The Engliſh gentlemen in Bengal have much improved the budgerows, by introducing a broad flat floor, ſquare ſterns, and broad bows. They are thus rendered much ſafer, ſail near, and keep their wind; and there is no danger attending their taking the ground. Beſides, they are adapted for carrying more ſail. The motion acquired by the oars of a large budgerow hardly exceeds eight miles a day, at ordinary times. A gentleman in his budgerow is uſually attended by a "pulwah" for the accommodation of the kitchen, and a ſmall boat, called a "paunchway," for conveying him either on ſhore, or on board, as it often happens that the budgerow cannot come cloſe to the place where he wiſhes to land, or to embark.

BUDHA, in *Mythology*. See Boodh.

BUDHURS, or Buddaghs, in *Ichthyology*, a provincial name given by the Iriſh to a large ſort of trout that is found chiefly in the vaſt waters, *Lough-Neagh*, in Ireland. Theſe are ſometimes taken ot thirty pounds weight each.

The budhurs appear to be nothing more than the common trout, *Salmo Fario*, that have attained to this vaſt ſize, of which we have inſtances in other waters beſides that of Lough Neagh. A trout, to the full as large as the budhurs are in common, namely of twenty-four pounds weight, was captured very lately in the river Thames near Hampton. Don. Brit. Fiſh.

BUDIN, or Budyn, in *Geography*, a town of Bohemia, in the circle of Schlan; eight miles N. of Schlan.

BUDINGEN, a town of Germany, in the circle of the Upper Rhine, and county of Iſemburg; 10 miles E. N. E. of Frankfort on the Mayne.

BUDINI, probably the Budeni of Ptolemy, in *Ancient Geography*, a people placed by Herodotus in European Scythia, adjoining to the Sauromates. Theſe people were very numerous, and remarkable for their red hair and blue eyes. Their food was fleſh and milk. Herodotus ſays, that their principal city was Gélone, built in a wood, where temples were conſecrated to the gods of Greece, and in which were celebrated triennial feaſts in honour of Bacchus. The inhabitants of this city were of Greek origin, and their language was a mixture of Greek and Scythian. Of theſe Budini the Scythians demanded ſuccour for oppoſing the army of Darius.

BUDINUM, or Budinus, the ancient name of a mountain of European Sarmatia. Ptolemy.

BUDISSEN, in *Geography*. See Bautzen.

BUDLANIOW, a town of Poland, in the palatinate of Podolia; 36 miles N. W. of Kaminiec.

BUDNÆANS, in *Eccleſiaſtical Hiſtory*, a ſect of Poliſh Unitarians, ſo called from the name of their leader, Simon Budnæus. They not only denied all kinds of religious worſhip to Jeſus Chriſt, but aſſerted, that he was not begotten by any extraordinary act of divine power; being born, like other men, in a natural way. Budnæus, after having proſelyted a great number of perſons in Lithuania and Ruſſian Poland, was depoſed from his miniſterial functions in the year 1584, and publicly excommunicated, with all his diſciples; but afterwards abandoning his peculiar ſentiments, he was re-admitted to the communion of the Socinian ſect. Crellius aſcribes the origin of the above opinion to Adam Neuſer. Moſh. Eccl. Hiſt. vol. iv. p. 525.

BUDOA, or Budua, in *Geography*, a fortified ſea-port town of Dalmatia, ſubject to the Venetians; the ſee of a biſhop, ſuffragan of Antivari. It is ſeated between the gulf of Cattaro and the town of Dulcigno, on the coaſt of Albany. It was unſucceſsfully beſieged by the Turks in 1686. N. lat. 42° 12'. E. long. 19° 22'.

BUDRIO, a ſmall town of Italy in the Bologneſe, the vicinity of which produces large quantities of fine hemp; 10 miles N. of Bologna. N. lat. 44° 27'. E. long. 11° 35'.

BUDRUN, a fortified town of Aſiatic Turkey, in the province of Natolia, near the ſea coaſt, with a harbour in the gulf of Stanchio.

BUDSDO, in the *Hiſtory of Mythology*, one of the two principal ſects in the iſland of Japan, the other being denominated *Sinto*. The ſect of Budſdo was imported from Hindooſtan, and is ſuppoſed to be the ſame with that of Budha or Boodh, reported to have been born in Ceylon, about 1000 years before the birth of Chriſt. Paſſing through China and Corea, it has been mingled with foreign maxims, but the tenet of the metempſychoſis remains; wicked ſouls being ſuppoſed to migrate into the bodies of animals, till they have undergone a due purgation.

BUDUN, is the name of one of the Ceyloneſe gods: he is ſuppoſed to have arrived at ſupremacy, after ſucceſſive tranſmigration, from the loweſt ſtate of an inſect, through the various ſpecies of living animals. There have been three deities of this name, each of which is ſuppoſed to reign as long as a bird removes a hill of ſand, half a mile high, and ſix miles round, by a ſingle grain in a thouſand years. See Sakradawendra: ſee alſo Boodh.

BUDWEIS, or Budegowice, in *Geography*, a royal and well fortified city of Bohemia, in the circle of Bechin, ſeated on the river Moldaw, enjoying the ſtaple-rights of ſalt, and having in its vicinity mines of gold and ſilver; and, as it is ſaid, pearls, which are fiſhed for in the river Moldaw. It was erected into a biſhopric by the emperor, in 1787. The king of Pruſſia laid ſiege to it with 8000 men, under general Naſſau in 1744, and took it; but did not long retain it; 66 miles S. of Prague. N. lat. 42° 15′. E. long. 14° 19′.

BUDWIZ, a town of Moravia, in the circle of Znaym, 84 miles S.E. of Prague.

BUDZADGEH, a town of Aſiatic Turkey, in the province of Natolia; 40 miles N. E. of Iſnick.

BUDZIAC *Tartary*. See Bessarabia.

BUDZIENICZE, or Budzenice, a town of Lithuania, in the palatinate of Minſk; 56 miles W. of Rohaczow. N. lat. 52° 40′. E. long. 28° 20′.

BUECH, a river of France, which runs into the Durance, near Siſteron, in the department of the Lower Alps.

BUEIB, a town or village of Egypt, called the "Straits," ſeated on a mountain in the road of the pilgrims; 30 miles N. E. of Cairo.

Bueib, called the "Narrows," a town or village of Upper Egypt, ſeated on the weſt ſide of the Nile; 32 miles S. E. of Aſna or *Eſneh*.

BUELA, a town of Perſia, in the province of Koraſſan; about 313 miles N. W. of Herat. N. lat. 37° 40′. E. long. 57° 2′.

BUENAYRE. See Bonaire.

BUENA-VISTA. See Bonavista.

BUENE-VENTURA. See Bonaventure.

BUENOS Ayres, ſo called on account of the peculiar ſalubrity of its climate, a Spaniſh territory or vice-royalty of South America, eſtabliſhed as ſuch in 1776, is reckoned by Ulloa the fifth biſhopric belonging to the audience of Charcas. This name comprehends the whole country from the eaſtern and ſouthern coaſt of that part of America, to Cordova and Tucuman on the weſt, to Paraguay on the north, and on the ſouth to the ſea and the Terra Magellanica or Patagonia, the vertex of that triangular point of land which forms South America. This country is watered by the great river La Plata, firſt diſcovered in 1515, by Juan Diaz de Solis, who, with his two attendants, was maſſacred by the natives; and partly ſubdued, in 1526, by Sebaſtian Gabot. Buenos Ayres abounds with horned cattle and wild horſes, which find a ſhelter from the heat of the ſun, and an ample ſupply of food in the immenſe plain, called by the Spaniards "Pampas," which commences about 20 miles from the capital, and extends 100 miles weſtward to the foot of the mountains, and about 500 miles ſouthward towards Chili. This plain is wholly covered with very high graſs, and is for the moſt part uninhabited and deſtitute of trees. From the travels of Helms we learn, that the largeſt tamed ox is ſold for one piaſtre, or about 3s. 6d., and that a good horſe may be purchaſed for two piaſtres. The hides of theſe animals conſtitute a principal article of trade in this country. The rivers and ſea ſupply all kinds of fiſh; the country abounds with game; and fruits of every quarter of the globe grow here in the utmoſt perfection; ſo that with regard to the ſalubrity of the air and the various enjoyments of life, a finer country cannot be imagined. Although the climate is healthy and pleaſant, there is a great difference in the ſeaſons. In the ſummer the air is ſerene, and the exceſſive heat of the ſun is moderated by breezes which blow every morning. In the winter ſtorms often occur, with rain and dreadful lightning and thunder. The capital of this country is Buenos Ayres, and within its government are three other cities, viz. Santa Fé, Las Corientes, and Monte-video.

Buenos Ayres, *Nueſtra Senora de*, the capital of the country of the ſame name, and of the kingdom of La Plata, was founded by Don Pedro de Mendoza in 1535, who was at that time governor, on a ſpot called Cape Blanco, on the ſouth ſide of Rio de la Plata, adjoining to a ſmall river; from which the plain on which it ſtands, aſcends gently. Soon after its firſt eſtabliſhment, it was abandoned; but rebuilt in 1582, and erected into a biſhopric in 1620. It is ſaid to contain about 4000 houſes, and from 24 to 30 thouſand inhabitants, who are chiefly Spaniards and native Americans. It is well fortified and defended by a numerous artillery. Although the breadth of this city, like other towns ſituated on rivers, is not proportional to its length, its ſtreets are ſtraight and of a proper width. The principal ſquare is very large, and built near the ſmall river; and in the front of it is a caſtle, where the governor conſtantly reſides. The houſes, which were formerly conſtructed with mud walls, thatched with ſtraw, and very low, are now much improved; ſome being built with chalk, and others with brick, moſt of them tiled, and having one ſtory beſides the ground floor. The cathedral, which is the pariſh church for the greater number of the inhabitants, is a ſpacious and elegant ſtructure; and the chapter is compoſed of the biſhop, dean, archdeacon, and two canons. At the farther end of the city is another church appropriated to the Indians. Here are alſo ſeveral convents, and a royal chapel in the caſtle where the governor reſides. This is the great reſort of the merchants of Europe and Peru, who traverſe the country from hence by Cordova and Tucuman to Potoſi; and for the accommodation of travellers there is an uninterrupted poſt-road, with poſt-horſes and proper relays of horſes and carriages acroſs the continent to Peru. No regular fleet comes to this place; the whole intercourſe with Europe being carried on by 2 or 3 regiſter ſhips. The returns are chiefly gold and ſilver of Chili and Peru, ſugar, and hides. The contraband trade, however, has been found the moſt advantageous; and this has been principally carried on by the Portugueſe, who keep magazines for that purpoſe in thoſe parts of Brazil which lie neareſt to this country. The moſt valuable commodities are brought here to be exchanged for European goods; ſuch as the Vicugna wool from Peru, copper from Coquimbo, gold from Chili, and ſilver from Potoſi. From Corientes and Paraguay are conveyed hither tobacco, ſugar, cotton, thread, yellow wax, and cotton cloth; and from Paraguay, the herb ſo called, and ſo highly valued for tea, which is drank every where in South America by the higher claſſes, and which ſupplies a branch of trade, amounting, as it is ſaid, to a million of pieces of eight annually, wholly paid in goods, as no money is allowed to paſs here. The commerce between Peru and Buenos Ayres is chiefly for cattle and mules, to an immenſe value. This city is ſituated about 77 leagues from Cape Santa Maria, which lies on the north coaſt near the entrance of the river de la Plata; and its little river not having water ſufficient for ſhips of burden to come up to it, they anchor in one of the two bays on the ſame coaſt. That fartheſt to the eaſtward is called Maldonado, 9 leagues from the above cape, and the other named Monte-video from a mountain near it, and diſtant 20 leagues from the ſaid cape. The navigation to the city is dangerous for want of depth of water, and on account of ſhoals and rocks in the river, and the frequent recurrence of ſtorms. It is, therefore, uſual to anchor every night, and to have the ſhip's way ſounded by a pilot. Within 3 leagues of the town, the goods are removed on board ſome light veſſel; and wait for their cargoes, whilſt they are refitting at Icunado de Barragan, ſituated 7 or 8 leagues below. S. lat. 34° 35′ 26″. W. long. 58° 31′ 15″.

BUENTO, a town of Africa, in the kingdom of Monomotapa.

BUFETAGE, *bufetagium*, or *bufetaria*, a duty paid to the lord, for the drinking, or rather ſelling of wine in taverns.

The word is formed from *buvetage*, or *buveterie*, of the French *boire*, *to drink*. Du-Cange Gloſſ. Lat. tom. i.

BUFF, in *Commerce*, a ſort of leather prepared from the ſkin of the buffalo, or bubalus; which being dreſſed in oil, after the manner of ſhammy, or chamois, makes what we call *buff-ſkin*; anciently much uſed among the military men for a kind of coats or doublets; and ſtill retained by ſome of our grenadiers, as well as the French *gens d'armes*, on account of its exceeding thickneſs and firmneſs. It is alſo uſed for waiſt-belts, pouches, &c.

Buff-ſkin, or buff-leather, makes a very conſiderable article in the Engliſh, French, and Dutch commerce, at Conſtantinople, Smyrna, and along the coaſt of Africa.

The ſkins of elks, oxen, and other like animals, when dreſſed in oil, and prepared after the ſame manner as that of the buffalo, are likewiſe denominated buff, and uſed for the ſame purpoſes.—In France there are ſeveral conſiderable manufactories employed in the preparation of ſuch ſkins; particularly at Corbeil, Paris, and Rouen: their firſt eſtabliſhment is owing to the Sieur Jabas, a native of Cologne. The manner of preparation ſee under SHAMMY.

The ſkin of the American mooſe deer, when well dreſſed, makes excellent buff. The Indians make their ſnow-ſhoes of this ſkin. Their way of dreſſing it, which is reckoned very good, is thus: after they have haired and grained the hide, they make a lather of the mooſe's brains, in warm water, and, after they have ſoaked the hide for ſome time, they ſtretch and ſupple it. Phil. Tranſ. N° 368.

BUFF *river and bay*, in *Geography*, lie on the north-eaſt ſide of Jamaica; within which is Crawford's town, in St. George's pariſh, and county of Surry. N. lat. 18° 27′. W. long. 76° 32′.

BUFF. See BUFFLES.

BUFFA, ſee BUFFOON. See GIARDINI.

BUFFALMACCO, BUONAMICO, in *Biography*, an hiſtorical painter, was born at Florence in 1262, and was for ſome years a diſciple of Andrea Taffi. He poſſeſſed a ſingular talent for droll humour, and is ſaid to be the firſt who deviſed the uſe of a label drawn from the mouth of a figure for repreſenting that figure as ſpeaking; though ſentences wrote over the heads of figures had before been practiſed by Cimabue. He died in 1340. Pilkington.

BUFFALO, in *Zoology*. See BUBALUS.

BUFFALOE, in *Geography*, a townſhip of America, weſt of Suſquehannah river in Pennſylvania.

BUFFALOE, a river of America, in the Tenneſſee government, which runs S. W. into Tenneſſee river, in N. lat. 35° 10′.—Alſo, a water of the Ohio, which enters it at the ſouth bank, 60 miles above the mouth of the Wabaſh.

BUFFALOE *Creek*, a creek of North America in New York, connected with Niagara river near its mouth, oppoſite to lake Erie. The Seneca Indians have a town 5 miles from its mouth, which is able to furniſh 80 warriors. This creek is navigable 8 miles. N. lat. 42° 52′.

BUFFALOE *Lake*, a lake of North America, ſituate near Copper-mine river, in the country of the Copper Indians. N. lat. 66°.—Alſo a lake of North America, which receives the Beaver river, about 25 miles long, and from 2 to 10 wide. N. lat. 55° 55′. W. long. 108° 55′.

BUFFALOE *Lick*. See GREAT RIDGE.

BUFFALOE *Lowlands*, a tract of land, in Northumberland county, Pennſylvania, about 88 miles S. E. from Preſque iſle.

BUFFALOE'S *Bay*, lies within the point of the cape of Good Hope, acroſs which from point to point is a ledge of rocks continuing northward to the ſouth point of the entrance into Simon's bay, on the weſt ſide of Falſe bay.

BUFFALOE'S *Point*, lies above Rongufoula river, on the approach to Hughly river in Bengal, about half way in the bight between Jeſſore and Culpe rivers. Ships ſtop here which do not venture higher up into the Hughly river.

BUFFAROLO, a town of Italy, in the Milaneſe; 17 miles W. of Milan.

BÜFFEL, BÜFFELUS, BUFFLE. See BOS BUBALUS.

BUFFET, or BEAUFET, was anciently a ſmall apartment or receſs, ſeparated from the reſt of the room by means of ſlender wooden pillars, in which were depoſited china, glaſs-ware, &c. It was ſometimes called a cabinet. The term has ſince been ſometimes applied to a large table, more uſually called a "ſide-board," furniſhed with drawers, and ſerving either for convenience or ſhew, to receive plate, bottles, glaſſes, &c. In France, among perſons of diſtinction, the buffet is a detached room, decorated with pictures, exhibiting fountains, ciſterns, and vaſes, and commonly faced with marble or bronze. Among the Italians, the buffet, called "credenza," is incloſed within a baluſtrade as high as the elbow.

BUFFETTO, in *Geography*, a town of Swiſſerland, in the Valteline, ſeated on the ſouth ſide of the river Adda. N. lat. 46° 2′. E. long. 9° 50′.

BUFFIER, CLAUDE, in *Biography*, an ingenious writer, was born of French parents, in Poland, in 1661, and educated at Rouen. He entered among the Jeſuits at Paris in 1679, and afterwards fixed his reſidence at the college of the ſociety in that city. Beſides his engagements with the compilers of the Memoires de Trevoux, he wrote a great variety of works, ſome of which have been much eſteemed. But his moſt celebrated performance is his "Traité de premiers Verités, &c." or treatiſe of firſt truths, and of the ſources of our judgments; in which the opinions of philoſophers on the firſt notions of things are examined; Paris, 1724, 12mo. The principles of this work are the ſame with thoſe adopted and expanded in the writings of Drs. Reid, Oſwald, and Beattie, under the denomination of *Common* SENSE. His "Elements of Metaphyſics, made intelligible to all Readers," 1725, 12mo. is a work formed upon the ſame plan. He was alſo the author of a "French Grammar upon a new Plan," which was well received. His principal works have been collected and publiſhed under the title of "Cours des Sciences ſur des Principes nouveaux et ſimples, &c." or a courſe of ſciences on new and ſimple principles, for the purpoſe of forming the language, the underſtanding, and the heart, in the ordinary commerce of life, 1732, fol. This laborious and uſeful writer died in 1737. Nouv. Dict. Hiſt.

BUFFLES, or BUFF, in *Geography*, an iſland of Africa, on the ſouth coaſt of Benin, in the mouth of the river Camarones, or Camonoars.

BUFFON, GEORGE-LOUIS LE CLERC, *Count of*, in *Biography*, an eminent naturaliſt and writer, was the ſon of a counſellor of the parliament of Dijon, and born at Montbard in Burgundy, September the 7th, 1707. He manifeſted an early inclination to the ſciences, which diverted him from purſuing the profeſſion of the law, to which his firſt ſtudies at Dijon were devoted, and for which his father had deſigned him. The ſcience which ſeems to have engaged his earlieſt attachment was aſtronomy; with a view to which he applied with ſuch ardour to the ſtudy of geometry, that he always carried in his pocket the elements of Euclid. At the age of 20, he travelled into Italy, and in the courſe of his tour he directed his attention to the phenomena of nature more than to the productions of art: and at this early period he was alſo ambitious of acquiring the art of writing with eaſe and elegance. In 1728 he ſucceeded to the eſtate of his mother, eſtimated at about 12,000 l. a year; which by rendering his circumſtances affluent and independent, enabled him to indulge his taſte in thoſe ſcientific reſearches and literary purſuits, to which his future life was devoted. Having concluded his travels, at the age of 25, with a journey to England, he afterwards reſided partly at Paris, where, in 1739, he was appointed ſuperintendant of the royal garden and cabinet, and partly on his eſtate at Montbard. Although he was fond of ſociety, and by no means inſenſible to the attractions of the fair ſex, he was indefatigable in his application, and is ſaid to have employed 14 hours every day in ſtudy. We learn from the biographical anecdotes relating to him, collected by Herault de Sechelles, and publiſhed in Peltier's "Paris, pendant l'Année 1795, et l'Année 1796," that he would ſometimes return from the ſuppers at Paris at two in the morning, when he was young, and order a boy to call him at five; and if he lingered in bed, to drag him out on the floor. At this early hour it was his cuſtom, at Montbard, to dreſs, powder, dictate letters, and regulate his domeſtic concerns. At ſix he retired to his ſtudy, which was a pavilion called the tower of St. Louis, about a furlong from the houſe, at the extremity of the garden, and which was accommodated only with an ordinary wooden deſk and an arm chair. Within this was another ſanctuary, denominated by prince Henry of Pruſſia "the Cradle of Natural Hiſtory," in which he was accuſtomed to compoſe. On this retreat no one was ſuffered to intrude. At nine his breakfaſt, which conſiſted of two glaſſes of wine and a bit of bread, was brought to his ſtudy; and after breakfaſt he wrote for about two hours, and then returned to his houſe. At dinner he indulged himſelf in all the gaieties and trifles which occurred at table, and in a freedom of converſation, which obliged the ladies to withdraw. When dinner was finiſhed, he paid little attention either to his family or gueſts; but having ſlept about an hour in his room, he took a ſolitary walk, and then he would either converſe with his friends or ſit at his deſk, examining papers that were ſubmitted to his judgment. This kind of life he paſſed for 50 years; and to one who expreſſed his aſtoniſhment at his great reputation, he replied, "Have not I ſpent fifty years at my deſk?" At nine he retired to bed. In this courſe he prolonged his life, notwithſtanding excruciating ſufferings occaſioned by the gravel and ſtone, which he bore with ſingular fortitude and patience, to his 81ſt year; and retained his ſenſes till within a few hours of his diſſolution, which happened on the 16th of April, 1788. His body was embalmed, and preſented firſt at St. Medard's church, and afterwards conveyed to Montbard, where he had given orders in his will to be interred in the ſame vault with his wife. His funeral was attended by a great concourſe of academicians, and perſons of rank, and literary diſtinction; and a crowd of at leaſt 20,000 ſpectators aſſembled in the ſtreets through which the hearſe was to paſs. When his body was opened, 57 ſtones were found in his bladder, ſome of which were as large as a ſmall bean; and of theſe 37 were cryſtallized in a triangular form, weighing altogether 2 ounces and 6 drams. All his other parts were perfectly ſound; his brain was found to be larger than the ordinary ſize; and it was the opinion of the gentlemen of the faculty who examined the body, that the operation of lithotomy might have been performed without the leaſt danger; but to this mode of relief M. Buffon had invincible objections. He left one ſon, who fell a victim to the atrocities under Robeſpierre. This ſon had erected a monument to his father in the gardens of Montbard; which conſiſted of a ſimple column, with this inſcription;

"Excelſæ turri humilis columna
Parenti ſuo filius Buffon, 1785."

The father, upon ſeeing this monument, burſt into tears, and ſaid to the young man, "Son, this will do you honour." Buffon was a member of the French Academy, and perpetual treaſurer of the Academy of Sciences. With a view to the preſervation of his tranquillity, he wiſely avoided the intrigues and parties that diſgracefully occupied moſt of the French literati in his time; nor did he ever reply to the attacks that were made upon his works. In 1771 his eſtate was erected into a comté; and thus the decoration of rank, to which he was by no means indifferent, was annexed to the ſuperior dignity he had acquired as one of the moſt diſtinguiſhed members of the republic of letters.

Before we give an account of his works, we ſhall mention a few particulars relating to his perſon and character. His figure was noble and manly, and his countenance, even in advanced age, and notwithſtanding excruciating pains, which deprived him of ſleep ſometimes for 16 ſucceſſive nights, wa calm and placid, and exhibited traces of ſingular intelligence. Vanity, however, which ſeemed to have been his predominant paſſion, extended even to his perſon and to all his exterior ornaments. He was particularly fond of having his hair neatly dreſſed, and for this purpoſe he employed the friſeur, in old age, twice or thrice a day. To his dreſs he was peculiarly attentive; and took pleaſure in appearing on Sundays before the peaſantry of Montbard in laced clothes. At table he indulged in indelicate and licentious pleaſantries, and he was fond of hearing every goſſiping tale which his attendants could relate. In his general intercourſe with females he was as lax and unguarded as in his converſation. During the life of his wife, he was chargeable with frequent infidelities; and he proceeded to the very unwarrantable extreme of debauching young women, and even of employing means to procure abortion. His confidence, in the latter period of his life, was almoſt wholy engroſſed by a mademoiſelle Bleſſeau, who lived with him for many years. His vanity betrayed itſelf on a variety of occaſions in relation to his literary performances. Theſe were often the ſubjects of his diſcourſe, and even of his commendation. When he was recommending the peruſal of capital works in every department of taſte and ſcience, he added, with ſingular preſumption and ſelf-confidence; "Capital works are ſcarce; I know but five great geniuſes;—Newton, Bacon, Leibnitz, Monteſquieu, and *myſelf*." He was in the habit of reciting to thoſe who viſited him whole pages of his compoſitions, for he ſeemed to know them almoſt all by heart; but notwithſtanding his vanity, he liſtened to objections, entered into a diſcuſſion of them, and ſurrendered his own opinion to that of others, when his judgment was convinced. He expreſſed himſelf with rapture concerning the pleaſures accruing from ſtudy; and he declared his preference of the writings to the converſations of learned men, which almoſt always diſappointed him; and therefore he voluntarily ſecluded himſelf from ſociety with ſuch, and in company was fond of trifling. He maintained, however, an extenſive correſpondence with ſeveral perſons of rank and eminence ; and particularly with prince Henry of Pruſſia, and with the late empreſs of Ruſſia, who ably criticiſed ſome of his opinions, and favoured with great zeal in her dominions his reſearches in natural hiſtory. Of his literary vanity he gave evidence even towards the cloſe of life ; alleging that he feared not death, and that the hope of immortal renown was the moſt powerful of death-bed conſolations. He took great pains in forming the ſtyle of his writings ; and as compoſition was to him a difficult taſk, he repeatedly reviſed his works before he publiſhed them. Such was his attention to ſtyle, that he could not bear the leaſt deviation from accuracy and propriety in the uſe of language. “The ſtyle,” ſaid he, “is the man ; our poets have no ſtyle ; they are coerced by the rules of metre, which makes ſlaves of them.” To this circumſtance it was owing that he abandoned poetry which he attempted in his youth, and reſtricted himſelf to proſe. “Two things,” ſays he, “form ſtyle, invention and expreſſion. Invention depends on patience; contemplate your ſubject long; it will gradually unroll and unfold—till a ſort of electric ſpark convulſes for a moment the brain, and ſpreads down to the very heart a glow of irritation. Then are come the luxuries of genius, the true hours for production and compoſition—hours ſo delightful, that I have ſpent 12 and 14 ſucceſſively at my writing-deſk, and ſtill been in a ſtate of pleaſure. It is for this gratification, yet more than for glory, that I have toiled. Glory comes if it can, and moſtly does come. This pleaſure is greater if you conſult no books; I have never conſulted authors, till I had nothing left to ſay of my own.” Such was his regard to fame, that he deſtroyed every paper which he thought uſeleſs or unfiniſhed; and thus preſerved his reputation from being maſſacred by poſthumous publications.

Of the free ſentiments which he had imbibed with regard to religion, his works afford ample evidence. They ſufficiently indicate his attachment to the ſyſtem of materialiſm. “Religion,” ſaid he to one who was reading to him verſes on the immortality of the ſoul, “would be a noble preſent, if all that were true.” Notwithſtanding the licentiouſneſs of his religious opinions, as well as of his moral conduct, he conformed to the external rituals of religion, adding, as ſome will ſay, hypocriſy to his impiety; when he was at Montbard, he received the annual communion in his ſeignorial chapel, attended high maſs every Sunday, and diſtributed a louis weekly among different deſcriptions of pious beggars. “There muſt,” he ſaid, “be a religion for the multitude ; and we ſhould avoid giving offence.” “I have always,” he added, in converſation with a friend, “named the Creator ; but it is only putting, mentally, in its place, the energy of nature, which reſults from the two great laws of attraction and impulſe. When the Sorbonne plagued me, I gave all the ſatisfaction which they ſolicited ; it was a form which I deſpiſed, but men are ſilly enough to be ſo ſatisfied. For the ſame reaſon, when I fall dangerouſly ill, I ſhall not heſitate to ſend for the ſacraments. This is due to the public religion. Thoſe who act otherwiſe are madmen.” Thus, as he boaſts, he avoided ſharing the miſchievous attacks which Voltaire, Diderot, Helvetius, and others had made upon religion, whilſt, by the avowal of ſuch licentious ſentiments in converſation, and by the opinions circulated in his writings, he was perpetually ſapping its foundations, and counteracting every obligation of truth and integrity. But let us divert our attention from the principles and character of Buffon, which have been ſufficiently developed, and which no reflecting perſon can contemplate without diſguſt, to his works. In this view of him he appears with much greater advantage. His firſt publication was a tranſlation from the Engliſh of “Hales's Vegetable Statics,” in 1735 ; which was followed in 1740 by a tranſlation from the Latin of “Newton's Fluxions.” His “Theory of the Earth” was firſt publiſhed in 1744, which was included in his moſt comprehenſive celebrated work entitled “Natural Hiſtory, general and particular,” which commenced in 1749, and at its completion in 1767 extended to 15 vols. 4to, or 31 vols. 12mo. Supplements were afterwards added, amounting to ſeveral more volumes. In the anatomical part the author was aided by M. D'Aubenton ; but in all the other parts Buffon himſelf diſplays his learning, genius, and eloquence, and he alſo indulges his fancy in exploring and delineating the whole economy of nature. He begins with a theory of the earth, which, as well as the other planets, he ſuppoſes to have been originally a maſs of liquefied matter, daſhed out of the body of the ſun by the violent illapſe of a comet. He then covers it with ocean, from which he forms ſtrata by depoſition, and mountains by the flux and reflux of the tide. Subterraneous fires, eruptions, and earthquakes, produce other changes ; and the world we now inhabit is but the ruins of a former world. For a more particular account and examination of his theory, ſee EARTH and PLANETS. In his account of the population of the earth with living creatures, he inveſtigates the analogies between vegetable and animal life ; and in explaining the myſtery of animal generation, he allows ample range to his imagination in a variety of hypotheſes and conjectures. He conceives certain “living organic molecules,” of the ſame nature with organized beings, to exiſt equally in animal and vegetable matter ; and theſe, in the proceſs of nutrition, to be received into “internal moulds,” of which animal and vegetable bodies are formed, where they are aſſimilated into the ſame ſubſtance as the parts to which they are tranſmitted, and thus nouriſh them. When this nutritive matter ſuperabounds, it is detached from all parts of the body, and depoſited in a fluid form in one or more reſervoirs. This conſtitutes a prolific matter, which is ready for producing a new animal or vegetable, of the ſame ſpecies, when it meets with a proper matrix. The ſuppoſed ſeminal animalculæ are only theſe organic particles, which are ſimilar in both ſexes, but muſt unite in order to produce a new animal by the proceſs of generation. See GENERATION. Buffon's natural hiſtory of animals commences with that of man whom he traces from the cradle to the grave, through the developement and maturation of his bodily organs and mental powers, the nature and operation of his ſenſes, and the ſeveral varieties of his ſpecies, introducing and intermixing in the reſearch many curious diſcuſſions. He then inveſtigates and unfolds the nature of brute animals in general ; and marks the diſtinction between them and men, by denying them a ſoul, and a memory, properly ſo called, and making all their actions to ſpring from external impreſſions. The claſs of quadrupeds occupies the whole remainder of this firſt work. To his hiſtory of quadrupeds he added, in 1776, a ſupplementary volume, which, beſides an ingenious diſſertation on mules, contains the hiſtory and figures of ſeveral new animals, and valuable additions to moſt of thoſe deſcribed in the original publication. Diſdaining the arrangements of ſyſtematic naturaliſts, he has rejected all the received principles of claſſification, and has thrown his ſubjects into groups, laxly formed from general points of reſemblance. Not content with deviating from eſtabliſhed modes of diſtribution, he ridicules the authors of ſyſtematic arrangements, and particularly the late ingenious and indefatigable Linnæus, whoſe zeal and labours in inveſtigating and claſſing natural objects entitle him to the higheſt applauſe. It is hardly neceſſary to remark, that he has adapted his ſtyle to the particular ſubjects of his diſcuſſion. Whilſt the mere enumeration of facts, or deſcriptions of the figure, dimenſions, and colour of animals,

mals, admit of no other ornament than that of perſpicuity; topics of philoſophy and argument require a higher and more figurative expreſſion; and addreſſes to the paſſions and finer feelings of men, allow full ſcope to the exerciſe of genius and of taſte. Of theſe different ſpecies of writing, the works of Buffon afford numerous examples. It has been obſerved, however, that his ſtyle occaſionally riſes above the level of his ſubject; and this is particularly the caſe, when he is painting in glowing colours the manners and habits of the lion, the horſe, the elephant, and others of his favourite ſubjects. By the indulgence of this paſſion for high painting, he has been betrayed into a deviation from the limits of ſimple truth, and has been led to wander into the regions of fancy. In particular and minute obſervation he excels, and by his indefatigable reſearches he has made a very copious addition to the treaſure of authenticated facts. In ſome caſes he has been miſled by an undue attachment to theory, as well as by the ambition of diſtinguiſhed eloquence. “On various topics,” ſays a judicious biographer, “he had formed general theorems, which he was inclined to ſupport againſt exceptions by denying or neglecting the inſtances produced on the other ſide. Farther, he not unfrequently gives the mere inferences from his opinions as if they were known and tried facts; thus dangerouſly confounding hypotheſis with that experience which is the only true baſis of all natural knowledge. He often attributes more to the operation of certain cauſes, ſuch as change of climate, domeſtication, and the like, than ſober reaſon can warrant; and even, according to the tenor of his argument, ſometimes aſcribes oppoſite effects to the very ſame cauſe. Theſe blemiſhes materially leſſen the confidence with which his work can be uſed as authority, and later inquirers are continually detecting errors in his ſtatements. Yet the great maſs of matter will probably always remain unimpeached; and certainly no writer has ever done ſo much to render natural hiſtory entertaining, and to elevate its rank among the objects on which the human intellect is employed. In one point, however, he will by many be thought to have derogated from the true dignity and value of his ſubject. He is every where the enemy of the doctrine of final cauſes, and ſubſtitutes, to a deſigning and benevolent author, the fortuitous operations of a certain unconſcious “Nature,” which as often exhibits examples of blunder and defect, as of ſkilful and happy contrivance.” “Studiouſly to overlook ſo beautiful a part of the economy of things, as the adaptation of means to ends, is ſurely as inconſiſtent with the philoſophical as the religious ſpirit,” which may, poſſibly, in ſome inſtances, have betrayed him into error. This “fault is aggravated in Buffon by the pleaſure he occaſionally takes in declaiming upon the defects of nature, in a ſtrain which would ſeem to impute malignity of intention to the Author of being, and which he appears to have derived from the ſhallow philoſophy of his predeceſſor Pliny. The moral reader of Buffon will likewiſe be frequently offended with the groſſneſs of his deſcriptions in all points relative to ſex: in which he not only indulges in an anatomical plainneſs of language, but, what is much worſe, adopts a ſtudied ſenſualiſm, the object of which is to exalt the value of ſexual gratifications, and make a propenſity to them one of the indications of nobleneſs of nature.”

After the completion of his hiſtory of quadrupeds in 1767, Buffon was interrupted in the progreſs of his labours by a ſevere and tedious indiſpoſition; and therefore the two firſt volumes of his “Hiſtory of Birds” did not appear till the year 1771. In the compoſition of the greateſt part of theſe, he was indebted to the labours of M. Gueneau de Montbeillard, who adhered ſo cloſely to Buffon’s mode of thinking and of expreſſion, that the public could not perceive any difference. The four ſubſequent volumes were the joint production of both writers: and each author prefixed his name to his own articles. The three remaining volumes were written by Buffon himſelf, with the aſſiſtance of the abbé Bexon, who formed the nomenclature, drew up moſt of the deſcriptions, and communicated ſeveral important hints. The work was completed in 1783, but on account of the much greater number of ſpecies of birds than of quadrupeds, the want of ſyſtematic arrangement is more to be regretted in this than in the other hiſtory. A tranſlation of Buffon’s “Natural Hiſtory,” by Mr. Smellie of Edinburgh, compriſed in 8 vols. 8vo. was publiſhed in 1781; to which a 9th volume was added in 1786, containing a tranſlation of a ſupplementary volume of Buffon, and conſiſting chiefly of curious and intereſting facts with regard to the hiſtory of the earth. The tranſlator has omitted the anatomical diſſections and menſurations of M. D’Aubenton, which greatly enhanced the bulk, as well as the price of the original, and which the author himſelf had omitted in the laſt Paris edition of his performance. There are likewiſe ſome other omiſſions, which are not very important; reſpecting the method of ſtudying natural hiſtory, methodical diſtributions, and the mode of deſcribing animals. Theſe omiſſions have been amply compenſated by the tranſlator’s addition of ſhort diſtinctive deſcriptions to each ſpecies of quadrupeds, of the figures of ſeveral new animals, and of the ſynonyms, as well as the generic and ſpecific characters given by Linnæus, Klein, Briſſon, and other naturaliſts, together with occaſional notes. A tranſlation of Buffon’s “Hiſtory of Birds,” in 9 vols. 8vo. with notes and additions, was alſo publiſhed by Mr. Smellie in 1793.

In 1774, Buffon began to publiſh a “Supplement” to his Natural Hiſtory, conſiſting of the “Hiſtory of Minerals.” The firſt volume contains an account of his BURNING *glaſs*, for which, ſee that article. Theſe ſupplemental volumes, of which the 5th, in 4to., appeared in 1778, contain many curious and valuable experiments, as well as much theory, too lax for the rigour of modern ſcience. The concluding volume may be conſidered as a kind of philoſophical romance. It comprehends what the author fancifully denominates the “Epochas of Nature,” or thoſe great changes in the ſtate of the earth which he ſuppoſes to have ſucceſſively reſulted from his hypotheſis of its original formation out of the ſun. Of theſe epochas he enumerates ſeven, of which ſix are ſuppoſed to have been previous to the creation of man. In the deſcription of theſe epochas, as to both their cauſes and effects, the author has indulged the ſport of fancy, and formed a ſort of fairy tale, which he has contrived to render amuſing and inſtructive. Such as we have recounted are the principal works of this great author, which have been collected and publiſhed in 35 vols. 4to. and 62 vols. 12mo.; and of the whole or parts of which new editions occaſionally appear. After he had completed his “Hiſtory of Minerals,” he had formed a deſign of compoſing the “Hiſtory of Vegetables;” but this project was defeated by his death. Several of the ſubjects that occur in his “Natural Hiſtory,” and its ſupplements, have been diſcuſſed in ſeparate memoirs, and may be found in the Memoirs of the Royal Academy of Sciences at Paris, for the years 1737, 1738, 1739, 1741, and 1742. Some account of them will be found in different articles of this dictionary. See particularly ACCIDENTAL *Colours*, HEAT, MAGNETISM, TIMBER, &c. Nouv. Dict. Hiſt. Encyclopedie Phyſique, tom. i. Lett. de Herault Sechelles, *ubi ſupra*. Smellie’s Tranſlations. Gen. Biog.

BUFFONI, in *Ornithology*, a ſpecies of FALCO, called by

Latham the *Cayenne ring-tail*, as being an inhabitant of that part of the world. It is ſpecifically diſtinguiſhed by having the cere blue; legs yellow; body above dark brown, beneath reddiſh-buff; eye-brows yellow; tail faſciated with pale, and duſky brown. Gmel. &c. Length of this bird two feet.

BUFFOON, a droll, or mimic, who diverts the public by his pleaſantries and follies. Menage, after Salmaſius, derives the word from *buffo;* a name given to thoſe who appeared on the Roman theatre with their cheeks blown up; that, receiving blows thereon, they might make the greater noiſe, and ſet the people a laughing. Others, as Rhodiginus, make the origin of buffoonery more venerable; deriving it from a feaſt inſtituted in Attica, by K. Erictheus, called BUPHONIA.

Buffoons are the ſame with what we otherwiſe find denominated *ſcurræ, gelaſiani, mimilogi, miniſtelli, goliardi, joculatores, &c.* whoſe chief ſcene is laid at the tables of great men. Gallienus never ſat down to meat without a ſecond table of buffoons by him. Tillemont alſo renders PANTOMIMES by buffoons; in which ſenſe he obſerves, the ſhews of the buffoons were taken away by Domitian, reſtored by Nerva, and finally aboliſhed by Trajan. Crevier's Hiſt. of the Emperors, vol. vii. p. 45.

BUFFY COAT, or ſize of the blood, in *Medicine*. See BLOOD, *appearances of*.

BUFO, in *Entomology*, a ſpecies of BOMBYX, that inhabits Germany. The wings are yellowiſh, with a broad brown band, and yellow ſpots. Fabr.

BUFO, a ſpecies of CURCULIO, that inhabits Siberia. The colour is fuſcous; wing-caſes ſlightly reticulated, with a white ſtripe in the middle. Fabr.

BUFO, in *Zoology*, the ſpecific name of the common toad, *rana bufo* of Linnæus, and other Latin writers. Gmelin adopts the conciſe deſcription of the Linnæan *Fauna Suecica*, "corpore lurido fuſcoque," for this ſpecies. But, beſides the body of the toad being lurid and fuſcous, the back is marked with tubercles, which ought likewiſe to be diſtinctly noticed in its ſpecific character. The deſcription given of it by Roeſel is not amiſs, "Bufo terreſtris, dorſo tuberculis exaſperato, oculis rubris." Hiſt. Ran.

Authors make three or four varieties of the common toad. The var. β of Gmelin, is *bufo calamita* of Laurenti; the back of this kind is olivaceous with an unequal, clear, yellowiſh-red, band down each ſide. γ, another variety, Laurenti deſcribes under the name of *bufo viridis*, the body being marked with confluent green ſpots, and warts: thoſe warts which riſe within the area of the green ſpots are of the ſame colour, while the reſt, which are ſituated in the ſpaces between them are red, upon a bicoloured ground. δ. *bufo obſtetricans* of Laurenti is diſtinguiſhed by being of a ſmaller ſize than either of the preceding. In Act. Pariſ. 1741, this laſt variety is deſcribed under the title of *bufo terreſtris minor*. Independently of theſe, which may be conſidered as permanent varieties of the common toad, it ſhould be obſerved, that different individuals exhibit a great diverſity in their general colours, markings, the ſize of the dorſal tubercles, and other particulars. The olivaceous hues with darker variations prevail moſt commonly. In the early part of ſummer they are ſometimes found with the ſhoulders and limbs marked with reddiſh ſpots, and the under parts of the limbs and body tinged with yellow.

The toad, ſays an ingenious writer, is the moſt deformed and hideous of all animals: the body is broad, the back flat, and covered with a pimply duſky hide, the belly large, ſwagging, and ſwelling out, the legs ſhort, and its pace laboured and crawling; its retreat gloomy and filthy: in ſhort, its general appearance is ſuch as to ſtrike one with diſguſt and horror. Yet it is ſaid by thoſe who have reſolution to view it with attention, that its eyes are fine; to this it ſeems that Shakſpeare alludes, when he makes his Juliet remark, "Some ſay the lark and loathed toad change eyes," as if they would have been better beſtowed on ſo charming a ſongſter, than on this raucous animal. Pennant. The eyes are uncommonly beautiful, being ſurrounded by a reddiſh gold coloured iris, and the pupil, when in a ſtate of contraction, appearing tranſverſe.

Rana bufo and its varieties appear to be confined excluſively to the European continent. It inhabits woods, gardens, fields, and damp ſhady places, and frequently makes its way into cellars, or any obſcure receſſes in which it may occaſionally conceal itſelf; and where it may find a ſupply of food, or a ſecurity from too great a degree of cold. In the early part of ſpring, like others of this genus, it retires to the waters, where it continues during the breeding ſeaſon, and depoſits its ova or ſpawn in the form of double necklace-like chains or ſtrings, of beautifully tranſparent gluten, and of the length of three or four feet, in each of which are diſpoſed the ova in a continued double ſeries throughout the whole length, having the appearance of ſo many ſmall jet-black globules or beads. Theſe globules are, in reality, no other than the tadpoles, or larvæ convoluted into a globular form, and waiting for the period of their evolution, or hatching, which takes place in the ſpace of about fourteen or fifteen days, when they break from the ſurrounding gluten, and, like the tadpoles of frogs, ſwim about in the water, and are nouriſhed by various animalcules, gluten, leaves of aquatic plants, &c. When theſe have arrived at their full growth, the legs are formed, the tail gradually becomes obliterated, and the animals leave the water, and betake themſelves to the ſurface of the ground. This generally happens early in the autumn.

The time of their propagation is very early in the ſpring: at which ſeaſon the females are ſeen crawling about oppreſſed by the males, who continue on them for hours, and adhere ſo faſt as to tear the ſkin from the parts to which they ſtick. The number of females appears to be greatly diſproportionate to that of the males in general. It is aſſerted by Mr. Arſcott, a gentleman of Devonſhire who favoured Mr. Pennant with a circumſtantial account of a favourite toad kept for nearly forty years in his houſe, and a curſory hiſtory of the toads, that he has commonly known thirty males to one female: twelve or fourteen of the former he has ſeen clinging round a ſingle female at one time. But this is even far leſs remarkable than the obſervation of the late Mr. John Hunter, who aſſured Mr. Pennant, that during his reſidence at Belliſle, he had diſſected ſome hundreds of toads, and yet never met with a ſingle female amongſt them.

That the female toad receives the obſtetrical aſſiſtance of the male on ſome occaſions is a fact eſtabliſhed on the beſt authority. Mr. Demours, in particular, has given a full and accurate account of ſuch a circumſtance in the Memoirs of the French Academy, that deſerves attention. It has been more than once repeated by later writers, but cannot ſtill with propriety, be omitted in this place. The memoir is thus tranſlated by Dr. Templeman:

"In the evening of one of the long days in ſummer, Mr. Demours, being in the king's garden, perceived two toads coupled together at the edge of an hole, which was formed, in part by a great ſtone at the top.

"Curioſity drew him to ſee what was the occaſion of the motions he obſerved, when two facts, equally new, ſurpriſed him. The firſt was the extreme difficulty the female had in laying her eggs, inſomuch that ſhe did not ſeem capable of being delivered of them without ſome aſſiſtance. The ſecond was, that the male was mounted on the back of the female, and exerted all his ſtrength with his hinder feet in pulling out the eggs, whilſt his fore feet embraced her breaſt.

“ In order to apprehend the manner of his working in the delivery of the female, the reader muſt obſerve that the paws of theſe animals, as well thoſe of the fore feet, as of the hinder, are divided into ſeveral toes which can perform the office of fingers.

“ It muſt be remarked, likewiſe, that the eggs of this ſpecies of toads are included each in a membranous coat that is very firm, in which is contained the embryo: and that theſe eggs, which are oblong, and about two lines in length, being faſtened one to another by a ſhort, but very ſtrong cord, form a kind of chaplet, the beads of which are diſtant from each other about the half of their length. It is by drawing this cord with his paw, that the male performs the functions of a midwife, and acquits himſelf in it with a dexterity that one would not expect from ſo lumpiſh an animal.

“ The preſence of the obſerver did not a little diſcompoſe the male: for ſome time he ſtopped ſhort, and threw on the *curious impertinent* a fixed look that marked his diſquietneſs and fear; but he ſoon returned to his work with more precipitation than before, and a moment after he appeared undetermined whether he ſhould continue it or not. The female likewiſe diſcovered her uneaſineſs at the ſight of the ſtranger, by motions that interrupted ſometimes the male in his operation. At length, whether the ſilence and ſteady poſture of the ſpectator had diſſipated their fear, or that the caſe was urgent, the male reſumed his work with the ſame vigour, and ſucceſsfully performed his function.”

The hideous appearance of the toad, Mr. Pennant remarks, is ſuch as to have rendered it in all ages an object of horror, and the origin of moſt tremendous inventions. Ælian makes its venom ſo potent, that, baſiliſk-like, it conveyed death by its very look and breath; but Juvenal is content with making the Roman ladies who were weary of their huſbands, form a potion from its entrails, in order to get rid of the good man:

“ Occurrit matrona potens, quæ molle calenum
Porrectura viro miſcet ſitiente rubetam.” Sat. I.

This opinion begat others of a more dreadful nature; for in after times ſuperſtition gave it preternatural powers, and made it a principal ingredient in the incantations of nocturnal hags;

“ Toad that under the cold ſtone
Days and nights has, thirty-one,
Swelter'd venom ſleeping got,
Boil thou, firſt i' th' charmed pot.”
Shakſpeare.

But theſe, and other ſimilar fables of its venomous properties, Mr. Pennant obſerves in another place, have been long ſince exploded. The notion of its being a poiſonous animal, he conceives to have ariſen from its exceſſive deformity, joined to the faculty it has of emitting a juice from its pimples, and a duſky liquid from its hind-parts. That it poſſeſſes any noxious qualities, this writer was unable to bring forward proofs in the ſmalleſt degree ſatisfactory, though we have heard many ſtrange relations on that point. On the contrary, he knew ſeveral of his friends who have taken them into their naked hands, and held them long, without receiving the leaſt injury. It is well known that quacks have eaten them, and have beſides ſqueezed their juices into a glaſs and drank them with impunity. We may alſo ſay, that theſe reptiles are a common food to many animals, ſuch as buzzards, owls, Norfolk plovers, ducks, and ſnakes, neither of which, Mr. Pennant concludes, would touch them were they in any degree noxious.

It appears, however, from the experiments of Laurenti, that although the toad does not poſſeſs any poiſonous properties, it is not perfectly innoxious to the ſmaller tribe of animals. He found that ſmall lizards, on biting the common toad, were for ſome time diſordered and paralytic, and even appeared dead, though they completely recovered afterwards. He alſo obſerved, that dogs, on ſeizing a toad, and carrying it for ſome little time in their mouth, will appear to be affected with a very ſlight ſwelling of the lips, accompanied by an increaſed evacuation of ſaliva; the mere effect of the ſlightly acrimonious fluid which the toad, on irritation, exudes from its ſkin, and which ſeems at leaſt to be productive of no dangerous ſymptoms in ſuch animals as happen to taſte or ſwallow it. For a further account of this creature, ſee the articles Toad, and Rana.

BUFONIA, in *Botany*, ſaid by Dr. Smith, in Engliſh Botany, to have been ſo named by Linnæus after the celebrated count Buffon at the inſtigation of Sauvage, but with the invidious addition of the trivial name tenuifolia, to expreſs the *ſlenderneſs* of that great zoologiſt's claim to a botanical honour, and with the malicious omiſſion of one *f* in the generic name; whence it ſeems rather to be derived from the Latin word *Bufo* which ſignifies a toad. Ventenat actually adopts this etymology, and ſays the name was given it on account of its growing in *marſhy* places. Dr. Withering ſeems to have entertained the ſame idea when he called it toad-graſs. Gærtner, Schreber, Profeſſor Martyn, and Dr. Smith, have added the other *f*; but we have preferred the original ſpelling of Linnæus, which has been followed by moſt other authors. Linn. Reichard 180. Willd. 260. Gært. 1243. Juſſ. p. 300. Vent. vol. iii. p. 238. Claſs and order, *tetrandria digynia*. Nat. ord. *Caryophilleæ*, Juſſ. Vent.

Gen. Char. *Cal.* perianth four-leaved, erect, permanent: leaflets awl-ſhaped, keeled, membranaceous at the margin. *Cor.* petals four, oval, erect, equal, ſhorter than the calyx. *Stam.* filaments four, equal, the length of the germ. Anthers twin. *Piſt.* germ ovate, compreſſed; ſtyles two, the length of the ſtamens; ſtigma ſimple. *Peric.* capſule oval, compreſſed, one-celled, two-valved. *Seeds* two, oval, compreſſed with a ſwelling, convex on one ſide.

Eſſ. Char. *Calyx* four-leaved: *petals* four: *capſule* one-celled, two-valved, with two ſeeds.

Obſ. It is ſometimes deficient in the number of its ſtamens.

Species. 1. B. *tenuifolia.* Linn. Sauvage Monſ. 141. Ger. Prov. 400. Villars Dauph. 650. Hudſon H. Ang. 72. With. ed. 3. v. ii. p. 305. Smith H. Brit. v. i. p. 191. Gært. Tab. 129. f. 1. La Marck Pl. 87. f. 1. bad. Eng. bot. 1313. “ Stem panicled; flowers lateral and terminal; calyx ſtriated.” La Marck Illuſt. annual. *Stems* one or more, ſix or eight inches high, ſlender, erect, branched, round, leafy, ſmooth. *Leaves* erect, oppoſite, awl-ſhaped, three-ribbed connate, with a broad ſheathing baſe. *Flowers* white, peduncled, forming a ſpikelike panicle. *Calyx-leaves*, lanceolate, with a white edge. *Germen* ſuperior; *ſtyles* ſhort, diſtant; *ſtigmas* capitate. *Seeds* large and rough. A native of *dry* ſituations in Spain and the ſouthern provinces of France, which invalidates Ventenat's reaſon for deriving the generic name from bufo, a toad. Its chief claim to a place in the Engliſh Flora reſts on the authority of Plukenet, who has certainly figured it, and aſſerts that it was found by the ſea-ſide near Boſton in Lincolnſhire. On this ground Ray, who had ſeen it near

Montpellier, but not in England, admitted it into the ſecond edition of his Synopſis. Dillenius, in the third edition, ſays it was found alſo by Doody, on Hounſlow heath; but it has not ſince been diſcovered in either of thoſe places. 2. B. *perennis*, La. Marck Illuſ. Pl. 87. f. 2. "Stems branched and bearing flowers near the top; calyx leaves ſcarioſe at the edge" perennial. Peduncles longer than in the preceding ſpecies, forming a panicle without the appearance of a ſpike. Frequent in dry ſtony places in Auvergne.

BUFONIS, in *Zoology*, a ſpecies of Ascaris found in the inteſtines of the toad. The body of this kind is filiform, and the tail rounded. It is viviparous. *Goeze*.

Bufonis, a ſpecies of Tænia, or tape worm, that infeſts the inteſtines of the toad. The anterior part is roundiſh, behind filiform: head continued obtuſe: joints inveſted with a thin membrane, cylindrical, and oblong; margin ſilvery. *Gmel.* It is Tænia diſpar. of *Goeze*.

Obſ. The colour is white, and opake. Length of the worm ſix inches.

BUFONITA, in *Natural Hiſtory*, the toad *ſtone*. This is a foſſil that has been received not only among the liſt of native ſtones by the generality of authors, but even has held a place among the gems, and is ſtill worn in rings by ſome people: it is, however, as much an extraneous foſſil, as any animal remaining of that kind. There has been a ſtrong opinion in the world, that it was found in the head of an old toad; and that this animal voided it at the mouth, on being put on a red cloth.

The general colour of the bufonita is a deep, duſky brown; but it varies greatly in this reſpect in ſeveral ſpecimens, ſome of which are quite black, others of an extremely pale, ſimple brown, a cheſtnut colour, liver colour, black, grey, or whitiſh.

The bufonitæ are uſually found immerſed in beds of ſtone; and ſo little doubt is there of what they have originally been, *viz.* the petrified teeth of the *lupus piſcis*, or wolf fiſh, that part of the jaw of the fiſh has ſometimes been found, with the teeth petrified in it. See Grondeur.

The bufonitæ are ſaid to be cordial and aſtringent: many other fanciful virtues are aſcribed to them, which the preſent practice has rejected.

Dr. Kramer ſays, *pulvis bufonum*, when applied by way of poultice, with barley-flour and urine, is an excellent remedy for ripening peſtilential buboes, but that it has no ſuch effect in venereal, or any other than peſtilential buboes.

BUG, in *Entomology*. See Cimex.

Bug, in *Geography*, a river of Poland, which riſes in Red Ruſſia, and after a winding courſe through the centre of the kingdom, joins the Viſtula between Plocſko and Warſaw.

Bug-*caterpillar*, in *Entomology*, a name given by Bonnet to a ſmall kind of caterpillar, which ſmells exactly like a bug. This is not the only ſpecies which yields a ſenſible ſmell, for there is another which, at the time of the change into the chryſalis ſtate, emits a very pleaſant roſe-like ſcent; and their caſes, which are made of earth and ſilk, retain that ſmell for a long time after, even for ſeveral years. Many other inſects in this ſtate are known to have a peculiar ſcent. See Larva.

BUGA *marble*, in *Natural Hiſtory*, a name given by the Spaniards to a ſpecies of black marble, called by our artificers the Namur-marble, and known among the ancient Romans by the name of *marmor Luculleum*. It is common in many parts of Europe, and is uſed by the Spaniards in medicine as well as in building; the powder of it being ſaid to be an excellent ſtyptic, applied to freſh wounds.

BUGALET, in *Sea-language*, a ſmall veſſel with two maſts, uſed on the coaſt of Britanny. The foremaſt is very ſhort; and on each maſt is carried a ſquare ſail, and ſometimes a top-ſail over the main-ſail. Theſe veſſels have a bowſprit, and ſet one or two jibs.

BUGARONIE, Cape, in *Geography*, lies on the coaſt of Africa, in the Mediterranean, between Bugia bay on the weſt, and Cape Ferra on the eaſt.

BUGEAT, a town of France, in the department of the Correze, and chief place of a canton in the diſtrict of Uſſel; the town contains 629, and the canton 6011 inhabitants: the territory comprehends 307½ kiliometres and 12 communes.

BUGEE, in *Zoology*, a ſort of monkey mentioned by Ray in his Synopſis of quadrupeds. He tells us it is an Indian animal, and very rare even in India; that it is about the ſize of the beaver, and much of the ſame colour, but its tail and claws are wholly of the monkey kind. The ſpecies meant by Ray is altogether uncertain.

BUGELUGEY, the name of a large ſpecies of lizard, called by Cluſius, and ſome other authors, *Lacertus indicus*. This is *Lacerta Ameiva* of Gmelin. See Ameiva.

BUGEN, in *Geography*, a town of Germany, in the circle of Upper Saxony, and middle mark of Brandenburg, 10 miles W. of Frankfort on the Order.

BUGENHAGEN, or Bugenhagius, John, in *Biography*, a learned proteſtant divine, was born at Wollin in Pomerania, in 1485. From being a Catholic prieſt and a violent oppoſer of Luther's doctrines on their firſt promulgation, he became a convert and zealous propagator of them in the north of Germany. At Wittenberg, where he was miniſter, he was in high eſteem both for his learning and moderation; and his reputation induced Chriſtiern III. king of Denmark, to invite him for the purpoſe of ſettling the reformation in that kingdom. In this arduous taſk he gave great ſatisfaction. He died at Wittenberg in 1558. Of his various works the moſt worthy of notice are, "Commentaries on the Holy Scriptures," in ſeveral volumes, 8vo. a "Harmony of the Evangeliſts," and a "Hiſtory of Pomerania." Nouv. Dict. Hiſt. Moſheim, E. H. vol. iv. p. 304.

BUGEY, in *Geography*, a province or ſmall diſtrict of France, before the revolution, bordered on the eaſt by Savoy, on the ſouth by Dauphiny, on the weſt by Breſſe, and on the north by Franche Comté, and dependant on the government of Burgundy. It is about 20 leagues long, and 12 broad. Its capital is Belley. Before the time of Brennus, the Bugey, the tract of land denominated Gex, and part of Breſſe, formed a diſtinct country; which is termed by Polybius the "Celtic Delta," in alluſion to its triangular form. M. Peter I. I. Bacon-Tacon in his "Recherches ſur les Origines Celtiques, &c." Paris, 1799, traces the primitive hiſtory of Bugey to the firſt ages of the world, and thinks that its mountains retain their original form; being a continuation of mount Jura, which is itſelf cloſely connected with the Alps. He alſo endeavours to prove, that the worſhip of Iſis was, from time immemorial, eſtabliſhed in the Bugey; and that the topographical nomenclature of the county is ſtill in a manner entirely "Iſiac." He is inclined, likewiſe, to ſuppoſe, that the inhabitants of this diſtrict, 600 years before our æra, accompanied Belloveſus, from the firſt part of whoſe name is derived Belley, on his memorable expedition into Italy, where he founded the cities of Cremona, Vicenza, Aquileja, Pavia, Mantua, &c. From various concurring circumſtances this author alſo concludes, that the Rhodians, about 300 years before Chriſt, founded a colony on the Bugey, and on the authority of Pliny and Euſebius, he aſſumes that they gave their name to the river Rhone. He further ſuggeſts, from ſome names that occur in Bugey, that ſome intercourſe formerly ſubſiſted between this country and England; and that the Gauls peopled our iſland, and founded the cities of London and Dover.

BUGGANZ, Baka-Banya, or Bukanetz, a royal, free, and mine town of Hungary, in the Bath diſtrict, formerly famous for its gold and ſilver mines, but now ſubſiſting by tillage. It was ſacked and burnt by the Turks in 1664; 32 miles W. of Gran.

BUGGARD, a town of Denmark, in the iſland of Funen, 16 miles W. of Odenſe, or Ottenſee.

BUGGENHAGII, in *Ichthyology*, a ſpecies of cyprinus, diſtinguiſhed, according to Bloch, by having nineteen rays in the anal fin.

The length of this fiſh is about twelve or fourteen inches: the body is of a blackiſh colour above; compreſſed on the ſides, and ſilvery ſcales large; fleſh white. This ſort is found in the lakes of Germany and Sweden.

BUGGERS, *Bulgarii*, anciently ſignified a kind of heretics, otherwiſe called *Paterini*, *Cathari*, and *Albigenſes*.

The word is formed of the French *Bougres*, which ſignified the ſame, and that from *Bougria* or *Bulgaria*, the country where they chiefly appeared.

The Buggers are mentioned by Matthew Paris, in the reign of Henry III. under the name of *Bugares*. *Circa dies autem illos invaluit hæretica pravitas eorum qui vulgariter dicuntur* Paterini & Bugares, *de quorum erroribus malo tacere quam loqui.*

Bugger, or Buggerer, came afterwards to be uſed for a Sodomite; it being one of the imputations laid, right or wrong, on the Bulgarian heretics, that they taught, or at leaſt practiſed, this abominable crime. Caſen. Orig. p. 27. Menag. Orig. p. 114. Trev. Dict. Univ. tom. i. p. 1149. voc. *Bougre.* Du-Cange, Gloſſ. Lat. tom. i. p. 637. voc. *Bulgari.*

Bugger, *Bulgarius*, is alſo a denomination given to uſurers, a vice to which the ſame heretics are ſaid to have been much addicted. Du-Cange, Gloſſ. Lat. tom. i. p. 637.

BUGGERY, in our *Laws*, ſignifies the crime of ſodomy; it is ſaid to have been introduced into England by the Lombards, by whom it is uſually ſuppoſed to have been borrowed from the *Bougres*, or *Bulgarians*. Sir Edward Coke defines buggery, *carnalis copula contra naturam, et hoc per confuſionem ſpecierum* (*viz.* by a man's or woman's coupling with a brute beaſt) *vel ſexuum*, by a man's having to do with a man, or a woman with a woman.

The delicacy of the Engliſh law treats this crime, in its very indictments, as not fit to be named, "*peccatum illud horribile, inter Chriſtianos non nominandum.*" Rot. Parl. 50. Edw. III. n. 58. A ſimilar taciturnity was obſerved by the edict of Conſtantius and Conſtans. Cod. 9. 9. 31.

This crime the voice of nature and of reaſon, and the expreſs law of God (Lev. xx. 13. 15.) determine to be capital. Of this we have a ſignal inſtance long before the Jewiſh diſpenſation, in the deſtruction of two cities by fire from heaven; ſo that this is an univerſal, not merely a provincial precept. Our ancient law in ſome degree imitated this puniſhment, by commanding ſuch miſcreants to be burnt to death (Brit. c. 9.); though Fleta (l. i. c. 37.) ſays, they ſhould be buried alive; either of which puniſhments was indifferently uſed for this crime among the ancient Goths. Stiern. de jure Goth. l. 3. c. 2. But now the general puniſhment of all felonies is the ſame, namely by hanging: and this offence (being in the times of popery only ſubject to eccleſiaſtical cenſures) was made felony without benefit of clergy by ſtatute 25 Hen. VIII. c. 6. revived and confirmed by 5 Eliz. c. 17. And the rule of law is, that if both are arrived at years of diſcretion, *agentes et conſentientes pari pœna plectantur.* 3 Inſt. 59. If the perſon on whom it is committed be a boy under the age of diſcretion (generally reckoned at fourteen), it is then felony only in the agent. All perſons preſent, aiding and abetting in this crime, are principals; and the ſtatutes make it felony generally. There may be acceſſaries before and after the fact; but they are not, like principals, excluded from benefit of clergy. 1 Hale's Hiſt. P.C. 670. In every indictment for this offence, there muſt be the words, "*rem habuit veneream et carnaliter cognovit*, &c." By the articles of the navy (art. 29. ſtat. 22 Geo. II. c. 33.), this crime committed by any perſon in the fleet, is puniſhed with death by the ſentence of a court-martial. Buggery is uſually excepted out of our acts of general pardon. This "crime againſt nature," ſays judge Blackſtone (vol. iv. p. 215.), ought to be ſtrictly and impartially proved, and then as ſtrictly and impartially puniſhed. But it is an offence of ſo dark a nature, ſo eaſily charged, and the negative ſo difficult to be proved, that the accuſation ſhould be clearly made out; for, if falſe, it deſerves a puniſhment inferior only to that of the crime itſelf. Threats of charging perſons with this crime, or actual accuſations, are methods to which the profligate frequently recur for the purpoſe of extorting money, which is an act of felony.

BUGGESSES, in *Geography*. See Boni, and Bougineſe.

BUGIA, or Boujeiah, a large ſea-port town of Africa, in the kingdom of Algiers, and province of Conſtantina. It is built upon the ruins of a large city, the ſuppoſed Saldæ of Strabo, conſtructed by the Romans at the foot of a high mountain that looks towards the north-eaſt: a great part of the walls runs up to the ſummit of the mountain, where is a caſtle that commands the place, beſides two others at the bottom, built for a ſecurity to the port. It is one of the garriſoned towns of the kingdom, where three ſuffrahs continually reſide; but though the garriſon conſiſts of from two to three hundred men, it is not ſufficient to overawe and prevent the depredations of the Kabyles, who diſturb the town on every market-day, and are guilty of unſufferable rapine and barbarity. The town is watered by a large river, called by Marmol and Dapper, "Huet el Quibir," or the "great river," which is ſuppoſed to be the "Naſava" of Ptolemy, as it diſcharges itſelf into the ſea a little to the eaſtward, after having received a great number of rivulets. The harbour, called by Strabo the port of Sarda, or rather Salda, is formed by a narrow neck of land, that runs out into the ſea; a great part of which was formerly faced with hewn ſtone. Over this was conducted an aqueduct for ſupplying the port with water, by diſcharging it into large baſons; but the well, aqueduct, and baſons are deſtroyed: and the tomb of Seedy Buſgree, one of the tutelar ſaints of the place, is the only thing remaining worth notice. Bugia is a populous place; and the inhabitants carry on a conſiderable trade in plough-ſhares, mattocks, and ſuch utenſils, which they manufacture of the iron ſupplied by the adjacent mines. The Kabyles likewiſe furniſh every market with great quantities of oil, wax, and dried figs, which are ſhipped off for the Levant, and ſometimes for Europe. They alſo ſupply ſoap and timber fit for building. N. lat. 36° 35′. E. long. 5° 20.

BUGIE, a ſea-port town of Egypt, on the weſt coaſt of the Red ſea, nearly oppoſite to Sidon, the port town of

Mecca, and about 37 leagues weſt of it. N. lat. 22° 15′. E. long. 38° 40′.

BUGINVILLÆA, in *Botany*, (named by Commerſon in honour of Bougainville, the celebrated French circumnavigator). Willd. 767. Juſſ. 91. Claſs and order, *octandria monogynia*. Nat. ord. *Nyctagineæ*, Juſſ. Gen. char. *Calyx* none. *Corol.* tubular, a little ſwelling at the baſe, and contracted about the middle, permanent, four-toothed. *Filaments* eight, inſerted on the receptacle ſhorter than the corolla. *Germen* ſuperior, oblong. *Pericarp* one-ſeeded.

Species, B. *ſpectabilis*, La Marck, Illuſt. Pl. 294. A beautiful evergreen ſhrub. *Stem* armed with recurved prickles placed a little above the axils of the leaves. *Leaves* alternate, petioled, roundiſh-ovate, acuminate, very entire, veined. *Panicle* terminal; peduncles three-flowered. *Flower* inſerted on the midrib of a roundiſh bracte, reſembling a leaf, and longer than the flower, ſeated on the common peduncle, and adhering to the bottom of the corolla. A native of Brazil, deſcribed and figured from a dried ſpecimen ſent by Commerſon.

BUGLANEH, in *Geography*. See Baglana.

BUGLAS. See *Iſland of* Negroes.

BUGLE. in *Botany*. See Ajuga.

Bugle, among *Sportſmen*, formed probably from the Saxon *bugen*, to bend, denotes a hunting-horn.

In *Heraldry*, the bugle-horn is generally borne ſtringed and garniſhed; which circumſtance muſt be mentioned in the blazon.

Bugle is alſo uſed for a ſhining bead of black glaſs.

BUGLIO, in *Geography*, a town of Swiſſerland, in the Valteline. N. lat. 46°. E. long. 9° 40′.

BUGLOSS, in *Botany*. See Anchusa.

Bugloss, *common blue vipers*. See Echium *vulgare*.

Bugloss, *cowſlips*. See Pulmonaria *officinalis*.

Bugloss, *wild vipers*. See Echium *Italicum*.

Bugloss, *ſmall wild vipers*. See Asperugo *procumbens*.

Bugloss, *ſea*. See Pulmonaria *maritima*.

BUGLOSSA, Brunſ.
Buglossa *Italica*. Trag.
Buglossa *longifolia*. Cord.
Buglossa *vulgaris*. Ger. Em.
See Anchusa *officinalis*.

Buglossa *urbana*. Cord. See Borago *officinalis*.

Buglossa *ſylveſtris minor*. Ray. Ger. Em. See Lycopsis *arvenſis*.

BUGLOSSUM, a genus inſtituted by Tournefort, the ſpecies of which have been diſtributed by Linnæus and his followers among the genera *lithoſpermum*, *anchuſa*, and *lycopſis*. It has been revived by Gærtner with the following eſſential character: "Calyx five-parted; corolla funnel-ſhaped, orifice cloſed with arched ſcales; ſtamens five; ſtyle one; nuts four, one-celled, perforated at the baſe.

Buglossum *orientale flore luteo*. Tourn. See Lithospermum *orientale*.

Buglossum *Samium fruteſcens*. Tourn. See Lithospermum *fruticoſum*.

Buglossum *Chium arvenſe*. Tourn. See Lithospermum *tenuiflorum*.

Buglossum *Germanicum*. Fuchſ.
Buglossum *ſylveſtre majus nigrum*. Bauh. Pin.
See Anchusa *officinalis*.

Buglossum *Creticum*. Boerh. See Anchusa *anguſtifolia*.

Buglossum *anguſtifolium minus*. Bauh. Pin. Moriſ. See Anchusa *anguſtifolia*.

Buglossum *foliis linguiformibus*. Hal. excl. Syn. See Anchusa *Italica*.

Buglossum *perenne magis ſativum*. Moriſ. See Anchusa *Italica*.

Buglossum *anguſtifolium majus*. Bauh. Pin. See Anchusa *Italica*.

Buglossum *vulgare majus*. Bauh. Hiſt. See Anchusa *Italica*.

Buglossum *Luſitanicum*. Tourn. See Anchusa *undulata*.

Buglossum *latifolium ſempervirens*. Bauh. Pin. Mor. See Anchusa *ſempervirens*.

Buglossum, Fuchſ. See Borago *officinalis*.

Buglossum *latifolium, borrago*. Bauh. Pin. See Borago *officinalis*.

Buglossum *ſylveſtre, caulibus procumbentibus*. Bauh. Pin. See Asperugo *procumbens*.

Buglossum *procumbens*. Moriſ. See Lycopsis *veſicaria*.

Buglossum *ſylveſtre majus*. Bauh. Pin. See Lycopsis *pulla*.

Buglossum *annuum humile*. Moriſ. See Lycopsis *variegata*.

Buglossum *ſylveſtre minus*. Bauh. Pin. See Lycopsis *arvenſis*.

Buglossum *Africanum*. Pluk. See Echium *fruticoſum*.

Buglossum *lanuginoſum*. Rumph. See Tournefortia *argentea*.

Buglossum *echioides*. Lob. See Picris *echioides*.

Buglossum *littoreum*. Rumph. See Scævola *lobelia*.

Buglossum *orientale anguſtifolium, flore parvo cæruleo*. Tourn. is quoted by Linnæus for his *lycopſis orientalis*, a ſpecies which he ſeems to have formed for it: as he gives no other ſynonym, and had probably never ſeen the plant. Willdenow refers it to his *anchuſa parviflora*, a new ſpecies introduced by himſelf, and deſcribed from a dried ſpecimen, with no ſynonym but this of Tournefort; and very inconſiſtently inſerts alſo the *lycopſis orientalis* of Linnæus, and the ſame ſynonym, without a comment. The plant of Linnæus is deſcribed with ovate leaves, that of Willdenow with linear ones; in other reſpects there is no inconſiſtence in the ſpecific characters.

BUGLOSSUS, in *Ichthyology*, one of the names of the common ſole, *pleuronectes ſolea*, which ſee.

BUGNON, in *Geography*, a town of France, in the department of the Lower Pyrenées, and diſtrict of Orthès, 1 league N.E. of Navarreins.

BUGUE, a town of France, in the department of the Dordogne, and chief place of a canton in the diſtrict of Sarlat, 4 leagues S.W. of Montignac. The town contains 2475, and the canton 8119 inhabitants; the territory includes 197½ kiliometres, and 12 communes.

BUGULA, in *Botany*. See Ajuga, and Cleonia.

Bugula *orientalis villoſa*. Tourn. See Ajuga *orientalis*.

Bugula *alpina maxima*. Tourn.
Bugula *folio maximo*. Boerh.
See Ajuga *alpina*.

Bugula *foliis anguloſis*. Hall.
Bugula *montana*. Riv.
See Ajuga *genevenſis*.

Bugula. Dod.
Bugula *flagilifera*. Hall.
See Ajuga *reptans*.

Bugula *foliis imis linearibus*. Hal.
Bugula *chamæpites*. Scop.
See Ajuga *chamæpitys*.

Bugula *odorata luſitanica*. Corn. Moriſ. See Cleonia *luſitanica*.

BUGULM, or Bugulminsk, in *Geography*, a town and diſtrict of Ruſſia, in the government of Ufa, ſeated on the Bugulm, a rivulet that falls into the Ik; 112 miles W. of Ufa.

BUGURUSLANK, a town of Ruſſia, in the government of Ufa, ſeated on the Kinel; 148 miles W.S.W. of Ufa.

BUGUTCHANI, a town of Siberia, 168 miles E. of Eniſeiſk.

BUHEL, or Buhl, a town of Germany, in the circle of Swabia, and margraviate of Baden, 6 miles S.W. of Baden-Baden.

BUHLITZ, a town of Germany, in the circle of Upper Saxony and Farther Pomerania.

BUI, a town of Ruſſia, in a diſtrict of the ſame name, pertaining to the government of Koſtroma, ſeated on the river Koſtroma, at its junction with the river Vara.

Bui, a river of Ruſſia, which joins the Kama near Mulevo.

BUIE, a ſtrong town of Iſtria, belonging to the ſtates of Venice, the reſidence of a governor; 9 miles S. of Capo d'Iſtria.

BUILDING, *Art of.* The art of building is, perhaps, the moſt ancient of all arts; clothing is rejected or diſpenſed with by ſome ſavages, and in ſome favoured climates the arts of procuring food are rendered almoſt unneceſſary by the unſolicited bounty of nature; but we are acquainted with no people that do not form dwellings, places of ſhelter and ſecurity during the night, of aſſembly to the family, and ſtorehouſes of the property, however trifling, that none are without. It is not even confined to man; birds, beaſts, and inſects have their architecture; but their modes, inſpired by inſtinct, are invariable as the operations of nature; to man alone is given the principle of improvement.

The forms and methods of building depend eſſentially on the nature of the materials furniſhed by the country, and the ſtate of ſociety among its inhabitants; and, accordingly, nations very remote in ſituation, and diſtant in time, have reſembled one another in theſe particulars. Vitruvius relates that the Colchians, in the kingdom of Pontus, where they abound in foreſts, fix trees in the earth cloſe together in ranks to the right and left, leaving as much ſpace between them as the length of the trees will permit; upon the ends others are laid tranſverſely, which encloſe the ſpace for habitation in the middle; then at the top the four angles are braced together with alternate beams, and the roof is alſo formed by beams laid acroſs from the extreme angles gradually converging, and riſing from the four ſides to the middle point at the top, and then covered over with boughs and loam. The interſtices which remain in the walls, on account of the coarſeneſs of the materials, are ſtopped with chips and loam. The reader will obſerve how accurately this paſſage deſcribes the log-houſes of the American back-ſettlers. On the other hand, the Phrygians (continues Vitruvius) who inhabit a champaign country, deſtitute of timber, ſelect little natural hills, excavate them in the middle, dig an entrance, and widen the ſpace within as much as the nature of the place will permit; above they fix ſtakes in a pyramidal form, and cover them with reeds or ſtraw, heaping thereon great piles of earth. This kind of covering renders them very warm in winter and cool in ſummer. The habitations of the Phrygians thus deſcribed, appear to reſemble very nearly the ſubterraneous dwellings of the Samoyedes and Greenlanders. The kind of cabin, however, moſt frequently found among barbarous nations, is of a conical ſhape, formed by branches of trees interlacing one another, and meeting in a point at the ſummit, their exterior ſurface being covered with reeds, or leaves, or clay. Such are the wigwams of the North American Indians, and the kraals of the Hottentots and Caffrees.

But to proceed to civilized nations. The edifices of the Egyptians, which are regarded as the earlieſt monuments of wrought ſtone, are alſo the moſt diſtinguiſhed in that method. The immenſe quarries of Egypt probably inſpired the taſte, as they furniſhed the materials, while the periodical overflows of the Nile facilitated their tranſport. Thus favoured by nature, the energetic induſtry of the ancient Egyptians delighted in every thing wonderful and gigantic; the pyramids, immortal as the country, proud tombs which have long outlived the memory of the mighty kings whoſe aſhes they contain; granite temples, extenſive as towns, and laboured as cabinets, temples which encloſe in their courts, or ſupport upon their roofs villages of the modern inhabitants; mile-long avenues of ſphinxes, coloſſal ſtatues, and obeliſks. The art of building, among the Egyptians, was reduced to the ſimpleſt principles; unacquainted with arches, the doorways and other openings were covered with ſolid lintels, and the temples roofed with maſſy ſlabs, the walls, columns, and entablatures were formed of ſtones of the largeſt ſize, perfectly wrought, and laid in horizontal courſes, without cement or ligatures; the walls were of enormous thickneſs, and generally diminiſhing upwards, with a regular ſlope, in the manner of fortifications. The paſſage within the great pyramid is roofed in a ſingular manner with courſes of ſtones projecting over one another, like inverted ſteps, till they meet at the ſummit; thus ſhewing a method of ceiling with ſtone which may be regarded as intermediate between the uſe of lintels and of arches. Some of the tombs alſo preſent examples of vaults hollowed in the ſolid rock, and of niches. So far, and, according to our preſent information, no farther did the Egyptians proceed towards the diſcovery of arches. But we expect with impatience the account to be publiſhed by the National Inſtitute of France, when accurate meaſurements, correct drawings, and minute reſearch, conducted under all the advantages of leiſure and protection, will replace the haſty ſketches and imperfect remarks of individuals, who, though deſerving of applauſe and gratitude for having done ſo much, under circumſtances of danger and diſcouragement, have left ſtill more to be deſired. The ſize of the maſſes of ſtone employed in theſe conſtructions is altogether aſtoniſhing, and diſplays mechanical ſkill and energy, which leave far behind all the ſimilar enterpriſes of modern nations. Thus, in the temple of Hermopolis, one of the leaſt of the remains, the columns are 9 feet 6 inches in diameter, the architrave is compoſed of five ſtones, each 23 feet long, and the frieze of as many; the only remaining ſtone of the cornice is in length 36 feet. Of the hundred columns of the portico of the temple at Karnac, the leaſt is in diameter 8 feet, and the greateſt 12½ feet. The two obeliſks at Luxor, of roſe-coloured granite, are ſtill 70 feet above the ground, and to judge by the depth to which the coloſſal ſtatues which accompany them are buried, we may reckon about 30 feet more concealed from the eye, making in all 100 feet for the height of theſe monuments. Their preſervation is perfect; the hieroglyphics with which they are covered are cut in deep and in relief at the bottom, and ſhew the bold hand of a maſter, and a beautiful finiſh. (Denon's Travels in Egypt.) But the account which Herodotus gives of the monolythic chapel of the temple of Latona, at Buttis, is the moſt extraordinary; it was 40 cubits in every dimenſion, and was covered by another ſingle ſtone, 40 cubits ſquare, and 4 cubits thick. The ſame hiſtorian alſo informs us, that this enormous load was brought on rafts from the iſland of Philöe to Buttis, a diſtance of 200 leagues. This is undoubtedly the greateſt weight that has ever been moved by the power of man.

The wonders of human induſtry alſo characterize the monuments of the ancient inhabitants of India; but their efforts were directed, almoſt excluſively, to excavation. The caves of Elephantina and Salſette, the ſculptured rocks of Mavalipuram, and, above all, the vaſt temples ſcooped in the granite mountains of Ellora, rival, in the incalculable labour of their execution, the works of the Egyptians.

The remains of Perſepolis retrace the ſtyle of Egypt; from whence it appears, that the Perſians received the art of building in wrought ſtone. Diodorus Siculus relates, that it was not till after the conqueſt of Egypt that they built the famous palaces of Suſa and Perſepolis, and that theſe great works were directed by Egyptian architects.

The ſame taſte for gigantic conſtructions and extraordinary works in large ſtones is found among nations who, without communication with thoſe already mentioned, muſt receive it from nature alone. When the Spaniards conquered Mexico and Peru, they remarked that the natives were accuſtomed to build edifices with large ſtones, perfectly wrought and jointed, and laid without mortar; they had alſo tranſported from great diſtances maſſes of extraordinary dimenſions. Stonehenge, and various works of the ſame nature, in our own country and on the continent, may alſo be mentioned as efforts of energetic conſtruction, which had preceded every thing of finiſh and ornament. Thus it ſhould appear that this mode of building has every where been adopted previous to that with ſmall ſtones and mortar.

The inhabitants of countries deprived of ſtone quarries ſupplied the deficiency by means of bricks. Theſe were at firſt uſed crude, being merely dried in the ſun, during a conſiderable time; but at length the manufacturers found the method by baking them to form bricks as ſolid and durable as ſtone. Of this material were built the walls of Babylon and the temple of Belus, the moſt ancient example of this mode of conſtruction which hiſtory records, and which were reckoned among the wonders of the world. We alſo learn that bitumen was uſed as cement in theſe buildings, which renders it probable that at this period the method of reducing calcareous ſtones into lime to form mortar was not known.

It is, however, to the diſcovery of lime, that we owe the durability and perfection of cementitious building. Bitumen forms a porous connection which the air diſſolves and the action of the ſun evaporates, while calcareous cements are capable of acquiring a hardneſs ſuperior to that of the generality of bricks and building ſtones.

The buildings of the Greeks were at firſt of wood and clay; but they ſoon ſubſtituted ſtone and marble to the beams and poſts which formed their original edifices; and theſe were ſo regular and beautiful, that they offered a model, which art never loſt ſight of in the moſt ſumptuous decorations. From this imitation aroſe the orders of architecture, and a reaſoned ſyſtem, which, aſſigning to every member its uſe and ſituation, preſerved its original form, and perpetuated the memory of the ancient art of building. The Greeks, favoured by nature with abundant quarries of marble and other building ſtones of the beſt quality, proceeded on the ſame ſimple principles of conſtruction which characterize the Egyptian monuments: large blocks of ſtone ſquared with mathematical accuracy, and laid without cement; openings covered with lintels, with a few exceptions of arches and vaults in the theatres and gymnaſia; pediment roofs frequently covered with marble tiles. The obſervations of Mr. Reverly, given in the preface to the third volume of Stewart's "Antiquities of Athens," deſerve tranſcription. "I ſhall add a few words on the conſtruction of the buildings of Athens, which have not been mentioned in this work. The temple of Minerva is an example of this important part of their architecture. The columns are all conſtructed of ſingle blocks in diameter, and in courſes of more than a diameter in height; the wall encloſing the cell of the temple, is formed of a ſingle courſe of marble blocks in thickneſs, ſhewing a face inſide and outſide, the vertical joints correſponding over each other, and in ſeventeen horizontal courſes, reckoning from the bottom of the architrave to the top of the upper ſtep, riſing to a height of thirty-three feet. The capitals conſiſt each of one ſingle block, 2, 9, 9, high, and the architrave lies upon them without any other precaution being taken to relieve the weight from the projecting edges of the abacus, than the moſt extreme accuracy in the two ſurfaces of the underface or ſoffit of the architrave, and the top of the abacuſes, to render them perfectly parallel. The architraves are compoſed of three blocks, from face to back, each extending from centre to centre of the columns, and each block alſo the whole height of the architrave, and of equal thickneſs. The frieze is in two courſes in height, and each courſe wants ſo much of being the whole thickneſs of the frieze, as allows the metope, with the ſculpture, which is cut on a thin ſlab, to lie againſt it. The triglyphs tail-in in one height, but do not go through. I obſerved that a triglyph, lying among the ruins, was ſo formed, that the back of the block was conſiderably narrower where it went into the frieze than the breadth of the triglyph, ſo that each extremity of the triglyph projected on to the face of the ſlab of the metope ſeveral inches, thus forming a rebate, which encloſed the metope. The cornice is in blocks, which are the width of one mutule and one ſpace, their ends forming a complete courſe on the inſide. The tympanum of the pediment is compoſed of one courſe of upright ſlabs, in the outſide face, with horizontal courſes behind them. The pavement, of which great part remains, is in ſquares of equal ſize, large and thick; the joints, as is the univerſal practice at Athens, are cut with the moſt mathematical preciſion, and are extremely difficult to diſcover in thoſe parts which have taken a dark tint." "The perfect ſtate in which theſe monuments remain, which have not been deſtroyed by violence, is one proof of the judgment with which they were conſtructed. The temple of Minerva would have been entire, except its timber roof, at this day, if a bomb had not been thrown into it by the Venetians, when it was uſed as the powder magazine of the Turks. The propylea, applied to the ſame purpoſe, was ſtruck by lightning, and blown up. The ſmall temple of Theſeus is almoſt as entire as when it was firſt erected. Even ſo ſmall a building as the Choragic monument of Liſicrates is now entire, a circumſtance ariſing chiefly from the great judgment ſhewn in its conſtruction, by erecting it with large blocks, and conſolidating the whole with a roof wiſely made of one ſingle piece of marble."

The erection of porticos required a frequent employment of very conſiderable blocks, and accordingly implied great ſkill in the art of tranſporting and elevating theſe maſſes. Vitruvius celebrates the ſimple and ingenious method practiſed by Cteſiphon, in conveying the ſhafts of the columns of the temple of Diana at Epheſus from the quarries, which were in ſingle ſtones, ſixty feet long; theſe, by means of axle-trees, adapted at each end, were made to revolve in the manner of a garden-roller.

The ancient Etruſcans have left monuments of the ſame taſte in the art of building: however, it is to them that is generally aſcribed the method of building with ſmall ſtones and mortar, at leaſt, it is in the country which they inhabited, that are found the moſt ancient veſtiges of this mode of conſtruction. This method was carried to perfection by the Romans, who were alſo probably the inventors of domes. Their firſt temples were round and vaulted, as thoſe of Quirinus, Romulus, Faunus, Cybele, Veſta, &c. Coſſutius was the firſt Roman architect who built after the manner of the Greeks, about

200 years before the Chriſtian era. From this period, though the Romans adopted the Grecian architecture, they did not reject their original mode of conſtruction. Their moſt conſiderable edifices are built with pebbles and rubble ſtones, grouted in mortar, with the arches and angles and facings of brick, or ſmall rubble ſtones ſquared, and ſtrengthened at intervals, with regular bonding courſes of ſtone or brick running through the whole thickneſs. The walls, ſo built, were generally incruſted with ſtucco or marble. This method of building is much more expeditious and economical than conſtructions of wrought ſtone, which occaſion a conſiderable waſte of materials, extraordinary labour in dreſſing and ſquaring, and neceſſitate great expence in removing and elevating. By this method the Romans, employing all kinds of workmen, and materials to the ſmalleſt fragments, were enabled to raiſe the prodigious number of edifices which ſurpaſs, in extent, the monuments of any other people.

Vitruvius deſcribes the different kinds of wall uſed in his time in this manner. The ſorts of walls are the *reticulated*, which is now generally uſed, and the ancient, which is alſo called the *incertain*. Of theſe two, the reticulated is the handſomeſt; but the joints are ſo ordered, that in all parts the courſes have an infirm poſition; whereas, in the incertain, the materials reſt firmly one upon the other, and are interwoven together, ſo that they are much ſtronger than the reticulated, though not ſo handſome. Both ſorts are formed of very ſmall pieces, that the walls, being ſaturated with mortar, may endure the longer; for the ſtones being of a porous and ſpongy nature, abſorb the moiſture from the mortar, and when there is abundance of mortar, the wall having more humidity, will not ſo ſoon decay, but will, on that account, be rendered more durable; for as ſoon as the humidity is extracted from the mortar by the ſuction of the ſtones, then the lime and ſand ſeparating, the cement is diſſolved, and the mortar, no longer uniting the materials, the walls ſoon become ruinous. This may be obſerved in ſome tombs near the city, which are built with marble, or hewn ſtone, and the internal parts rammed with rubble ſtone; the mortar being, by length of time, drained of its humidity by the ſuction of the ſtones, and the union of the joints being diſſolved, they ſeparate, and fall to ruin. To avoid this error, (Vitruvius proceeds), the middle ſpace muſt be ſtrengthened with abutments of the red hewn ſtone, or bricks, or common flints built in walls two feet thick, and bound to the front with cramps. Another ſort, is that called by the Greeks *emplecton*, which (ſays Vitruvius), is alſo uſed by our villagers. The faces of the ſtones in this kind are ſmooth, the reſt is left as it grows in the quarry, being ſecured with alternate joints and mortar; and our artificers quickly raiſing a ſhell, which ſerves for the faces of the wall, fill the middle with rubble and mortar. But the Greeks do not build in that manner; they not only build the facing courſes regularly, but alſo uſe alternate joints throughout the whole thickneſs, not ramming the middle with rubble, but building it the ſame as the face: beſides this, they diſpoſe ſingle pieces, which they call *diatonos*, in the thickneſs of the wall, extending from one face to the other, which bind and exceedingly ſtrengthen the walls.

The works in wrought ſtone of the Romans, were, as well as thoſe of the Greeks, conſtructed without cement; but they uſed cramps and ligatures of iron and bronze in extraordinary profuſion. It is remarked by Mr. Wood, in deſcribing the great temple of Balbec, probably a work of Antoninus Pius, that "the ſhafts of theſe columns conſiſt of three pieces, joined moſt exactly without cement, which is uſed in no part of theſe buildings, and ſtrengthened by iron pins received into a ſocket worked in each ſtone. Moſt of the baſes had two ſuch ſockets, one circular and another ſquare, correſponding to two others of the ſame ſhape and dimenſions in the underpart of the ſhaft. By meaſuring ſome of the largeſt of theſe, which were circular, we found the iron pin which they received muſt have been a foot long, and above a foot in diameter. When we obſerved, by finding ſuch ſockets in all the fallen fragments of this temple, that each ſtone had probably been ſtrengthened in this manner, we were leſs ſurpriſed at the quantities of iron ſaid to have been carried away by the Baſhaws of Damaſcus at different times from theſe ruins, on which they had left evident marks of their violent, though unſucceſsful, attempts to get at the iron of the columns which are ſtanding. How much this method contributes to the ſtrength of the building, is remarkably ſeen in the moſt entire temple, where a column has fallen againſt the wall of the cell with ſuch violence, as to beat in the ſtone it fell againſt, and break part of the ſhaft, while the joinings of the ſame ſhaft have not been in the leaſt opened by the ſhock." The uſe of metal was not confined to cramps and bolts, the ancients even conſtructed roofs of bronze; the portico of the Pantheon, before its ſpoliation by Urban VIII., was covered with beams and rafters of this material. Tiled with marble, and ſupported with granite columns; this portico preſented a rare combination of grand and beautiful architecture, with the richeſt materials, and the appearance of indeſtructibility. Serlio has preſerved a deſign of this metallic roof, which was formed of beams and rafters, after the uſual methods of carpentry; theſe were united and ſecured by pins and nails of the ſame metal; and as well to economize the material, as to leſſen the weight of the whole, the pieces were hollow. The interior of the portico is divided by the columns into three diviſions, or aiſles; the two lateral were ceiled, and that in the middle vaulted, alſo with bronze. The quantity and beauty of this metal may be appreciated by the throne of St. Peter, and the Baldaquin of the ſame cathedral, the moſt conſiderable, beyond compariſon, of modern works in bronze, and whoſe enormous maſs is not the equivalent of the ſpoils of the Pantheon from which they were formed, for an inſcription on the portico of this edifice informs us, that the exceſs of this valuable metal was caſt into the cannons of St. Angelo.

Bronze was alſo uſed with magnificent profuſion in the decoration of buildings; thus many edifices preſerve not indeed the ornaments themſelves, theſe have long been torn away by the rapacity of barbariſm, but the marks and cramp-holes, by which were attached alto relievos or trophies or inſcriptions.

It excites regret to reflect that the means employed by the ancients to increaſe the beauty and enſure the ſolidity of their edifices, have, in many inſtances, only ſerved to accelerate their deſtruction; the beautiful marbles of the Grecian temples are continually carried off by Turkiſh carvers of grave ſtones, or burnt into lime; the inhabitants near the ſcite of the temple of Apollo Didymæus, appear to have been principally ſupported by this impious manufacture. Palmyra and Balbec have long furniſhed mines of metal to the neighbouring Baſhaws; the Coliſeum bears, in innumerable ſcaffolding holes, the marks of an attempt at its entire ruin in ſearch of the cramps which connect its ſtones; and the amphitheatre of Niſmes is ſtill blackened by combuſtions kindled for the ſame purpoſe; the temple of Peace, the baths and palaces of the emperors, and indeed almoſt all the edifices of grandeur and magnificence have been more ruined by the violence of rapine than the injuries of time.

It may be remarked, before we quit the ſubject of antique conſtructions, that the Greeks and Romans in their buildings of wrought ſtone appear always to have worked only the beds of the ſtones before placing them in the building, leaving the faces to be worked after the erection of the edifice; an excellent method, which ſaves from injury the arriſes and mouldings. On this account, unfiniſhed columns are ſometimes found in their remains; as in the relics of the temple of Apollo Didymæus, near Miletus, may be ſeen two columns ſupporting their architrave, with the flutes entirely worked; alſo, one left ſtanding in its unfiniſhed ſtate, the channels under the capital, and at the baſe only, being marked out, as a direction to the workmen in completing the flutings, after the ſtructure was raiſed. (Ionian Antiquities). Similar inſtances are alſo found in the iſland of Delos.

The durability and extreme ſolidity of the Roman cementitious buildings, in which the mortar has very generally acquired a hardneſs ſuperior to that of the rubble ſtones which it connects, compared with the fragility and crumbling nature of the mortar, uſed by modern builders, had led ſome to ſuppoſe, that the ancients poſſeſſed proceſſes and recipes for the formation of cements, the knowledge of which had periſhed together with many other valuable ſecrets in the ages of barbarity, which ſucceeded the fall of the Roman empire. But better information, and the experiments of ingenious men, have exploded this opinion, and there can be no doubt, that proper attention to the choice of lime ſtone and ſand, to the burning of lime, and, above all, care and labour in the mixing and tempering theſe materials, would enable our workmen to rival thoſe of Rome in this important part of conſtruction. In ſome inſtances, this has been tried, and though the lapſe of ages may be neceſſary to make the compariſon complete, yet preſent appearances are ſufficient to baniſh any reaſonable fear of the reſult. See the article Cements, *calcareous*.

Architecture, together with all the arts and ſciences that adorn and illuſtrate humanity, experienced the feebleneſs and degradation which attended the decline and fall of the Roman empire. Impudent compilers of the ſpoils of the edifices of happier times, the builders of thoſe ages, have only perpetuated their own ignominy. Conſtantine was the firſt of theſe depredators; he ruined the arch of Trajan to adorn his own with its inappropriate ornaments, and the Mauſoleum of Adrian ſupplied columns to ſupport the aiſles of his churches.

In the general confuſion occaſioned by theſe practices, it is not be wondered at that the principles of Grecian architecture, ſomewhat corrupted in the beſt times of Rome, ſhould be entirely loſt: architraves were omitted and columns were made to ſupport arches and vaults; arcades were every where ſubſtituted to colonnades, vaults to ceilings; thus the exceſſive uſe of arches and vaults is characteriſtic of the method of conſtruction adopted in the middle ages.

This corrupted Roman ſtyle continued with various and increaſing deteriorations, and under different names, as in our own country, of Saxon and Norman, to be the prevailing architecture of Europe till towards the 12th century, when what is generally called the Gothic ſtyle prevailed. This is an architecture of ſingular and original merit, ſurprizing and fantaſtic, and magnificent and aweful; but for the deſcription of Gothic architecture the reader is referred to that article; our buſineſs at preſent is with the modes of building obſerved in theſe edifices.

The Gothic mode of conſtruction is an ingenious compendium of building well adapted to the peculiar ſtyle of architecture; economical in materials and labour. Rejecting heavy cornices, architraves, and lintels, of all kinds, the builders had ſeldom occaſion to uſe ſtones larger than a man might carry on his back up a ladder from ſcaffold to ſcaffold, though they had pullies and ſpoked wheels upon occaſion. Thus they were readily enabled to raiſe up their works to an extraordinary height; in which particular they appear to have placed great pride and emulation. Hence the lofty towers and ſpires, ambitious ornaments that tyrannize over the body of the building, and claim attention at the expence of thoſe uſeful parts to which they ought, but diſdain to be ſubordinate. The churches were arched over with groined vaulting, which threw the weight on the ſpringing points inſtead of diſtributing the preſſure equally along the walls, as was the caſe with the Roman plain vaults and ceilings; the points of preſſure from the vaults were oppoſed by buttreſſes, and the intermediate ſpaces of the walls were thin, and occupied with windows; in this reſpect again differing from Roman conſtruction where the walls are of uniform thickneſs in their whole extent, without apparent buttreſſes. The vaulting was ingeniouſly compoſed of a ſkeleton of hewn ſtone, and the interſtices filled in with lighter materials. Thus Mr. Price remarks, in his Obſervations on the Cathedral Church of Saliſbury, that "the groins and principal ribs are of Chilmark ſtone, but the ſhell or vaulting between them is of hewn ſtone and chalk mixed, on top of which is laid a coat of mortar and rubble, of a conſiſtence probably ground in a kind of mill and poured on hot while the lime was bubbling, becauſe by this the whole is ſo cemented together as to become all of one entire ſubſtance. This compoſition is very remarkable, ſomewhat reſembling the pumice ſtone, being porous and light, by which it contributes prodigiouſly to the ſtrength of the whole, and at the ſame time the leaſt in weight of any contrivance that perhaps was ever uſed."

The machine of a Gothic edifice, conſiſting ſo eſſentially of vaults and arches, required great contrivance in balancing and ſuſtaining their preſſures; this was effected by means bold, ingenious, but ſometimes preſumptuouſly inſufficient. The genius of theſe architects had a tincture of extravagance which led them to ſacrifice always the apparent, and too often the real ſolidity of their buildings to thoſe pictureſque and marvellous effects which captivate the imagination of every one, but offend the judgment of the connoiſſeur. Accordingly theſe edifices muſt not expect to rival the duration of the immortal conſtructions of Greece and Rome.

The pendants from the vaults are among the moſt pleaſing and innocent of the plays of ingenious conſtruction in the Gothic ſtyle; but the attempt to ſubſtitute weight to butment, generally obſerved in the middle aiſle pillars of cathedrals, ſupporting unaſſiſted the preſſure of the ſide vaulting, is a ſerious defect, which threatens the ruin of theſe venerable piles. On this account ſir Chriſtopher Wren obſerves, that almoſt all the cathedrals of the Gothic form are weak and defective in the poiſe of the aiſles. As for the vaults of the nave, they are on both ſides equally ſupported, and propped up from ſpreading by the bows or flying buttreſſes which riſe from the outward walls of the aiſle. But for the vaults of the aiſles they are indeed ſupported on the outſide by the buttreſſes, but inwardly they have no other ſtay but the pillars themſelves, which, as they are uſually proportioned, if they ſtood alone without the weight above could not reſiſt the ſpreading of the aiſle one minute: true indeed the great load above of the walls and vaulting of the nave ſhould ſeem to confine the pillars in their perpendicular ſtation, that there ſhould be no need of butment inward; but experience hath ſhewn the contrary, and there is ſcarce any Gothic cathedral that I have ſeen at home or abroad, wherein I have not obſerved the pillars to yield and bend inwards from the weight of the vault of the aiſle."

Hence it appears that the method purſued in erecting theſe buildings was to inſert the ſpringing ſtones as the work proceeded, but to leave the vaults to be turned after the walls were carried up to their full height and the whole roofed in.

The pointed arch has ſeveral advantages over arches formed by one ſegment of a circle; particularly, as applied to vaults, it will riſe with little centering, requires lighter vouſſoirs, and leſs butment. The Gothic architects ſeem to have perpetually calculated the minimum of neceſſary reſiſtance and ſolidity, and they diſplayed conſiderable ſkill in aggravating the appearance of boldneſs by the choice of materials; we have already ſeen the light compoſition of their vaults, and on the other hand they frequently uſed Purbec marble, a very hard and ſtrong ſtone for the ſlender ſhafts which had to ſupport great weights. The roofs of Gothic buildings are very high pitched, a form more of choice than neceſſity, rather adopted in compliance with their pointed and pyramidal ſtyle of architecture, than neceſſitated by the climate, as they are generally covered with lead. Theſe roofs are therefore faulty in burdening the walls with an unneceſſary load of lead and timber, and they are alſo deficient in conſtruction by the omiſſion of tye beams to counteract their tendency to ſpread and thruſt out the walls.

Modern architecture, though it has adopted its decorations from the remains of Greek and Roman antiquity, has ſtill retained conſiderable traces of the Gothic ſtyle. Theſe may be obſerved in the affectation of height, in the oſtentatious ornaments of domes and ſteeples, and in the fondneſs for complicated forms of plans and multiplicity of parts; and accordingly the conſtruction alſo is a medium between Gothic temerity and Roman prudence; the balancing of arches and vaults ſtill exerciſed the ſkill of the architects; the domes of St. Peter's, of the Vatican, and St. Paul's of London, illuſtrate the ingenuity and mathematical ſcience of their authors, but we no longer find apparent ſolidity rejected, or real ſolidity ſacrificed. We have ſeldom the grand conſtructions in hewn ſtone of the Greeks, nor, on the other hand, the economical building of Gothic architects, nor the cementitious walls of the Romans.

Stone, brick, timber, and metal, are our materials. Stone is uſed rough in ruſtic buildings, either dry or in mortar; but the ſtone employed in more finiſhed edifices, either as facing to brickwork, or, where the material is plentiful, in the whole ſubſtance of the walling, is uſed in blocks of moderate ſize, ſquared and laid in mortar, and bonded with alternate courſes; modern architects, and particularly the French, have ſhewn much ingenuity in the maſonry of arches and coves and plat-bands. Iron is uſed plentifully both for cramping ſtones together and in ligatures to entire walls: thus all conſiderable domes are ſtrengthened and ſecured from ſpreading by ſtrong chains ſurrounding them; and lead is continually employed in large quantities on roofs. Timber is uſed in all edifices to form roofs and floors, and to bind and ſtrengthen the walls and foundations; and many buildings are erected entirely with this material. Carpentry is the art in which modern workmen chiefly excel.

The buildings of this country may be comprehended under the following claſſes: rough ſtone, like the common houſes of the rocky diſtricts, which are either worked dry or with mortar; hewn ſtone, as the buildings of Bath; brick and ſtone mixed, in which, as they are always remote from quarries of ſtone, that material is the moſt expenſive, and therefore employed in the ornamental parts, as cornices, plat-bands, window ſills, and all the members of architecture, and ſometimes applied as a facing to the brick wall; in this manner are all the buildings of London; and, laſtly, timber, which was formerly the moſt common of all, and is ſtill a very conſiderable claſs; ſuch are all the cottages of the poor out of the rocky diſtricts, and many farm houſes and conſiderable dwellings. Theſe are formed of a frame of timber-work, which in the better ſort of houſes has its interſtices filled in with brick-work, and is called brick nogging, or brick and ſtud, and then lathed over and plaſtered, or rough-caſt, or ſtuccoed, or ſometimes boarded; the poorer ſort, however, are covered with reeds and clay. Engliſh buildings are roofed with reed and thatch, which was formerly the moſt general mode, and is ſtill very prevalent in the country; alſo with tiles, ſlate, lead and copper. Slates are uſed conſtantly in the ſtone counties, and brought thence to other parts, as a light, durable, and handſome covering. Tiles are the manufacture of the brick diſtricts, and uſed there. Lead and copper, as the moſt expenſive materials, are ſeldom employed to cover entire roofs, but chiefly for gutters and platforms.

Our buildings may juſtly claim the merit of lightneſs in conſtruction, economy of labour and materials, and convenient diſtribution. Their real and evident defect is the want of ſolidity; this is in great meaſure to be attributed to the bad quality of the cements, which are compoſed with ſuch diſgraceful careleſſneſs and ignorant haſte by the workmen. Our bricks, too, which are made on the principle which pervades all our manufactures of ſacrificing every thing to quantity and cheapneſs, are neither tempered nor burnt ſufficiently. In the arts of carpentry and joinery our workmen are peculiarly eminent, both in the bold and ſkilful conſtruction of roofs and bridges, and in neat and accurate internal finiſhing.

As the buildings of London are regulated by what is commonly called the *Building Act*, "an act for the further and better regulation of buildings and party walls, and for the more effectual preventing miſchiefs by fire, within the cities of London and Weſtminſter and the liberties thereof, and other the pariſhes, precincts, and places within the weekly bills of mortality, the pariſhes of St. Mary-le-bone, Paddington, St. Pancras, and St. Luke at Chelſea," which repeals and amends ſeveral former acts for the ſame purpoſe, it may be proper to give a brief abſtract of part of it. This act, paſſed in the 14th year of the reign of his preſent majeſty, A.D. 1774, begins by dividing all buildings into ſeven rates or claſſes, for the purpoſe of ſubjecting them to various regulations reſpecting the thickneſs of their walls. Cap. 2. The *firſt rate* comprehends churches and all places of public worſhip, all buildings for brewing, diſtilling, ſoap making, melting of tallow, dying, boiling of turpentine, caſting braſs or iron, refining ſugar, and glaſs making, of whatever dimenſions theſe buildings may be, and alſo every warehouſe, and other buildings whatſoever, not being a dwelling-houſe, which exceeds three clear ſtories above ground, excluſive of the rooms in the roof, or which is of the height of 31 feet above the pavement of the ſtreet to the top of the coping; and every dwelling-houſe, which with its offices connected otherwiſe than by a fence wall, or open paſſage, exceeds when finiſhed the value of 850l., or covers more than nine ſquares of building on the ground floor, (each ſquare containing 100 ſuperficial feet). The regulations for theſe are, cap. 3 and 4, that all the *external walls* ſhall be built, at the foundation, of the thickneſs of two bricks and a half, or 21½ inches, thence to diminiſh gradually 2¼ inches on each ſide to the top of the footing, which is to be nine inches high, and two inches below the ſurface of the paving or flooring of the cellar ſtory; thence, the wall is to be carried up two bricks, or 17½ inches in thickneſs to the under ſide of the one pair of ſtairs floor, and thence, in the thickneſs of one brick and a half, or 13 inches, up to the under ſide of the plate under the roof or gutter; and thence, the parapet is to be built in the thickneſs of one brick, or 8½ inches, with the exception of ſuch parts of the wall as ſhall be wholly of ſtone, which may be of the thickneſs of 14 inches below the ground floor, and nine inches above. The *party walls* of the ſame buildings are to be built at the foundation three bricks and a half, or two feet ſix inches and a half in thickneſs; thence to diminiſh gradually 4½ inches on each ſide to the top of the footing, which muſt be one foot high, and two inches below the cellar floor; thence, the wall is to be built in the thickneſs of two bricks and a half, or one foot nine inches and a half up to the underſide of the ground floor; and thence in the thickneſs of two bricks, or 17½ inches, up to the under ſide of the floor of the rooms (if any) in the roof of the higheſt building adjoining to ſuch party wall; and thence of the thickneſs of one brick and a half in length, or 13 inches, to the top of the wall.

Cap. 5. defines the *ſecond rate* of buildings, which conſiſts of every warehouſe, ſtable, or other building, not being a dwelling-houſe, that exceeds two clear ſtories, and does not contain more than three clear ſtories above ground, or which is of the height of 22 feet and under 31 feet from the pavement to the top of the coping; and alſo every dwelling-houſe which with its offices exceeds the value of 300l., and does not amount to more than 850l., or which covers more than five, and leſs than nine ſquares of building. Cap. 6 and 7. The *external walls* of the ſecond rate are to be built at the foundation in two bricks thick, and diminiſh regularly 2¼ inches on each ſide to the top of the footing, which muſt be nine inches high; thence to be carried up in one brick and a half thick to the under ſide of the one pair of ſtairs floor; and thence to the under ſide of the coping of the parapet in the thickneſs of one brick; ſtone work excepted, which may be of the thickneſs of nine inches above the ground floor. The *party walls* are to be three bricks and a half at the foundation, diminiſhing 4½ inches on each ſide to the top of the footing, which is to be nine inches high; thence, the wall muſt be two bricks and a half thick up to the under ſide of the ground floor; thence, two bricks thick up to the under ſide of the floor of the two pair of ſtairs ſtory; and thence, of the thickneſs of one brick and a half to the top of the wall.

Cap. 8. The *third rate* of building is defined to include every warehouſe, ſtable, and other building, not being a dwelling-houſe, which exceeds one clear ſtory, or does not contain two clear ſtories above ground, or which is above 13 feet, and leſs than 22 feet in height from the pavement to the top of the coping, and alſo every dwelling-houſe, which with its offices exceeds the value of 150l., and does not amount to 300l., or which covers more than three and a half and leſs than nine ſquares of building. Cap. 9 and 10. The *external walls* of ſuch buildings are to be two bricks thick at the foundation, and to diminiſh 2¼ inches on each ſide to the top of the footing, which muſt be ſix inches high; thence, the wall is to be carried up one brick and a half thick to the under ſide of the ground floor, and thence, one brick in thickneſs to the coping of the parapet. The *party walls* are to be three bricks thick at the foundation, diminiſhing 4½ inches on each ſide to the top of the footing, which is to be nine inches high, and thence, to be built two bricks in thickneſs to the under ſide of the ground floor, and thence, one brick and a half thick to the top of ſuch wall.

Cap. 11. The *fourth rate* of building which is defined to include every warehouſe, ſtable, or other building, not being a dwelling-houſe, which does not exceed one clear ſtory above ground, or the height of 13 feet from the pavement; and every dwelling-houſe which with its offices does not exceed the value of 150l., or three ſquares and a half of building. Cap. 12 and 13. The *external walls* of this rate are to be ſimilar to thoſe of the third rate. The *party walls* muſt be two bricks thick at the foundation, diminiſhing 2¼ inches on each ſide to the top of the footing, which muſt be nine inches high; thence, to be carried up in one brick and a half thick to the under ſide of the ground floor; and thence, one brick in thickneſs to the top of ſuch wall.

Cap. 18. Every building except ſuch as are particularly included in the firſt or ſeventh rates, which is at the diſtance of four feet and not eight feet from any public road, and which is detached from any building not in the ſame poſſeſſion, 16 feet and leſs than 30 feet, is declared to be of the *fifth rate*, and may be built of any dimenſions whatever.

Cap. 19. The *ſixth rate* only differs from the fifth in demanding, that ſuch buildings may be eight feet diſtant from the ſtreet or road, and detached 30 feet from other buildings; and this rate may be built of any dimenſions, and with any materials whatever.

Cap. 20. Every crane-houſe on any wharf or quay, and every ſhamble, windmill, or water-mill, and alſo every building ſituated without the cities of London and Weſtminſter, and the liberties thereof, uſed as workſhops for tanners, fellmongers, glue makers, calicoe printers, whitſters, whiting makers, curriers, buckram ſtiffners, oil-cloth painters, wool ſtaplers, throwſters, parchment makers, is declared to be of the *ſeventh rate* of building, and may be built of any dimenſions whatever. Cap. 21. Crane-houſes muſt be built externally of ſtone, brick, ſlate, tile, oak, elm, ſteel, iron, or braſs; and all other buildings of the ſeventh claſs may be erected of any materials whatever, but muſt not be covered with pitch, tar, or any inflammable compoſition.

Cap. 22. Every office which ſhall be entirely detached from the building to which it belongs, or connected therewith only by a fence, wall, or covered paſſage, open on one or both ſides, ſhall be deemed to be of the rate or claſs of building ſuch office would be of, if it did not appertain to any other building.

Cap. 14. The materials of party walls are to be brick or ſtone, and no timber to be uſed in them, except ſuch as is neceſſary for planking, bridging, or piling the foundation; and cap. 27. for templets, chains and bond, and alſo the ends of girders, beams, purlins, binding and trimming joiſts, or other principal timbers, obſerving always to leave 8½ inches of ſolid brick work between the ends and ſides of ſuch timbers and the timbers of adjoining buildings. Cap. 26. Party walls are to be carried up one foot ſix inches above the roof of the higheſt adjoining building, which ſhall gable againſt them; and to be one foot above the jutters. Cap. 29. Chimnies built in party walls are ſubject to the following regulations: the back of the chimney from the hearth, to 12 inches above the mantle, is to be built in 13 inches thick in the baſement ſtory, and 8½ inches thick in the upper ſtories; and in thoſe caſes where chimnies are built back to back on each ſide of a party wall, the entire thickneſs of the backs is to be, in firſt rate houſes, eighteen inches in the cellar ſtory, and thirteen inches in the upper ſtories, and in the ſecond, third, and fourth rates, the thickneſs in the cellar ſtory is to be thirteen inches, and eight inches and a half in the upper ſtories.

Cap. 38. Every owner of any building within the limits of this act, who may think it neceſſary to repair or rebuild the party wall between his and the adjoining premiſes, is to give three months notice in writing to the owner of the adjoining building, appointing a ſurvey to be made of the ſaid wall, and naming two ſurveyors or able workmen on his part, and requiring the other party alſo to name two ſurveyors to meet at an appointed place, to view and certify the ſtate of the wall. But if the owner of the adjoining premiſes ſhall neglect to appoint two ſurveyors on his part, according to notice, then the two ſurveyors firſt named, together with two other ſurveyors, to be named by the party giving notice, may, within ſix days after the time appointed in the notice, view the party wall, and certify in writing under their hands to the court of mayor and aldermen, or to the juſtices of the peace in their next quarter or general ſeſſions as the caſe may be, the condition of the party wall, and whether the ſame, or any part thereof, ought to be repaired or pulled down and rebuilt; and, in caſe the major part of the ſurveyors appointed ſhall not, within the ſpace of a month from the appointment, ſign the certificate, then it ſhall be lawful for any one or more of the juſtices of the peace for London or Weſtminſter, or the county of Middleſex or Surry, as the caſe may be, to appoint one other ſurveyor to be added to the ſurveyors before appointed, all or the major part of whom are to meet, and view the party wall; and in caſe the major part of them ſhall certify the wall to be decayed or ruinous, and not ſufficiently ſecure from fire, then, within three days from the making ſuch certificate, a copy of it is to be delivered to the owner of the adjoining building, or affixed to the door if it is unoccupied, and alſo filed with the clerk of the peace in the city, county, or liberty, where ſuch wall is ſituate; and the laſt mentioned owners may appeal from the certificate to the next general or quarter ſeſſions, when the juſtices are to ſummon before them one or more of the ſurveyors, and examine the matter upon oath, and thereupon make ſuch orders as they think juſt.

Cap. 41. The perſon at whoſe expence a party wall is built, ſhall be reimburſed by the owner of the adjoining premiſes who makes uſe of the wall, a part of the expence in the following proportion. If the adjoining building be of the ſame, or a ſuperior claſs to the building belonging to the perſon at whoſe expence the party wall was conſtructed, the owner of ſuch adjoining building ſhall pay one moiety of the expence of ſo much of the party wall as he ſhall make uſe of: but if the adjoining building be of an inferior rate, the owner ſhall pay a ſum equal to a moiety of the expence of building a party wall, as required by the act for ſuch claſs of building.

Cap. 46. Door and window frames are to be ſet in reveals and receſſes, at leaſt four inches from the front of the building, except the door caſes of warehouſes. Cap. 48. Every coping, cornice, faſcia, window dreſſing, portico, balcony, balluſtrade, or other external decoration, or projection whatever, is required to be made externally of brick, ſtone, burnt clay, or artificial ſtone, ſtucco, lead, or iron, except the cornices and dreſſings to ſhop windows, or the covered ways to any building. No water is to be ſuffered to drip next to any public way from the roof of any building, except from the roofs of porticos or other entrances, but to be conveyed by metal pipes, or wooden trunks, or brick or ſtone funnels into drains or reſervoirs.

Cap. 49. No bow window or other projection ſhall be built next to any public ſtreet, ſo as to extend beyond the general line of the fronts of the houſes in the ſaid ſtreets, except ſuch projections as are neceſſary for copings, cornices, facias, door and window dreſſings, or for open porticos, ſteps, or iron palliſades; and alſo. except ſhop windows, which are allowed in ſtreets 30 feet wide or more, to project ten inches from the line of building, and five inches in ſtreets of leſs width.

Cap. 53. No ſtack of warehouſes ſhall contain more than 35 ſquares of building on the ground plan, except ſuch warehouſes are divided by one or more party walls into diviſions of not more than 35 ſquares each, and any communications made through the party walls are to have door caſes and ſills of ſtone, and iron doors. Stables are only to contain 25 ſquares in one diviſion, with the ſame regulations.

Cap. 55. If any building of the firſt, ſecond, third, or fourth rates, (except the inns of court or chancery, the royal exchange, companies' halls, and except warehouſes and dwelling houſes, let at a rack rent for not more than 25 pounds by the year) ſhall be converted into two or more dwelling houſes, work-ſhops, ſtables, or other buildings which ſhall be in diſtinct tenures on the ground floor, then each ſuch tenement ſhall be conſidered as a ſeparate building, and be divided by party walls.

Cap. 59. No iron, tin, copper, or other pipe or funnel for conveying ſmoke or ſteam, is allowed to be in front of any building next to a public ſtreet, nor in the inſide of any building nearer than 14 inches, to any timber or other combuſtible material.

Cap. 62. The mayor and aldermen of the city of London, and the juſtices of the peace for the county of Middleſex, Surry, the city of Weſtminſter, and the liberty of the tower of London, are empowered to appoint ſurveyors to ſee the rules and regulations of this act properly complied with: and cap. 63. before any building is begun to be erected, the maſter workman is bound to give 24 hours notice thereof to the ſurveyor of the diſtrict, in which the building is, who is to attend and view the building, and enforce the obſervance of the act. The fees to be paid by the builder to the ſurveyor are, for a building of the firſt rate 3l. 10s., and for an alteration or addition to the ſame 1l. 15s.; for a building of the ſecond rate 3l. 3s., and for an alteration 1l. 10s.; for the third rate 2l. 10s., and 1l. 5s.; and for the fourth rate 1l. 1s. and 15 ſhillings.

Building, *Ship*. See Ship.

BUILT, in *Sea Language*, is an epithet applied to ſhips, denoting their peculiar form and ſtructure, and diſtinguiſhing ſome from others of a different claſs or nation. Thus we uſe frigate-*built*, galley-*built*, &c. Engliſh-*built*, French-*built*, &c.

BUILTH, or Buallt, in *Geography*, is a market town of Brecknockſhire, Wales, finely ſituated on the banks of the river Wye, over which there is a handſome ſtone bridge. According to ſome antiquaries, here was the Roman ſtation which Ptolemy calls Bulleum Silurum. Several intrenchments are ſtill remaining in the vicinity of the town, and ſome Roman bricks, inſcribed LEG: II. have been found here. The Chronicle of Caradoc relates, that the Danes, in 893, who had been vanquiſhed and harraſſed by Alfred, fled to this part of the country, and, among other devaſtations, nearly demoliſhed the town of Builth. It was, however, again rebuilt and fortified with a ſtrong caſtle, and again ſuffered nearly a ſimilar fate, in 1217, by Reynald de Bruſe, who then broke off his alliance with Llewelyn ap Jorwerth, and united with Henry III. In 1221 he was beſieged in this fortreſs by a party of Welſh lords; but Henry, to whom he had remained conſtant, came with an army and raiſed the ſiege. About 1256, we find this fortreſs in the poſſeſſion of Rhys Fychan, whom Llewelyn ap Gruffydd defeated and forced out of Builth. In various other wars between the Engliſh and Welſh, this place was alternately occupied by the conquering power, and in each conflict experienced ſome damages.

This town is ſingularly built on two parallel terraces, and forms two ſtreets on the ſide of a ſteep declivity. The upper ſtreet is clean and reſpectable, but the lower, and more populous ſtreet, on the banks of the Wye, is narrow, and moſt of the houſes have a poor and mean appearance. Builth, from its contiguity to Herefordſhire, and from the combined attractions of its ſalubrious air, grand and intereſting ſcenery, and the quality of its waters, is much reſorted to by ſtrangers. It is provided with two weekly markets, and three fairs annually. Builth is 171 miles N.W. from London, 15 from Brecknock, and contains 994 houſes, and 5159 inhabitants.

About one mile N.W. of Builth is a celebrated mineral ſpring, called The Park wells; and about ſeven miles N.E. are Llandrindod wells, conſiſting of three ſprings. Theſe waters are eſteemed of highly medicinal qualities, and are recommended by the faculty in many diſorders of the human frame. Dr. Lindon has written a treatiſe on their peculiar properties. Theſe wells are ſituated on a common, on which are a few ſcattered houſes, and a large building for the accommodation of thoſe who viſit them. The wells of Llanwrthyd, which are ſimilar in quality to ſome of thoſe of Llandrindod, lie on the other ſide, at no great diſtance from Builth. Malkin's Tour in South Wales, 4to. 1804. Evans's Cambrian Itinerary, 8vo. 1801.

BUINAHA Point, a cape on the weſt coaſt of Ireland, being the ſouthern point of the entrance into Newport or Clew bay, in the county of Mayo. Near it are ſome rocks and a ledge which require the attention of mariners. In ſome nautical books it is called *Ruinaha*. W. long. 9° 45′. N. lat. 53° 46′. M'Kenzie. Keaufort.

BUINSK, a town and diſtrict of Ruſſia, in the government of Simbirſk, ſeated on the river Sviaga; 36 miles N.N.W. of Simbirſk.

BUIS, Le, a town of France, in the department of the Drôme, and chief place of a canton in the diſtrict of Nyons, 2½ leagues S.E. of it, and ſeated on the Oreze. The town contains 2215, and the canton 8932 inhabitants; the territory comprehends 325 kiliometres and 24 communes. The diſtrict called Buis, before the revolution, was a territory of Dauphiny, ſmall and mountainous, but moderately fertile.

BUISKOI, a town of Siberia, 64 miles S.E. of Nertſhinſk.

BUITRAGA, a ſmall town of Spain, in New Caſtile, ſeated on a rock, which is fortified both by art and nature.

BUKANS. See Bugganz.

BUKARI. See Buccari.

BUKI, a town of Poland, in the palatinate of Kiov, 44 miles ſouth of Bialacerkiew. N. lat. 49° 25′. E. long. 30° 28′.

BUKO, a ſmall town of Germany, in the ancient duchy of Mecklenburg, called *New Buko*, by way of diſtinction from Old Buko, a neighbouring church village.

BUKOVITZE, a town of Croatia; 14 miles S.E. of Carlſtadt or Carlowitz.

BUKTARMINSKOI, Mountain, a branch of the Altay mountains of Ruſſia, which commences in the ſuperior region of the river Buktarma, at the frontier heights between the Chineſe and the Ruſſian empires, declines from the ſouth towards the north and weſt, and accompanies the fore-mentioned ſtream, on both its ſides, till its confluence with the Irtiſh. It reaches to eaſt and north-eaſt as far as the mountains that run along the Kokuſan, and towards the north up to thoſe that follow the courſe of the Ulba. From the Binſkoi ſnow mountains up to the head of the Uiman, which falls into the Kokuſan, it forms a lofty ridge, riſing almoſt throughout in high ſummits of ſnow, and on this ſide extends its greateſt height to the ſource of the laſt-mentioned river. This huge mountain, as yet little known, and partly inacceſſible, conſiſts, as far as it has been examined, in its higheſt points, of various kinds of granite, porphyry, and flint breccia. But in its chaſms, and particularly towards the ſhore of the main or moſt conſiderable rivers, different ſorts of ſchiſtus, chalk-ſtone, marl, breccia, and ſand-ſtone are frequently met with. Jaſper is found in abundance, with porphyry and trapp, in the ſuperior regions. Of the chalk-mountains ſeen in the lower confines of the Buktarma, ſome are very craggy, and have a number of caverns. In theſe mountains there has hitherto been explored but one mine, the Buktarminſkoi, with any hope of ſucceſs. See Altai.

BUKUKUNSKOI Kamen, a fortreſs of Siberia; 120 miles S.W. of Doroninſk.

BUKUPIENICK, a town of Poland, in the palatinate of Lublin; 22 miles S. of Lublin.

BUL, in the *Hebrew Calendar*, the eighth month of the eccleſiaſtical, and ſecond of the civil year, ſince called *Marſhevan;* it anſwers to our October, and has nine and twenty days.

Bul, in *Ichthyology*, one of the Engliſh names for the common flounder.

BULAC, in *Geography*. See Boulac.

BULACAN, a ſmall province of the iſland of Laçon, or Manilla, lying between Panpanga and Tondo. It abounds in rice and palm-wine.

BULACH, a town of Swiſſerland, in the canton of Zuric, and a prefecturate of the ſame name, which firſt entered into an alliance with Zuric, in 1407. The inhabitants are Proteſtants; diſtant 8 miles N. from Zuric. N. lat. 47° 25. E. long. 8° 27′.

Bulach, a town of Germany, in the circle of Swabia, and duchy of Wurtemburg. In the annexed bailiwick is a mountain, which furniſhes iron and copper ores; 20 miles W.S.W. of Stuttgart, and 4 S.W. of Calu.

BULAFO, a muſical inſtrument, much uſed by the Negroes of Guinea, &c. It conſiſts of ſeveral pipes made of hard wood, ſet in order; which diminiſh by little and little in length, and are tied together with thongs of thin leather twiſted about ſmall round wands, put between each of the pipes, ſo as to form a ſmall interſtice. They play on it with ſticks, the ends of which are covered with leather, to make the ſound leſs harſh.

BULAKUAN, in *Geography*, a remarkable caſtle in the empire of Morocco, ſituate on the banks of the Morbeya, in the province of Duquella. It ſtands in a wild and barren ſpot, on the ſummit of a commanding eminence more than 200 feet high, and forms a pyramid, with rounded angles; and a large river runs beneath it, which from its depth and rapidity, inſpires a kind of horror. This caſtle was built at the cloſe of the 13th century, by Muley Abdalmomen, the firſt king of the race of Moahedins; but many additions were made to it by Muley Abdallah, ſon of Muley Iſhmael. This prince cauſed ſubterraneous paſſages to be dug at a great expence for procuring water from the river; and in order to ſecure his water-carriers from the fire of the muſketry, he built conduits, which brought the waters from the neighbouring mountains, the ruins of which are ſtill viſible on the road from Bulakuan to Morocco. Near the caſtle is a village, and another before you paſs the river; each of which contains about 200 houſes, or thatched huts, being piles of rough hewn ſtone without mortar. Both theſe villages, inhabited by Moors, are exempt from taxes, in conſideration of their giving needed aſſiſtance in croſſing the river. Although the caſtle ſtands in a ſandy barren ſituation, the banks of the river below it preſent to view well-cultivated gardens, with their orchards and vineyards. Each garden contains a windlaſs and a bucket, for ſupplying it with water. The only ferry-boat for paſſing the river near this caſtle, is a raft, compoſed, for the occaſion, of reeds, to which ſkins, inflated, with wind, are tied with cords, made of the palm-leaf. This is ſuſtained by ſeveral Moors, who, whilſt they ſwim, guide and ſupport it by their ſhoulders, in ſpite of the rapidity of the current. On this crazy craft travellers and their effects are tranſported. We learn from Livy, that, during the ſecond Punic war, when Hannibal went from Spain to Italy, a part of his army paſſed the Rhone, the Ticino, and the Po, on goat-ſkins filled with air. A kind of temporary bridge is conſtructed for the paſſage of the emperor, conſiſting of two thick oſier cables, faſtened to large piles on each bank of the river. Theſe cables are formed into a kind of hurdle, by paſſing through them iron ſtakes about 5 feet long, and laying upon it ſods 6 inches thick. Chenier's Preſent State of the Empire of Morocco.

BULAM, or BOOLAM, an iſland in the Atlantic, near the coaſt of Africa, at the mouth of the Rio Grande, $1\frac{1}{2}$ league from the continent, and about 18 leagues long, and from 4 to 5 broad. N. lat. 11°. W. long. 14° 50′. Some have conſidered it as one of the Biſſago iſles. See BISSAGOS. The whole coaſt of this iſland is deſcribed as bordered with woods, beyond which the country is ſingularly fertile, rich, and beautiful. It was formerly uninhabited, and cultivated by the natives of the other iſlands, who viſited it in ſeed-time and harveſt, and returned home for the reſt of the year. It was found to be abundantly productive of rice, maize, millet, fruits, and roots. The ground is ſaid to riſe imperceptibly from the ſhore for the ſpace of 2 leagues, thus exhibiting a moſt agreeable proſpect. This aſcent ſerves as a baſe to higher mountains, which ſtand in the centre of the iſland, covered with fine wood, and ſeparated by beautiful vallies, with ſuch regularity, that nature would ſeem to have been improved by art. This iſland was recommended, ſo long ago as the commencement of the laſt century, by M. da la Bruc, to the French government, as a fit place for a ſettlement; and the advice was repeated, in 1767, by the abbé Demanet. However, during the year 1791, a ſociety was formed in London for eſtabliſhing a ſettlement on ſome eligible ſpot on or near the coaſt of Africa. Thoſe who formed this aſſociation, allured by the flattering information which they had received of the iſland of Bulam, fixed on this as the object of their deſtination. The ſubſcribers were to receive a grant of 500 acres of land for the ſum of 30l. and in that proportion for any greater or leſs number of acres, as far as 2000. In the ſpace of one month after opening the ſubſcription, 9000ls. were paid into the hands of truſtees. After having encountered various difficulties, the adventurers arrived at Bulam, and immediately took poſſeſſion of it by hoiſting the Britiſh flag. The natives unexpectedly attacked the new comers; killed ſome of them, and obliged the others to relinquiſh what they had obtained. Accordingly, as they were thus compelled to abandon it, they ſought for refuge in a ſettlement belonging to the Portugueſe, where moſt of the unfortunate adventurers became victims to the climate of the country. Mr. Monteſiore, who was a principal agent in this buſineſs, deſpairing of the colonization of Bulam, embarked for SIERRA LEONE, of which he gives a very favourable account. However, from another account, compiled from the records of the Bulam ſociety, we are led to entertain a more favourable opinion of the ſituation and proſpects of this colony. Mr. Beaver, who reſided at Bulam as chief in command, in a letter dated July 1793, expreſſes great confidence of the final ſucceſs of the undertaking; declaring that, with ſufficient ſupport (not *military;* every thing having been fairly purchaſed, and amicably ſettled with the neighbouring Africans) "not one-tenth part of what had been afforded to the Sierra Leone company," he could, long ago, "have added to our preſent territories land ſufficient to maintain 500,000 people, and at very little expence." He concludes his letter, addreſſed to the truſtees of the Bulam aſſociation, with obſerving, "that if the good people of England knew but one half of the advantages to be derived from colonizing this part of Africa, on an *extenſive ſcale*, you might command half the money in the kingdom." This officer reſided at Bulam about two years.

Dr. Chiſholm, in his "Eſſay on the malignant peſtilential fever, &c." 8vo. 1795, maintains that the yellow fever was originally brought to the Weſt Indies from Bulam in the ſhip Hankey, on board of which it commenced.

BULARCHUS, in *Biography*, a Greek painter, flouriſhed 740 years B.C. and is ſaid to have been the firſt who introduced (at leaſt among the Greeks) different colours in the ſame picture.

BULARSKAIA, in *Geography*, a town of Siberia, on the ſouth ſide of the Irtiſh, oppoſite to Tobolſk.

BULATMAI, in *Ichthyology*, a ſpecies of CYPRINUS, the anal fin of which contains eight rays: the ſecond dorſal fin is large, and not ſerrated: beards or cirri four. *Hablizl.*

Cyprinus Bulatmai is a rare fiſh, of the ſize of the common carp. The colour is ſteel blue, gloſſed with gold above, and ſilvery, ſhining with a golden hue beneath: the ſcales are of the middle ſize, ſemicircular, diſtant, and imbricated: fleſh white as ſnow, and very good. This inhabits the Caſpian ſea.

BULB, or BULBUS, in *Botany*, βολϐος, Gr. as it is employed by Theophraſtus, is ſometimes the name of a plant allied to Scilla Allium, and others of the ſame family, but not particularly aſcertained by modern botaniſts, and ſometimes denotes the peculiar kind of root by which thoſe plants are diſtinguiſhed. In the latter ſenſe it was admitted by Pliny, and other Latin writers, and is preſerved in moſt of the modern languages of Europe. Our Engliſh gardeners univerſally ſpeak of it as a *root;* and it is ſaid by profeſſor Martyn, in his "Language of Botany," to have been "ſo called by botaniſts, till Linnæus corrected the error, and ſhewed that it is a ſingle *bud* enveloping the whole plant." But Linnæus was by no means the firſt who viewed it in this light. Our countryman Grew, in the ſecond book of his "Anatomy of Plants," preſented to the Royal Society in 1672, ſays expreſly, that "all bulbous *roots* are, as it were, hermaphrodites, or *root* and *trunk* both together; for the *ſtrings* only are abſolute *roots;* the *bulb* actually containing thoſe parts, which ſpringing up, make the *leaves* or *body;* and is, as it were, a great *bud* under ground." About the ſame time Malpighi was engaged in a ſimilar courſe of ſtudy at Bologna, and communicated the reſult of his reſearches alſo to our Royal Society. Under their patronage his "Anatome Plantarum" was publiſhed in London, the firſt part in 1675, and the ſecond, which contains the treatiſe "De Radicibus," in 1679. He treated the ſubject more at large, and diſſected, deſcribed, and figured ſeveral of the beſt known bulbs. In complete agreement with Dr. Grew, he uniformly ſtates the bulb to be a germ or bud, conſiſting of leaves or coats which encloſe the rudiments of the future plant, and produce other embryo buds for its farther propagation and increaſe. Nor were theſe great phyſiologiſts the firſt who ſtarted the idea. We find it clealy expreſſed by Cluſius, who wrote a hundred years earlier. "Eſt ergo tulipæ, ut & aliarum bulboſarum tunicatarum, bulbus nihil aliud quam gemma grandis ſubterranea, quæ præter adnatas externas intra ſe concipit alium bulbum ſeu gemmam, qui matri bulbo ſuccedens ei idem videtur, cum revera non ſit, ſed diverſus ipſiuſque ſoboles; cumque intra ipſum bulbum conceptus & enutritus ſit, adnatis extremis grandior & habitior evadit, ipſiuſque parentis æmulus." Even in the time of Theophraſtus, as we learn from his "Hiſtory of Plants," lib. i. cap. 10. it had been diſputed whether a bulb is properly a part of the root: a queſtion which the venerable botaniſt, after ſtating the arguments on both ſides, finally reſolves in the affirmative, on the general principle, that roots are capable of appearing under different forms, and that all which is under ground belongs to the root. It appears, however, that, at ſo early a period, there were ſome who compared the bulb to the κυημα, κυμα, or cyma, the fleſhy part of the ſtalk of a cabbage, when it firſt riſes above the ſurface of the ground; and, if we admit the propoſed reading of one of the commentators, others went ſo far as to call it οσσος, oculus, an eye, or gem; but the conjectural reſtoration of a paſſage ſo corrupt in the manuſcripts as to be confeſſedly unintelligible, cannot be brought forward to eſtabliſh a fact in the hiſtory of ſcience. Since the publication of the Philoſophia Botanica, no doubt has been entertained on the ſubject; the botaniſts, as well as others, ſtill ſpeak of bulbous roots: nor can any material objection be made to the continued uſe of the term, if it be underſtood to mean a bulb-bearing root, or, as it is accurately expreſſed in the Termini Botanici, "radix bulbo inſtructa."

Gems and bulbs are ſomewhat quaintly, but not unaptly, ſtyled by Linnæus hybernacula, the winter quarters of the young, or rather embryo plant; and they belong reſpectively to different families of the vegetable kingdom. They are diſtinguiſhed from each other by their ſituation, and by ſuch differences in their form and texture as their peculiar circumſtances require. In the Syſtema Naturæ, a *gem* is ſaid to be an hybernaculum ſeated on the aſcending caudex; and a *bulb* to be an hybernaculum ſeated on the deſcending caudex: in popular language, the former is above, the latter beneath the ſurface of the ground: i. e. the gem is a ſtem-bud, and the bulb a root-bud. In the Termini Botanici of Elmgren, publiſhed in Amœnitates Academicæ under the eye of Linnæus, the diſtinction between them is taken, not from their ſituation, but their ſubſtance. A gem is there ſaid to conſiſt of the rudiments of future leaves; and a bulb to be the rudiment of thoſe which are paſt. In this definition the great naturaliſt, for to him it muſt ultimately be attributed, even allowing the general principle to be juſt, has ſacrificed clearneſs, if not propriety of expreſſion, to his characteriſtic love of antitheſis. The rudiments of future leaves require no explanation; but the *rudiments* of thoſe which have *periſhed*, it is not ſo eaſy to underſtand. He undoubtedly meant the remains of what were once the rudiments of the leaves; and which, ſheltered by the ſurrounding earth, have not been entirely deſtroyed, though conſiderably changed in their appearance, by a change in the temperature of the air. Or as it is ſtated by Ferber in the diſſertation entitled "Prolepſis Plantarum," publiſhed alſo in Amœnitates Academicæ, "bulbus a gemma in eo ſolum differt, quod baſes foliorum perſiſtentes a copioſo ſucco, quem e terrâ hauriunt, fiant carnoſæ, & nova folia ſuis gemmis inſtructa excreſcant intra priorum baſes. Non confundi debent baſes foliorum præteritorum cum foliis futuræ plantæ; illas enim haud aliter conſiderare oportet, quam ut ſquamas gemmarum exteriores ab aere vel frigore induratas."

It is natural to inquire how the remains of leaves which in their perfect ſtate were above the ſurface of the ground, have been drawn down ſo as to become the ſcales or coats of ſubterraneous bulbs. To account for this, Linnæus muſt have adopted, though we do not remember that he has quoted, the theory of the old botaniſts concerning the gradual deſcent of the caudex, ſuppoſed to be produced by the mechanical action of the radicles or ſtring roots, which, to borrow the homely language of Grew, "deſcending themſelves directly into the ground, like ſo many ropes, lug the trunk after them." This idea is mentioned by Dr. Darwin in his Phytologia with ſome degree of contempt, and paſſed over without a formal refutation as the unfounded doctrine of "ſome inaccurate obſervers." Without preſuming to detract from the eſtabliſhed authority of Grew, who certainly ought not to be ranked with the tribe of inaccurate obſervers, we may venture to intimate that the integuments which form what may be called the body of the bulb, are not in all caſes the remains of decayed leaves, but have been originally formed below the ſurface, and have never advanced beyond their preſent appearance. In this point of view they have actually been repreſented by ſome of the diſciples of Linnæus under his immediate inſpection; as appears from Lœfling's diſſertation "De Gemmis Arborum in Amœnitates Academicæ." "Bulbos diximus," ſays that writer, "nihil aliud eſſe, quam gemmas, cum eodem modo ac illæ includant intra ſe futuram plantam; ſed eorum tunicæ evadunt ſucculentæ a copioſo nutrimento, quod hauriunt e terrâ cui innaſcuntur, quo repleti non poſſunt amplius extendi:" i. e. bulbs, we have aſſerted, are no other than gems; for like them they include the future plant, but their coats are rendered ſucculent by the copious nouriſhment which they draw from the earth, and in conſequence of this repletion become incapable of farther extenſion.

Of theſe two conciſe definitions of a bulb, that given in the Philoſophia Botanica is evidently inaccurate: ſince it is ſo expreſſed, as to include the root buds of perennial herbaceous plants, called by ſome authors, but not by Linnæus, turiones; which have not the form, and have never been known either in popular or ſcientific language, by the name of bulbs. That in the Termini Botanici is, as we have ſeen, deficient in perſpicuity; and when properly explained, does not appear to poſſeſs ſufficient preciſion. Bulbous plants are defined by Mr. Ray to be thoſe which conſiſt of a ſingle tuber or head, either ſcaly or tunicated, throwing out numerous fibres from its baſe. In this definition our great countryman ſhould not have introduced the word tuber; for in the preceding ſentence he has expreſsly divided the fleſhy roots which ſwell laterally into bulbous and tuberous. A bulb, therefore, and a tuber, were, in his ideas, as we believe them to be in nature, diſtinct things.

A bulb is now univerſally underſtood to be a ſpecies of bud of a peculiar ſtructure ſuited to its ſituation on the plant. A bulbous root conſiſts of this bud, of the proper radicles, and of the intermediate caudex. A tuber, if we miſtake not, is a radicle, ſwollen, either wholly, or in part, to an extraordinary thickneſs, and having generally, if not always, imbedded within its ſubſtance the rudiments of one or more future buds; as in the well known root of the potatoes, ſolanum tuberoſum. See Tuber.

Bulbs are divided by Linnæus, in his Philoſophia Botanica, into four kinds, the ſquamous, the tunicated, the ſolid, and the articulated.

The ſquamous bulb conſiſts of imbricated lamellæ; i. e. of ſcales laid partially one over the other, like the tiles or ſlates on the roofs of buildings, but more looſely connected, and a little diverging at their points; as in ſeveral ſpecies of lily. The root of the white lily is deſcribed and figured by Malpighi in his "Anatome Plantarum." It is compoſed of ſcales, or, as he calls them, leaves, gibbous without, and a little concave within, ſo adapted to each other as to form a bulb. Theſe ſcales proceed at different elevations from a ſolid elongated body, ſtyled by Malpighi a radical trunk, the deſcending caudex of Linnæus, which ſends out from its baſe a number of compound radicles, and from its upper extremity, within the ſcales, the root leaves and ſtem of the plant.

The tunicated bulb conſiſts of numerous tunics or coats, as in the common onion, allium cepa. Theſe coats lie cloſe together in concentric layers, and proceed from a ſhort broad caudex, having its upper ſurface more or leſs convex. They encloſe at their centre the embryo plant of the enſuing ſeaſon; and between them, at different diſtances from the centre, other bulbs, called cayeux by the French naturaliſts, and offsets by Engliſh gardeners, for the future increaſe of the ſpecies.

The ſolid bulb is ſaid by Linnæus to conſiſt of a ſolid ſubſtance, and the tulip is given by him as an example: but he muſt be underſtood to ſpeak comparatively, not ſtrictly and abſolutely. The tulip root is thus deſcribed by Dr. Darwin in his Phytologia. "In the tulip root diſſected in the early ſpring, juſt before it begins to ſhoot, a perfect flower is ſeen in its centre; and between the firſt and ſecond coat, the large next year's bulb is, I believe, produced; between the ſecond and third coat, and between this and the fourth coat, and perhaps further, other leſs and leſs bulbs are viſible, all adjoining to the caudex at the bottom of the mother bulb; and which, I am told, require as many years before they will flower as the number of coats with which they are coated." It is evident from this deſcription, that the bulb of the tulip is as really coated as that of the onion. Indeed it had been arranged by Mr. Ray among the tunicated bulbs long before the time of Linnæus. It differs only in having its coats more fleſhy, and leſs eaſily ſeparated from each other; characters found in a ſtill greater degree in ſeveral other bulbs which are, nevertheleſs, by no means truly ſolid.

It appears to us that no proper bulb is or can be ſo. If we adhere to the idea given of it by Linnæus, as a kind of hybernaculum, or winter quarters of the embryo plant, it muſt have a ſpace within it for that purpoſe: it muſt alſo, as we conceive, have ſcales or coats, within which cayeux, or offsets, for the future increaſe of the plant may be formed. The bulbs which have been called ſolid, have coats, either comparatively thick, and ſo cloſely compacted together, as, on a ſlight inſpection, to reſemble one indiſcriminate maſs; or, ſo ſmall and few, as to be exceeded in bulk by the full grown caudex. Hence has ariſen the difference in authors with reſpect to their diſtribution of this kind of root. The bulb of the crocus, for inſtance, has ſo dubious an appearance, that Mr. Ray, in his "Hiſtoria Plantarum," has placed it among the tuberoſe roots; but our great naturaliſt would not have ſo claſſed it, had it paſſed under his eye in an early ſtage of its growth, when it is clearly tunicated. It is conſidered by Philibert in his "Introduction a l'Etude de Botanique," lately publiſhed at Paris, as a mixed bulb, or rather a tunicated tuber. "In the bulb properly ſo called," ſays that acute naturaliſt, "the caudex is leſs in bulk than the tunics, and the rudiments of the ſtem embraced by them: in the tunicated tuber, the caudex is more conſiderable; and in the pure tuber, the tunics are entirely wanting." "Thus," continues he, "in the crocus are found only two or three tunics, which are finally lengthened into a ſpathe, and cloſely embrace the leaves implanted on the caudex; whereas, in the true bulb the leaves are ſurrounded by a great number of tunics which never increaſe in length. Take up a crocus ſome time after it has flowered, and you will find that the exterior coats are deſtroyed; the caudex is naked, and ſeveral ſmall bulbs appear ſeated on its convex ſurface; or, as it is ſomewhat ambiguouſly expreſſed in the original, "le caudex eſt a decouvert; & ſur pluſieurs de ſes points, vous remarquez de petits bulbes, naiſſans *de la tubéroſité même du caudex*." It ſeems evident from the latter part of the ſentence, that this ingenious writer, in the preſent caſe, confounded the tuber and the caudex, which are, in fact, always diſtinct parts of a plant; and was thence led to give to the root of the crocus a character which it does not poſſeſs. This root has nothing about it equivalent to a tuber; but is ſtrictly bulbous, and, like that of the onion, conſiſts of proper radicles, a caudex, and a tunicated bulb. The only difference between them ariſes from the relative proportion of the caudex and the tunics; a difference which, though ſufficiently obvious in the extremes, may be loſt in ſuch gentle gradations, as to render it impoſſible to draw a line of diſtinction, and which therefore cannot be received as a ſpecific character. In the inſtance before us, it exiſts, we believe, only in thoſe bulbs which have arrived, or are nearly arriving at maturity, and are about to produce flowers. We this day, March 12th, diſſected a young bulb which had produced leaves above ground, but would not have flowered during the preſent year. Its coats bore a conſiderable proportion to the caudex, and contained within them, diſtinctly formed, two new bulbs, each encloſing an embryo plant, furniſhed with the rudiments of its future leaves. An older one, in flower, examined at the ſame time, was, to all appearance, completely ſolid, with the exception, however, of the uſual thin, brown, dry, and looſe envelopes, which were, doubtleſs, the ſhrivelled remains of the former coats. All the reſt was the proper caudex, greatly increaſed in ſize, and having on it, at different diſtances from the central flower-ſtalk and leaves, two cayeux, or offsets, ſeated on its naked ſurface. Each of theſe offsets conſiſted of an apparently new and very ſmall caudex ſpringing from a ſhallow concavity in the ſurface of the old one, and of numerous coats much exceeding their proper caudex in bulk, and all extended either into the ſheaths, the leaves, or the ſpathe of the future flower. Another mature plant had two flowering ſtems proceeding from two bulbs, ſo cloſely connected together as to reſemble one, but ſeparated near the top by the uſual brown membranous coverings. Theſe bulbs were, doubtleſs, formed in the ſame ſeaſon, and within the ſame coat of the parent bulb, on oppoſite ſides of the flowering bud of the preceding ſeaſon; and appear to have ſo far exhauſted the caudex, though now arrived at its full ſize, as to render it incapable of producing any more offsets.

The bulb of the common corn flag, deſcribed and figured by Malpighi, approaches ſtill nearer the naked deſcending caudex, or what has been improperly called the ſolid bulb. It was conſidered, indeed, by this eminent naturaliſt as a tuber, conſiſting of homogeneous matter collected into one continuous ſubſtance: but it is evident, from his deſcription, that it has the characters of a true bulb. The exterior ſurface of the tuber or bulb, ſays he, *ſtripped of its folioles and involucres*, preſents to the view various gems; and a little below their origin, leaves, as uſual, break out, which, being plucked off, leave fragments of their ſtalks, as repreſented in his figure, and give to the whole the appearance of a trunk or ſtem.

The root of the orobanche, figured and deſcribed by the ſame author, is of a more dubious nature. In the firſt place, it does not belong to the monocotyledinous diviſion of plants, in which the legitimate bulbous plants are uſually, if not always, found. In the next place, it produces on its ſurface ſcattered gems, each ſupported by an exterior, caducous leaf; ſome of which gems ſpring alſo from the ſtem, or aſcending caudex. We preſume, therefore, that it may be ſtyled a deſcending caudex, with germ-bearing leaves, analogous to thoſe of trees and ſhrubs. It may be proper, however, to remark, that Bernard Juſſieu, as we learn from La Marck's "Flore Françoiſe, Diſcours Preliminaire," p. 54. placed in the royal garden at Trianon, orobanche, lathræa, and ſome others, in the diviſion of the monocotyledinous plants. Anthony Juſſieu, on account of their having both a calyx and a corolla, and their evident affinity to other didynamous genera, has judged them to be dicotyledinous. What induced his illuſtrious uncle to think otherwiſe we are not told. The paraſitic growth of all the ſpecies of orobanche renders it difficult to aſcertain in what manner they ſpring from the ſeed: but the diſpoſition adopted by ſo eminent a botaniſt, and the deſcription of the root given above from Malpighi, ſeem to indicate a ſomething of a monocotyledinous character, and afford ground for a conjecture, that in theſe plants a connecting link between thoſe grand natural diviſions may be found.

The root of the common turnip (braſſica rapa) which has been called a bulb by many writers, though not by Linnæus, is nothing more than an intumeſcence of the deſcending caudex, produced by a luxuriant ſoil; and moſt generally the effect of cultivation, differing from the cultivated carrot (daucus carota), which no one ever thought a bulb, merely in form. Neither of them has any claim to the character of an hybernaculum.

The articulated, or jointed bulb, conſiſts of lamellæ or ſcales, linked or chained together; ſuch as are found on tuberous moſchatel (adoxa moſchatellina), the greater toothwort (lathræa ſquamata), and bulbiferous coral-root (dentaria bulbifera). The only inſtance of this kind of root given by La Marck, is that of white ſaxifrage (ſaxifraga granulata), but he thinks it ſhould rather be ranked with the tuberous than the bulbous roots.

Ventenat, in the "Botanic Dictionary," prefixed to his "Tableau du Regne Vegetal," confines the term bulb to thoſe which are ſtrictly tunicated or coated, among which, as we have ſeen, thoſe ſtyled ſolid by Linnæus ought to be placed; and has ranked with the tubers univerſally ſo called, (ſuch as thoſe of the common potatoe), the globular root of the turnip radiſh, (a variety of raphanus ſativus), intending, doubtleſs, to include the common turnip; the ſcaly root of the lily; the knotty root of the common dropwort (ſpiræa filipendula); the articulated root of tuberous moſchatel; the faſciculated root of aſphodelus luteus and creticus; the grumous root, of the garden ranunculus (R. Aſiaticus); and the ſcrotiform, or didymous root of ſeveral ſpecies of orchis. We are inclined to think that this able botaniſt is right in ſeparating all theſe from the proper bulb; the eſſential character of which will then depend on its tunicated ſtructure, and the difference of the ſpecies will ariſe from the various thickneſs of the coats, and the proportion of their whole ſubſtance to that of the deſcending caudex: but the remaining ones are ſo diſſimilar to each other in ſeveral important reſpects, that they cannot, with any degree of preciſion, be called by the ſame name.

The true diſtinction between a bulb and a tuber appears to us to be in their relative ſituation with reſpect to the deſcending caudex. The bulb *crowns* the proper root, and has the caudex interpoſed between it and the radicles. The tuber is ſituated *under* the caudex, either on the ſame plan with the radicles, as in ſome ſpecies of orchideæ; or, ſtill lower, when it is evidently an intumeſcence of the radicle itſelf, as in the common potatoe. Linnæus, in his practical works, uniformly calls thoſe roots of the orchideæ, which anſwer this deſcription, bulbs; ſolely, it ſhould ſeem, on account of their general appearance; for they are not mentioned under any of his four diviſions, and do not correſpond with either of the definitions quoted above from the "Philoſophia Botanica," and the "Termini Botanici." That they do not eſſentially differ from the tuber of the common potatoe, is evident from the ſteps by which, in different ſpecies, they approach that well known and invaluable eſculent. In orchis bifolia, pyramidalis, uſtulata, &c. they ſpring immediately from the caudex along with the proper radicles: in orchis maſcula, ophrys apifera, &c. they ſwell ſuddenly from the radicle itſelf at a ſmall diſtance from its origin: and in ophrys monorchis, the new tuber is ſo far from the caudex as to be apparently not different from that of the potatoe. Theſe ſcrotiform tubers differ only in number from the palmate, faſcicled, and aggregate tubers of other ſpecies, between which, and thoſe of common pilewort (Ranunculus ficaria), aſphodelus luteus, &c. as far as the ſubject has been hitherto inveſtigated, no certain line of diſtinction can be drawn. All the radicles of ophrys nidus avis, birds'-neſt orchis, are ſwollen into tubers. The rare ophrys Loeſelii appears to differ from all the reſt of its natural family, in having a true bulb. A tuber, therefore, is an intumeſcence of the radicle, as the turnip, carrot, &c. are of the caudex; and, like them, may poſſibly be, in ſome caſes, merely a reſervoir for the nouriſhment of the preſent ſtem, particularly in a droughty ſeaſon. In this light the ſingular tubers of ſpiræa filipendula are conſidered by Dr. Smith. But it is more commonly, and as no actual obſervations have been made on the roots of filipendula to determine the queſtion, we are rather inclined to think it always, a real hybernaculum, having imbedded in its ſubſtance the rudiments of one or more future buds in a leſs advanced ſtate than that of the bulb. When the tuber is ſmall, and contains only a ſingle bud, as in ſeveral leguminous plants, and perhaps ſome graſſes, it is called a tubercle.

Ventenat is probably correct in placing the grumous root of the garden ranunculus under this head. But the ſcaly root of the white lily, &c. differs eſſentially from the tuber in being placed upon the caudex; as it does from the true coated bulb, in having a looſer texture; being, in fact, compoſed of unconnected ſcales, which, by their concave ſhape, are ſo adapted to each other, as to produce the appearance of a bulb. The ſcales of common wood ſorrel (oxalis acetoſella) are of the ſame kind, but ſmaller, and ſomewhat leſs compact: thoſe of tuberous moſchatel have, in a ſtill leſs degree, the form of a bulb: and in the bulbiferous coralwort the reſemblance totally vaniſhes. They all, we apprehend, agree in having the rudiment or bud of a future plant ſituated at their axils, to protect which ſeems their proper uſe; and if torn off with a ſmall part of the caudex, and planted in a ſuitable ſoil, will readily take root. Radical fibres are indeed plentifully thrown out under the ſcales of tuberous moſchatel while they are attached to the parent plant; they are found more ſparingly in bulbiferous coralwort; and ſometimes, as appears from Malpighi's figure, occur in the white lily. Roots of this kind ſeem to form a connecting link between the true tunicated bulb, and the proper bud or gem of the aſcending caudex in trees and ſhrubs. The greater toothwort, having no other radicles, is, we conceive, rather allied to the ophrys nidus avis; and in this opinion we have the ſatisfaction to find that we are ſupported by the authority of Dr. Smith. See Engliſh Botany, p. 50. The granules of the white ſaxifrage, which La Marck conſiders as tubers, more nearly reſemble the proper bulb, being ſeated on the deſcending caudex, which throws out radicles beneath them, and may be regarded as bearing ſome affinity to what Linnæus calls ſtem-bulbs, though he has conſtructed his definition of the term bulb ſo as to exclude them. They are placed either in the axils of the leaves, as in lilium bulbiferum, dentaria bulbifera, &c.: or on the common receptacle of the head of flowers, as in ſeveral ſpecies of allium: or, within the calyx, inſtead of a proper ſeed, as in polygonum viviparum. Botaniſts have paid little attention to their natural hiſtory; and have, for the moſt part, done nothing more than announce their exiſtence. We know not that any inquiry has ever been made, whether thoſe which are found in the three very different ſituations juſt mentioned are preciſely of the ſame nature and ſtructure, or whether they do not ſo far differ from each other as to render it expedient to give them diſtinguiſhing names. It appears from Dr. Darwin's deſcription of what he calls the ſummit bulbs of allium magicum, that in every thing but ſituation they are exactly ſimilar to the root bulb of that and other kindred plants. "In cutting one of them horizontally," he tells us in his Phytologia, "I obſerved three young bulbs incloſed in the concentric fleſhy membranes of the ſummit bulb in the following manner: five thick, fleſhy, concentric coats of the general ſummit bulb being taken away, there appeared one ſingle naked ſmall bulb; and on the ſixth coat being removed, two other bulbs became viſible, which were included in it." A philoſophic view of all the different methods in which plants are propagated without the intervention of an impregnated germ; and of the order in which they are connected together, ſo as to form a regular gradation from the gem or proper ſtem-bud to the tuber of the common potatoe and the tubercles of vicia, lathyroides, and many other plants, is one of the numerous deſiderata in vegetable phyſiology. The hiſtory of bulbs alone would require a long courſe of experiments.

Bulb, in *Vegetable Anatomy*. This term is commonly applied to the enlargements of the roots of many herbaceous plants, which are therefore ſaid to poſſeſs *bulbous roots*. See Bulbous Roots. The true bulb, however, does not in ſtrictneſs conſtitute any part of the root, but in its ſtructure and uſes bears a perfect analogy to the bud. See Bud. Bulbs are in ſome inſtances met with in the axillæ of the leaves, as in the *lilium bulbiferum*, and even in the flower itſelf, in many ſpecies of *allium* and *agave*; but their moſt uſual ſituation is upon the root. It is there that they are found in the *hyacinth*, *tulip*, the *lilies*, the *common onion*, and a number of the herbaceous monocotyledons. The root in all theſe inſtances is an irregular circular plate, from the lower part of which proceeds a tuft of the fine or fibrous roots; the upper part ſuſtains the bulb.

The bulb is compoſed of a number of laminæ, which are placed one upon another; and contain in their centre the embryo of the plant.

When the laminæ have not been expoſed to the air, they are thick, and loaded with juices, are generally of a white colour, and conſiſt chiefly of parenchyma, in which are ſpread ſome fibres, forming nervures. They reſemble very much etiolated leaves.

When the bulbs have been removed from the earth, and kept for any length of time in an open and dry ſituation, the external layers ſhrink up, become thin and gloſſy upon the ſurface, and often acquire a brilliant metallic colour.

The laminæ in the *onion*, *hyacinth*, *tulip*, and many others, conſiſt of circular tunics, the one entirely enveloping the other; but in the *lilies* they aſſume the form of ſcales, and more exactly correſpond with the coverings of buds. See *Plate* II. in *Vegetable Anatomy*; *fig.* 18. ſhews the bulb and root of the *onion*; *a* is the bulb, which has the ſuperior part cut off to bring into view the concentric layers of which it is compoſed; *b* indicates the circular plate forming the common centre of the fibrous roots, which are marked by *c*. *Fig.* 19. of the ſame plate, exhibits the bulb of a *lily*, which is made of thick imbricated ſcales; from the baſe which ſupports the ſcales the fibrous roots take their origin.

The pulpy laminæ, which conſtitute the great maſs of all bulbs, are analogous to the ſcales of the bud, and, like them, ſerve to protect the young plant or flower from all external influences, until the embryo attains a certain degree of developement, or becomes vigorous enough to be nouriſhed by its own independent actions. The embryo in the bulb, as in the ſeed and bud, is always formed in the year preceding its evolution. Thus we may clearly diſcern in the bulb of the *tulip*, as early as the month of Auguſt, the lineaments of the flower which is to make its appearance the enſuing April. See *Plate* II. of *Vegetable Anatomy*. *Fig.* 20. repreſents a *bulb* of the *tulip*, cut down through the middle in the month of September; *a a* the various inveſtments of the bulb; *b b* the innermoſt tunics, thinner than the reſt, and containing the young flower; *c* the embryo tulip, implanted as it were in the circular root, which ſerves as the baſis of all the parts of the bulb; *d* the circular plate, or common radicle.

As bulbous plants do not produce buds in the axillæ of their leaves, the circular root, which ſupports the bulb, gives origin to ſmall bulbs, which are in many reſpects analogous to the lateral buds. They exiſt, like them, for a certain period in an immature or embryo ſtate, incloſed by the leaves or tunics of the parent bulb. They are formed in many ſpecies at the commencement of the ſeaſon of vegetation; when they become apparent, they are as ſmall as a grain of corn; they increaſe at firſt ſlowly, but afterwards they grow with rapidity, and when the flower is ready to blow, they acquire fibrous roots preparatory to their detachment from the parent bulb. When the root-buds approach maturity, the bulb, from whence they ariſe, ceaſes to vegetate, and ultimately dies and rots. It is in this manner that the root of a tulip becomes apparently removed from its ſituation, the original bulb being replaced by others which produce the flowers of the following year.

There are ſome bulbs, as thoſe of the *hyacinth*, which furniſh, for ſeveral years, the lateral bulbs or root-buds; but in theſe caſes it is only at the end of two or three years that the ſmall bulbs attain the magnitude of the original one. If, however, they be detached during the firſt year, they will grow independently of the parent bulb, which in this caſe does not periſh, but continues to exiſt for ſeveral years, and to produce new offsets.

Bulbs, like buds, may be diſtinguiſhed into *leaf bulbs* and *flower bulbs*; as an example of which, let a ſeed of tulip be ſown, it produces in the firſt ſummer a plant, which dies in the autumn, but leaves in the earth one or more bulbs. Theſe afford ſtronger plants, the enſuing ſpring, than thoſe of the firſt year, but which do not yet bear flowers. They alſo periſh in the autumn, and leave behind them other leaf bulbs, ſtronger or more perfect than thoſe of the preceding year; and a ſucceſſion of leaf bulbs is thus generated for four or five years, until at length the bulb acquires ſufficient vigour for ſeminal generation; and then it produces, in its place, a large flower bulb, ſurrounded by ſeveral leaf bulbs.

BULBINE, Plinii, in *Botany*. See HYACINTHUS COMOSUS.

BULBINE, Hort. Clif. See ANTHERICUM FRUTESCENS and ALOIDES.

BULBINE, Gærtner. See CRINUM ASIATICUM. Gærtner's crinum is the agapanthus of L'Heretier, Schreber, and this dictionary.

BULBOCASTANUM, C. Bauh. Tournefort. See BUNIUM.

BULBOCASTANUM, bulboſa. C. Bauh. See CHÆROPHYLLUM BULBOSUM.

BULBO-CAVERNOSI, in *Anatomy*. See ACCELERATORES URINÆ.

BULBOCODIUM, in *Botany*, (from Βολβος, a bulb, and Κωδιον, wool.) Linn. gen. 407. Reich. 440. Schreb. 555. Willd. 624. Juſſieu 54. Claſs and order, *hexandria monogynia*. Nat. ord. *Spathacei*, Linn. *Narciſſi*, Juſſ.

Gen. Char. *Cal.* none. *Cor.* ſix-petalled, funnel-ſhaped; claws very long, linear; throat connecting the petals; petals lanceolate, concave. *Stam.* filaments ſix, awl-ſhaped, inſerted on the claws of the petals; anthers incumbent. *Piſt.* germ ovate, awl-ſhaped, obtuſely three-cornered, ſuperior; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas three, oblong, erect, channelled. *Peric.* capſule triangular, acuminate, angles obſcure, three-celled; ſeeds numerous.

Obſ. It has ſometimes only four ſtamens and four petals.

Spec. B. *vernum*, La Marck, Illuſt. Pl. 230. (Colchicum vernum. Cluſ. Park. Ger. emend. Ray.) *Root* bulbous. *Leaves* three, lanceolate, enveloped in their lower part by a thin membranous ſheath. *Flower* little, if at all longer than the leaves, white at firſt, but afterwards acquiring different ſhades of purple, riſing almoſt immediately from the root; borders of the petals arrow-ſhaped, and their narrow acuminate ſegments ſo fitted to each other, and ſo cloſely connected, as to give the whole the appearance of a monopetalous corolla, like that of colchicum. *Stamens* ſhorter than the petals. It flowers early in the ſpring, and has the general appearance of the crocus, from which it differs in the number of its ſtamens, as it does from colchicum in having only one ſtyle. Lam. Encyc. and fig. A native of mountainous ſituations in Spain, the ſouth of France, and Ruſſia. It appears to have been cultivated in England by Parkinſon, ſo early as 1629, but is now become very rare in our gardens, its bulbs being tender, and not much inclined to increaſe. It may be propagated by offsets like other bulbous rooted plants, removed ſoon after the leaves decay, but this ſhould not be done more than once every three years. It may alſo be produced from ſeed ſown at the latter end of September, or any part of October, in pots filled with freſh loamy earth, where they ſhould remain, only varying the ſituation according to the ſeaſon: till the next ſummer but one, when, as ſoon as their leaves are decayed, the roots ſhould be taken up, and planted in the borders of the flower garden. Miller.

BULBOCODIUM, J. Bauh. hiſt. See NARCISSUS PSEUDO-NARCISSUS and N. MINOR.

BULBOCODIUM, Rai. ang. See ANTHERICUM SEROTINUM.

BULBOCODIUM, *græcum*, Tourn. See ANTHERICUM GRÆCUM.

BULBOCODIUM, *crocifolium*, Tourn. Mil. Icon. See IXIA BULBOCODIUM.

BULBOUS *roots*, in *Gardening*, are ſuch roots as are compoſed of bulbs, and which differ eſſentially from the tuberous roots, which conſiſt of an entire ſolid fleſhy ſubſtance. Under this head are comprehended ſome eſculent plants, ſuch as garlick, onions, leaks, ſhallots, &c. and a numerous train of flowery plants, moſtly herbaceous perennials, producing beautiful flowers, many of them being hardy enough to ſucceed in beds and borders in the open ground, and others in the ſtove or green-houſe. The principal of the flowery tribe belong to the following genera: the *amaryllis*, including the Guernſey lily, bella-donna lily, Jacobea lily, &c.; *narciſſus*, or daffodil, including jonquils, hyacinths, tulip, fritillaria, and crown imperial *lilium*, or common lily, including martagons; *ornithogalum*, or ſtar of Bethlehem; *galanthus*, or the ſnow-drop; *leucojum*, or great ſnow-drop; *ſcilla*, or ſea onion; *colchicum*, or meadow ſaffron; *albuca*, or baſtard ſtar of Bethlehem; *muſcaria*, or muſk and grape hyacinth; *iris*, the bulbous and perſian; *haemanthus*, or blood flower; *allium*, or moly; *crocus*, including ſpring and autumn kinds; *bulbocodium*, and *pancratium*, or ſea daffodil. The different ſpecies and varieties of which are ſeen under their reſpective genera.

Bulbous roots may in fact be ſaid to be annual or biennial, as the ſame individual root laſts for a certain time only, in ſome not more than a year after having attained a flowering ſtalk; in others, longer, as previous to their diſſolution, they afford from their ſides a ſupply of ſuckers or offsets to perpetuate the reſpective kinds, ſo that at the end of many years, what is ſtill often conſidered as the ſame individual root, is in reality another. All bulbous rooted plants renew their leaves and flower ſtems annually; and their principal ſeaſons for flowering are at different times during the ſpring and ſummer months, ſome producing their flowers at one time, and their leaves at another, as in ſome ſpecies of amaryllis and colchicum: others produce their flowers and leaves together, as in the hyacinth, tulip, narciſſus; and the leaves and flower ſtems of all the ſorts periſh annually at a certain period after flowering, after which time, the root becomes in a ſtate of maturity in reſpect to its growth for a few weeks, in which new fibres are prepared for the future plant. This is the proper time to remove the roots, either to ſeparate the offsets for propagation for planting the roots in freſh prepared earth, or for removing them to any other part of the garden or other ground. And, likewiſe, for preſerving the bulbs out of ground for autumn and ſpring planting, when the beds or borders can be more conveniently prepared for their reception; for moſt ſorts taken up at this period may be kept out of ground ſeveral months; or if occaſion require, ſome ſorts admit of being kept out of the ground from the time of the flowers and leaves decaying, until the following ſpring, as is often practiſed when intended for ſpring planting, to obtain a longer ſucceſſion of blooms by ſucceeding the autumn plantation.

Bulbous roots may, however, remain ſeveral years unremoved, and when greatly increaſed by offsets be only taken up at the proper period to ſeparate the increaſed progeny, and replanted again as may be neceſſary. It is, however, particularly neceſſary to take up all the choice kinds of bulbous roots annually to ſeparate the offsets for increaſe, as well as to prepare the earth of the beds and borders afreſh, to promote the beauty and merit of the ſucceeding year's bloom, eſpecially for the curious tulips, hyacinths, narciſſuſſes, &c. The more inferior ſorts of bulbous roots ſhould alſo be removed every other, or as often as their offsets are conſiderably increaſed in number, which, if permitted to remain ſo long as to increaſe into large bunches, cramp each other in growth, and produce ſmall ill-nouriſhed flowers of little beauty.

All the bulbous roots which have been taken up at the above period in ſummer, ſhould be chiefly planted, where practicable, again in the following autumn, about October or November, as they flower much ſtronger than when kept out of the ground till the ſpring ſeaſon.

The Rev. Mr. Marſhall, in his work on gardening, however, directs that autumn flowering bulbs, when their leaves are decayed, ſhould be taken up in May, and that none of the kinds remain too long without being taken up, as they are liable to be cramped and confined in their growth, and of courſe decline in their beauty.

It is recommended as the beſt practice with flowering bulbs, to plant the ſpring kinds in the beginning of the autumn, as in the latter end of September, or beginning of the following month; and thoſe of the ſummer flowering ſorts in October, or the ſucceeding month; and thoſe of the autumn blow in the latter part of July, or in the following month; too early and too late planting being equally to be avoided, as when put in too ſoon, they are liable to be impaired by being too forward when the winter and early ſpring proves ſevere, and when delayed too long they are apt previouſly to exhauſt themſelves by forming new root fibres.

Bulbous roots of the laminated kinds, ſuch as lilies, ſhould not be kept out of the ſoil longer than ſix or eight weeks; the ſummer flowering ſorts being ſet at ſeparate periods in the autumn, and in the beginning of the year before the latter end of February, ſo as to produce a proper ſucceſſion of flowers.

With others of the ſame nature, this method is alſo common, but they ſhould have dry ſandy ſoils in order to ſtand the winter without rotting, where there happens to be much wet, ſucceeded by ſevere froſts. In theſe caſes, the protection of mats and the haulm of peas may often be found uſeful. When bulbous roots have remained in the ground longer than the proper period, ſo as to have ſtruck out new roots, they ſhould always be removed with bulbs of earth, as where this is not attended to, they grow weak. On this account, the exact period for removal ſhould be attended to with great care.

The offsets of bulbous roots ſhould in general be put into the ground a conſiderable time before the periods of planting out the full ſized roots: thoſe from laminated bulbs moſtly requiring to be immediately planted.

The ſoil moſt adapted to the growth of bulbous roots, in general, is that of a ſandy loam where there is no ſtagnation of moiſture below; many ſorts of theſe roots are not however very difficult in this reſpect, provided there be not an over proportion of moiſture. The ground for them ſhould be prepared by digging it to the depth of ſix, eight, or ten inches, or more, reducing it well in the operation. After this has been done, it ſhould remain a week or ten days before they are put in to become perfectly ſettled.

In regard to the diſpoſal of theſe roots in planting, it is generally for the more large and curious ſorts in beds a little rounded, of three or four feet in width according to circumſtances; or in patches in the common borders, for the ſmaller kinds, in cluſters of three, four, or five together, according to their growth. With the large ſorts, ſuch as the white orange lilies, crown imperial, &c. one in a place is ſufficient. The roots of fancy flowering bulbs, when planted in beds, are uſually put in rows, eight or more inches apart, and from five to ſeven inches diſtant, in proportion to their growth. Some prefer leſs room; but where a ſtrong blow is required, theſe diſtances are not too great. Hyacinths ſhould in general have the ſpace of ſeven or eight inches, and tulips eight or nine, though it is often the practice to allow the former not more than five or ſix inches. The depths of ſetting roots of the bulbous kinds are, in general, according to their ſizes or growths, as three or four inches from their upper parts. But ſome ſorts, as the crown imperial, and crocus, will riſe from a conſiderable depth, as ſix inches or more, and others from ſtill greater, which has induced ſome perſons to plant them to ſuch depths as are ſufficient to prevent their being injured by digging over the ſurface ground; but in theſe caſes, they muſt be liable to rot in wet ſeaſons.

Different methods are employed in planting bulbous roots, as thoſe of putting them in by the dibble, and in drills drawn by a hoe. The latter is in general to be preferred, as they are apt to lie hollow in dibbling, while by placing them in a drill, they may be gently preſſed into the ſoil, and be perfectly covered up. When they are ſet in the beds, the beſt method is to draw off the mould to a ſufficient depth to one ſide, leaving the ſurface perfectly level, watering it a little in dry ſeaſons, and then forming it into proper ſquares, placing a bulb in the middle of each, covering them with the mould drawn off, ſo as to leave the bulbs in an upright poſition. After the bulbs have been put into earth, if the weather continue very dry, a little water ſhould be ſprinkled over the beds or other places, to forward their vegetation, and prevent their rotting. Some protection is neceſſary in raiſing the more curious ſorts of theſe roots, as before they appear during the winter, the beds ſhould be ſheltered from too much wet, in order to guard againſt the effects of froſt. And when they firſt preſent themſelves above the ground, they ſhould have the protection of an awning of cloth, mats, or other contrivances, in the nights when the weather is ſevere; but they ſhould not remain on in the day time, when it is tolerable. Some ſort of covering of the ſame ſort is alſo neceſſary when they are in blow, to ſhield them from the ſun and rain, and continue them much longer in a perfect ſtate of flowering.

There is a method of getting ſpring flowering bulbs forward, which is by ſetting them in pots or glaſſes for the purpoſe, in warm rooms, or in moderate hot-beds, as by theſe means, they flower in winter. The hyacinth and narciſſus, as well as ſeveral others, may be managed in this way with facility. Theſe ſhould be placed in pots of light dry ſandy earth in autumn, as about the beginning of October, water being occaſionally given. They may likewiſe be put into glaſſes at the ſame period, and occaſionally every three or four weeks, till the latter end of February, in order to have them flower in ſucceſſion. In this method the bottom of the bulbs ſhould be juſt immerged in the water, which ſhould be renewed once a week. or oftener, ſo as to keep it conſtantly up to the bottom of the bulbs. Soft water is the beſt for this purpoſe. The blow is ſaid, by Mr. Marſhall, to be conſiderably ſtrengthened, by diſſolving a portion of nitre, about the ſize of a pea, in the water each time it is changed.

Beſides the raiſing of flowers from root bulbs in theſe modes, there are ſome produced from little bulbs, forced on the ſides of the top parts of the ſtems, as in the bulbiferous lily. Theſe ſhould be taken off about Auguſt, and after being dried a little in the ſun, planted out in rows in the nurſery in the ſame manner as the offsets.

By theſe means the various bulbous-rooted plants may be continued; but, in order to produce *new* varieties, recourſe muſt be had to ſeed, which ſhould be carefully ſaved, when fully ripened, from the beſt and moſt curious flowers; and which, after having been hardened a little in the ſun, ſhould be ſown in boxes of light rich earth, ſetting them in ſheltered ſunny ſituations, but not under covers. This is uſually done about the latter end of Auguſt, or beginning of the following month, the ſeeds of hyacinths, tulips, and other large ſorts, being covered to the depth of nearly an inch. A little water ſhould be occaſionally given, when the ſeaſon is dry, to keep the ſoil moiſt, but not wet. The ſeeds may be protected till they come up by a little covering of ſome kind of ſtrawy material. Other ſowings may be made in March, or the following month, the boxes being brought into ſouthern expoſures, where there is only the morning ſun, towards May. The young ſeedling plants ſhould be protected in ſevere and froſty weather, and where there is much rain, by means of mats, hoops, and reed hurdles, or other contrivances, to break off the north-eaſt winds. The young plants ſhould likewiſe be kept properly thinned out, and perfectly free from weeds; and when the ſtems decay, a little mould ſhould be put upon them to the thickneſs of half an inch. In the following ſummer when the leaves decay, as about Auguſt, they ſhould be planted out into nurſery beds at the diſtance of two or three inches, according to the kinds. Some ſorts, as the hyacinth and tulip, require to be removed from this into another nurſery bed, as ſoon as their tops decline, and ſet at ſix inches diſtance; or it is probably a better practice to thin them out to this diſtance in the firſt beds. After this they are to be managed as blowing plants.

Theſe ſorts of roots of plants blow at different lengths of time after being raiſed; ſome in the following year, and others not till ſeveral years afterwards, as will be explained under the culture of each of the different ſorts.

The bulbous rooted plants conſtitute ſome of the moſt ſhowy and ornamental flowers of the beds, clumps, and borders of the garden and pleaſure ground, affording conſiderable variety from their blowing at different periods during the early ſpring, ſummer, and autumnal ſeaſons.

BULCARD, in *Ichthyology*, a name under which Willughby deſcribes *Blennius pholis*, the ſmooth Blenny; a fiſh found on the Corniſh and other coaſts.

BULCKAU, or Bulka, in *Geography*, a town of Germany, in the arch-duchy of Auſtria, ſeated on a river of the ſame name, which runs into the Taya, 4 miles W. of Laab; the town is diſtant one mile W. from Schrattentaal.

BULDAT, a town of the Arabian Irak; 20 miles E. of Bagdad.

BULDURUISKOI, a town of Siberia; 132 miles E.S.E. of Nertchinſk.

BULEPHORUS, in the court of the eaſtern emperors, was the ſame officer with *ſummæ rei* RATIONALIS.

BULEUTÆ, in the cities of Greece and Aſia, were the ſame with the *decuriones* at Rome. Calv. Lex. Jur. p. 128. See Decurio. The word has been ſometimes alſo uſed to denote *ſenators*. See Senator.

BULEUTERIA, Βουλευτηρια, in *Grecian Antiquity*, public halls at Athens, where companies of tradeſmen aſſembled to deliberate on commercial concerns. Trade was much encouraged in this city: and if any one ridiculed it, he was liable to an action of ſlander. Solon himſelf was engaged in merchandize; the founder of the city Maſſilia was a merchant; Thales, and Hippocrates the mathematician, traded; and Plato ſold oil in Egypt. Under the Roman empire, the ſenate, or general council of Grecian cities, was called "Bulé," from Βουλη, *conſilium*: its members were denominated "Buleutæ," and the place where it met at Syracuſe, "Buleuterium."

BULFINCH'S Harbour, in *Geography*, lies on the north-weſt coaſt of North America, in N. lat. 46° 52′ 30″. W. long. 123° 7′ 30″.

BULGANAC, a river on the ſouth-weſt coaſt of the Crimea, in the Black Sea, falling into the ſea in N. lat. 44° 38′. E. long. 34° 50′.

BULGAR, a mountain of Aſiatic Turkey, in the province of Caramania; 30 miles S. of Cogni.

BULGARIA, Great, the name given by ſome geographers to a province of Aſia, in Ruſſian Tartary, ſituated beyond the Volga, on the banks of the rivers Kama, Bielaia, and Samara, but now incorporated into the dominions of Ruſſia, and forming part of the government of Caucaſus. Its ancient capital was Bulgar, Beloger, Belgard, or Borgard, which lay 30 verſts below the mouth of the Kama, and 5 from the Volga; but according to other accounts, the Volga flowed by the town. Borgard was firſt ravaged by the Tartars in 1234, and in 1500 entirely deſtroyed by the Ruſſians. See Bulgarians.

Bulgaria, *Little*, a province of European Turkey, bounded on the north by the Danube and Walachia, on the eaſt by the Black ſea, on the ſouth by mount Hæmus, which ſeparated it from Romania and Macedonia, and on the weſt by Servia. It was formerly called the Lower Myſia, but derives its preſent name from the Bulgarians, by whom it was occupied. Its extent is about 280 miles in length, and 180 in breadth. The country in general is mountainous, but the plains and vallies, waſhed by the Danube and rivers that flow into it, are rich and fertile, and produce corn and wine in great abundance. Its ancient capital was Ternowa, but its kings principally reſided at Nicopoli; but its preſent capital is Sophia. It now forms a part of the Ottoman empire. The inhabitants are moſtly Chriſtians of the Greek church, ignorant and ſuperſtitious, having one patriarch and three archbiſhops, ſubject to the authority of the patriarch of Conſtantinople. They are intermixed, however, with Turkiſh Mahometans and Jews. Their language is the Sclavonic, (which ſee,) but in pronunciation differing little from the Servian. The country is divided by the Turks into four Sangiakſhips, *viz.* thoſe of Bidin or Widin, Sardic comprehending Sophia, Nicopoli, and Siliſtria. The preſent inhabitants, though deſcended from anceſtors who diſtinguiſhed themſelves by their martial achievements, are occupied in graziery, agriculture, and handicrafts. This country is famous for a gate, conſtructed by the emperor Trajan in the hills ſouth of Sophia, among ſteep rocks and precipices almoſt inacceſſible, in commemoration of his having marched with his army along a road formed by himſelf through places that were before impervious. It conſiſts of two ſtone pillars, with an arch over them, repreſenting a gate; but is now in a mutilated and ruinous condition.

BULGARIANS, or Bolgarians, in *Ancient Hiſtory*, a tribe of Sclavonians, who are ſuppoſed to have inhabited Aſiatic Scythia and the countries lying north of the Caſpian-ſea, near the Volga, whence it is ſaid they obtained the name Volgari, which was changed into Bulgari; and thence their country was denominated Volgaria and Bulgaria. Others, however, reject this etymology, alleging that the Volga was anciently called Raa, or, in Arabic, Idel; and deduce the appellation of Bulgarians either from their famous and large city Belgard, or from the denomination of Bilirians which they aſſumed. The Bulgarians, after having extended their borders along the Don and the Yaik, about the Volga and the Kama, carried on a great trade to Perſia, Bucharia, India, Greece, and even to Italy and France, by the Euxine. They alſo traded conſiderably with the Ruſſians, and, by their inſtrumentality, with the northern nations. Bulgaria was therefore, in former times, the emporium of the European and Aſiatic commerce. The Bulgarian empire fell afterwards under the dominion of the Tartars, and when the Ruſſians conquered the Tartars, became ſubject to Ruſſia. Their country was rich and extenſive; its borders extended along the Volga, from the mouth of the Oka downwards to the Khoaliſſes, or Nether-Bulgarians, where they had their peculiar ſovereigns; and the Ares or Votiaks, along the Kama, were under their ſupremacy. It is not known how far it reached weſtward, and on the Don: however, the Tſcheremiſſes and Tſchuvaſches were ſubject to them. Their language was the Sarmatic. The ruins of large towns and ſtone buildings are evidences of their opulence, their civilization, and their induſtry; and the coins that are dug out of the earth, with Arabic and Indian inſcriptions, demonſtrate their extenſive commerce.

It was not till the reign of Zeno, about the year 485, that they began to be heard of and dreaded by the Romans. Ennodius, the moſt ancient writer who mentions them, informs us, in the panegyric which he compoſed on Theodoric, king of the Oſtrogoths, that they were a warlike and numerous nation, enured to the toils of war, ever ready to prefer death to ſlavery, and never known to have been put to flight, till they engaged this hero. From Aſiatic Scythia and other countries which they occupied, they advanced, in queſt of a more fertile country, to the Tanais, and from thence, in the reign of Zeno, to the banks of the Danube, under the conduct of their king or leader Bladinus. Having paſſed this river, they made an irruption into Thrace, with a view of ſettling in that country; but they were oppoſed by Theodoric, the Oſtrogoth, at that time general of the Roman troops in that province, and compelled to repaſs the Danube. In 499, they made a ſucceſsful irruption into Thrace, and committed dreadful ravages, and defeated the army of the emperor Anaſtaſius, commanded by Ariſtus, which was ſent to reſiſt them. Three years after this expedition they again invaded Thrace, and carried off an immenſe booty, of which they plundered the province. In 539, the 13th year of the emperor Juſtinian, they made an incurſion over the Danube into Moeſia, defeated the Roman troops, and were retreating with their ſpoils and captives, after having deſtroyed with fire and ſword what they could not remove, when they were attacked by Juſtinian's army under the command of an experienced officer, and obliged to ſurrender their booty and to ſave themſelves by flight. However, in the following year they again entered Thrace, which they plundered and laid waſte; but they were routed with great ſlaughter, and the loſs of many priſoners. For theſe victories the emperor aſſumed the appellation of "Bulgaricus," which appears on his coins. Hiſtory gives no account of them till the reign of Conſtantine III. or V. (Blair) ſurnamed Pogonatus, which commenced in the year 668. In his time they paſſed the Danube, and entering the Roman territories, committed great devaſtations in the provinces bordering on that river. They were feebly oppoſed by the powerful army of Conſtantine, and left at full liberty to ravage the open country at pleaſure. At length, in 678, Conſtantine agreed to pay them an annual penſion, on condition of their not infeſting the Roman territories, and joining his forces againſt all other barbarians, wherever he required their aſſiſtance. About this time ſome of them ſettled in the dukedom of Benevento.

It is ſaid that Conſtantine allowed them to ſettle in Lower Moeſia, to which they gave the name of Bulgaria, which this province ſtill retains. Other writers, however, ſuppoſe that they had ſettled there ſeveral years before the reign of Conſtantine. In 687, Juſtinian II. refuſing to acquieſce in the treaty ſtipulated with them by his father, invaded their country, and reduced them to great diſtreſs; but the Bulgarians, animated by deſpair, determined to make a laſt effort in defence of their liberties; and falling unexpectedly upon the emperor's army, put it to flight, and obliged him to confirm his father's treaty. In 713, they made an irruption into Thrace, and advanced to the gates of Conſtantinople, and after having ravaged the country, returned home, with an immenſe booty, unmoleſted. When Conſtantine Copronymus, in the 9th year of his reign, A.D. 749, ordered forts to be built on the borders of the provinces, adjoining the country of the Bulgarians, they remonſtrated; but their ambaſſadors were diſmiſſed with a diſdainful anſwer. Upon this the incenſed Bulgarians made a ſudden irruption into the Roman territories, and having laid waſte the country, returned home loaded with booty. The emperor collecting his forces, marched againſt them in perſon; but whilſt he was laying waſte their country, they took advantage of attacking him in a narrow paſs, obliged him to fly, and purſued him with great ſlaughter to the gates of Conſtantinople. In the years 763 and 775, the Bulgarians ſuffered great injury in their conflicts with the Romans; but upon the acceſſion of Leo IV. A.D. 775, he concluded a peace with their king, whoſe daughter Irene he had married; but his ſon and ſucceſſor Conſtantine Porphyrogenitus, in the 12th year of his reign, A.D. 791, deluded by ſome aſtrologers, attacked the Bulgarians, and was totally defeated. The Bulgarians renewed their irruption into the Roman provinces in the reign of Nicephorus; and the emperor retaliated by marching with a large army into their country, and ravaging it with fire and ſword. The ambaſſadors of the Bulgarians, who were ſent to him to ſue for peace, and to requeſt his leaving their country, were treated with ſcorn; upon which their king Crumus, actuated by deſpair and the thirſt of revenge, began with fortifying all the paſſes through which the emperor was to retire, and then proceeded to attack the Roman camp. This he forced, ſlew the emperor, and cut off almoſt his whole army. The ſavage conqueror ordered the head of Nicephorus to be ſtruck off, and after having expoſed it to public view, he incloſed the ſkull in ſilver, and uſed it in all grand entertainments inſtead of a cup. In 811 Michael I. aſcended the throne, and a peace was concluded between the Romans and Bulgarians; but it was of very ſhort duration. Crumus, offended by the treacherous eſcape of ſome Roman priſoners, levied a conſiderable army, entered the Roman territories, and aſſiſted by an Arabian in the uſe of military engines, reduced ſeveral fortified places, and ravaged the whole country. Among other cities which he reduced, he made himſelf maſter of Meſembria, in the vicinity of Mount Hæmus, and put the garriſon to the ſword. The emperor prepared for an engagement, and the two armies met in the neighbourhood of Conſtantinople. After a furious conflict of doubtful iſſue, the Romans were utterly defeated; and Michael retired to a monaſtery, and reſigned the purple to Leo V. A.D. 813. The Bulgarians wantonly triumphing in their ſucceſs, refuſed to liſten to any pacific overtures; and a ſecond engagement took place, in which the Romans, after an obſtinate reſiſtance, were routed. But whilſt the Bulgarians were buſily engaged in plundering the Roman camp, Leo renewed the fight and obtained a complete victory. The Bulgarians remained for five years in a ſtate of tranquillity; but at length, in the year 877, they took occaſion to re-enter the Roman territories, and in their uſual manner to ravage them with fire and ſword. A battle enſued, and the Roman army was routed. The priſoners were led by the victor in triumph round his camp, and having cauſed their noſes to be cut off, he ſent them, thus defaced, to Conſtantinople. After ſubſequent advantages gained on the part of the Bulgarians, and repeated defeats and ſevere loſſes ſuſtained by the Romans, Adrianople was beſieged and taken, A.D. 922; and preparations were made for beſieging Conſtantinople. But, before the cloſe of the following year, an interview took place between Simeon the king of the Bulgarians, and Romanus the eaſtern emperor, and a peace was concluded between them. In the year 970, the Ruſſi or Roſſi, who inhabited the preſent Podolia, invaded Bulgaria and ravaged the country; but having inveſted Adrianople with a powerful army of more than 308,000 men, they were defeated and cut to pieces by a body of 12,000 Romans. The Bulgarians ſubmitted to Zimiſces, their deliverer; but upon his death, A.D. 975, they revolted from the Romans and renewed their uſual ravages of their provinces. After a long and doubtful ſtruggle between the Bulgarians and the emperor Baſil, he at laſt prevailed, and, in the 44th year of his reign, A.D. 1018, reduced Bulgaria into the form of a Roman province. From this time the Bulgarians remained in ſubjection to the emperors of Conſtantinople, whom they powerfully aſſiſted both againſt the Latins and the Turks, and were, on that account, allowed to chuſe a king of their own nation, who nevertheleſs owned himſelf a vaſſal of the empire. The Bulgarians, however, revolted again in the reign of Iſaac Angelus, A.D. 1186. In 1275, Stephen, the fourth king of Hungary, having vanquiſhed the prince of Bulgaria and cut his whole army in pieces, obliged the Bulgarians to acknowledge him as their ſovereign. With the aſſiſtance of the Greek emperors they ſhook off the Hungarian yoke; but attempting, in 1369, to recover Adrianople, which had been taken by the Turks, they were totally defeated by Amurath I.; and Bajazet, who ſucceeded Amurath, made an abſolute conqueſt of the whole country in 1396, and reduced it to a province of the Turkiſh empire, in which ſtate it has continued ever ſince. Anc. Un. Hiſt. vol. xvii. Gibbon's Hiſt. Decl. and Fall of the Roman Emp. vol. vii. ix. x. xi.

BULGARIAN *Language*, the ſame with the SCLAVONIC, which ſee.

BULGNEVILLE, in *Geography*, a town of France, in the department of the Voſges, and chief place of a canton, in the diſtrict of Neufchateau, 3½ leagues ſouth of it. The town contains 955, and the canton 10,883 inhabitants. The territory comprehends 262½ kiliometres and 27 communes.

BULIA, or BULIS, in *Ancient Geography*, a maritime town of Greece, in the Phocide, ſituate towards the gulf of Corinth, near the frontiers of Bœotia. It had two temples, one of Bacchus and another of Diana; the ſtatues of which were formed of wood.

BULIMIA, in *Medicine*, a term ſignifying exceſſive hunger, from ϐȣ͂, a particle denoting exceſs, and λιμὸς, hunger. It is alſo called fames canina, fames lupina, dog's appetite, wolf's appetite, &c. This ſymptom occurs in caſes where the food is not retained long enough in the ſtomach to be digeſted, as in caſs of habitual vomiting, and in lientery; alſo where the aliment, duly prepared or concocted in the ſtomach, is nevertheleſs but ſcantily conveyed into the circulation, as in the caſe of worms, and obſtruction of the meſenteric glands; and it is ſaid that this ſymptom occurs where much acidity is preſent in the alimentary canal. Sauvages, with his uſual fecundity, has enumerated ſeven different ſpecies of bulimy; but in moſt of the inſtances which he has mentioned, it is rather to be regarded as a concomitant of other diſorders, than as a diſtinct and ſpecific affection. Ruyſch gives an inſtance of this complaint, which was connected with a dilatation of the pylorus, in conſequence of which the food ſlipped through the ſtomach into the inteſtines, before there was time for digeſtion to take place; and it is recorded by Lieutand, that upon opening the body of a patient who had died of a diſorder, in which a voracious appetite was a leading ſymptom, he diſcovered a preternatural termination of the ductus choledochus in the ſtomach. In this caſe the bile effuſed into the ſtomach ſeems to have kept up a conſtant irritation in that organ, and to have ſtimulated the ſtomach to expel the ingeſta before they could be duly acted upon by the principal agent in the work of digeſtion, the gaſtric fluid.

From theſe obſervations it is evident that the plan of treatment muſt be varied, according to the diverſity of the morbid conditions with which it is connected. Thus, when it is the conſequence of an immediate rejection of the food by vomiting, the irritability of the ſtomach ſhould be counteracted by mild gelatinous food, by opiates, tonics, &c. aided by ſtimulant epithems, and other topical applications. At the ſame time nutritive enemata ſhould be injected into the inteſtines. In like manner, when it is the conſequence of the food paſſing off too rapidly by ſtool (as in lientery), the remedies adapted to that condition of the body ſhould be reſorted to. (See LIENTERY.) If it proceed from worms, calomel, jalap, cowitch, and other anthelmintics, ſhould be preſcribed; if from meſenteric obſtruction, rhubarb, neutral ſalts, and afterwards chalybeates; and, laſtly, when it ariſes from acidity in the ſtomach and inteſtines, bitters and abſorbents ſhould be given.

After this view of the various cauſes of bulimy, and of the treatment as adapted to each of thoſe cauſes, we ſhall proceed to notice ſome remarkable and well-authenticated inſtances of this affection. In 1700 there lived at Stanton, ſeven miles from Bury, a labouring man of middle age, who for many days together had ſuch an inordinate appetite, that he would eat up an ordinary leg of veal, roaſted, at a meal. He would eat ſow-thiſtles, and various other herbs, as greedily as cattle are wont to do; and all he could get was little enough to ſatisfy his hunger. He voided ſeveral long worms. This caſe is related by Dr. Burroughs, in the 22d vol. of the Phil. Tranſ. Two other caſes are recorded in the 43d vol. of the ſame Tranſactions, one by Dr. Mortimer, the other by Dr. Cookſon. The ſubjects of this affection were in both inſtances boys. The firſt of them was 12 years old, and lived at Blade Barnſley, in Yorkſhire. His appetite was ſo ravenous, that if he was not ſupplied with food when he craved it, he would gnaw the very fleſh off his own bones. When awake he was conſtantly devouring. Nothing paſſed his ſtomach; it was always thrown up again. In the ſpace of ſix days he devoured 384 lbs. of liquid and ſolid food. The other boy was 10 years old, and had been ſeized with a fever about 15 months before, which continued for a fortnight, and was followed by conſtant vomitings. As in the former caſe, ſo in this, the food was no ſooner ſwallowed than thrown up again. In the ſpace of ſix days this boy devoured 371 lbs. of meat and drink, beſides 1 lb. 10 oz. of ſalt. After more than a twelvemonth from the firſt attack, he died greatly emaciated.

In the third vol. of the Memoirs of the Medical Society of London, is inſerted the hiſtory of a caſe of bulimy, accompanied with vomiting, wherein 379 lbs. of meat and drink were ſwallowed in the ſpace of ſix days, yet the patient loſt fleſh rapidly. A cure was effected by giving food boiled down to a jelly, frequently, and in ſmall quantities. In this form the food was retained, and the body being duly ſupplied with nouriſhment, the ſtomach and reſt of the ſyſtem recovered their proper tone and energy. But the moſt extraordinary inſtance of bulimy which perhaps ever occurred, is that recorded in the third vol. of the Medical and Phyſical Journal, communicated by Dr. Johnſon, commiſſioner of ſick and wounded ſeamen, to Dr. Blane, formerly phyſician to the navy. The ſubject was a Poliſh ſoldier, named Charles Domery, in the ſervice of the French, on board of the Hoche frigate, which was captured by the ſquadron under the command of ſir J. Borlaſe Warren, off Ireland, in 1799. He was 21 years of age, and ſtated that his father and brothers had been remarkable for their voracious appetites. His began when he was 13 years of age. He would devour raw and even live cats, rats, and dogs, beſides bullock's liver, tallow-candles, and the entrails of animals. One day (viz. September 7th 1799) an experiment was made of how much this man could eat in one day. This experiment was made in the preſence of the before-mentioned Dr. Johnſon, admiral Child, and Mr. Foſter, agent for priſoners at Liverpool, and ſeveral other gentlemen. He had breakfaſted at four o'clock in the morning on 4lbs. of raw cow's udder; at half paſt nine o'clock there were ſet before him 5lbs of raw beef and 12 tallow candles of 1lb. weight, together with 1 bottle of porter; theſe he finiſhed by half paſt ten o'clock. At one o'clock there were put before him 5lbs. more of beef, 1lb. of candles, and 3 bottles of porter. He was then locked up in the room, and ſentries were placed at the windows to prevent his throwing away any of his proviſions. At two o'clock he had nearly finiſhed the whole of the candles, and great part of the beef; but without having had any evacuations by vomiting, ſtool, or urine; his ſkin was cool, pulſe regular, and ſpirits good. At a quarter paſt ſix he had devoured the whole, and declared he could have eat more; but the priſoners on the outſide having told him that experiments were making upon him, he began to be alarmed. Moreover, the day was hot, and he had not had his uſual exerciſe in the yard. The whole of what he conſumed in the courſe of one day amounted to

Raw cow's udder - - -	4lbs.
Raw beef - - -	10
Candles - - -	2
	16lbs.

Beſides 5 bottles of porter.

The eagerneſs with which this man attacked his beef when his ſtomach was not gorged, reſembled the voracity of a hungry wolf; he would tear off large pieces with his teeth, roll them about his mouth, and then gulp them down. When his throat became dry from continued exerciſe, he would lubricate it by ſtripping the greaſe off a candle between his teeth; and then wrapping up the wick like a ball, would ſend it after the other part at a ſwallow. He could make ſhift to dine on immenſe quantities of raw potatoes or turnips, but by choice would never taſte bread or vegetables. He was in every reſpect healthy, 6 feet 3 inches high, of a pale complexion, grey eyes, long brown hair, well made but thin, his countenance rather pleaſant, and he was good-tempered. His evacuation by the bowels was by no means proportioned to the quantity of food he devoured, and even did not exceed that of other men; but his perſpirations were profuſe, not only when in bed, but alſo when up and eating. To the profuſeneſs of this evacuation, Dr. Johnſon, and the other medical gentlemen, have aſcribed the rapid diſſipation of the ingeſta, and his inceſſant craving for freſh ſupplies of food. It does not appear that he had worms.

BULINUS Hæmastomus, in *Conchology*. See Turbo Hæmastomus.

BULITAGA, in *Geography*, a range of mountains which ſeparates the empire of Ruſſia from Perſia. N. lat. 48° 30′ to 50°. E. long. 72° 14′ to 73° 14′.

BULITHOS, *lapis bovinus*, a calculus or ſtone found in the gall-bladder, kidnies, or urinary bladder of oxen.

Inſtances hereof are given by Bromell, the Academy Naturæ Curioſorum, and other naturaliſts, by which it appears that Ariſtotle was miſtaken in aſſerting, that man alone is ſubject to the ſtone, and inquiring ſolicitouſly into the reaſons hereof. Ariſt. Probl. § x. n. 42.

BULK *of a ſhip*, denotes her whole content in the hold for ſtowage of goods.

Bulk, to *break*. See Breaking.

Bulk-*heads*, are partitions made acroſs a ſhip, or lengthways, with boards of timber, whereby one part is divided from another. The *bulk-head afore* is the partition between the fore-caſtle and gratings in the head, and in which are the chaſe-ports.

BULKA, in *Geography*. See Bulckau.

BULKLEY, Charles, in *Biography*, a Proteſtant diſſenting miniſter, was born in London in 1719, educated in Dr. Doddridge's academy at Northampton, whither he removed from Cheſter in 1736, and commenced preacher in 1740. After ſome time he ſettled in London, where he was baptized by immerſion, and joined the general Baptiſts. After having conducted his labours with ability and reputation, in connection with a congregation of this deſcription, for a long ſeries of years, during which he ſucceeded the eloquent Dr. Foſter in his lecture at the Old Jewry, he died in 1797, in the 78th year of his age. Beſides ſeveral ſingle ſermons, preached on particular occaſions, he publiſhed "Diſcourſes on ſeveral Subjects," 1752; "A Vindication of Lord Shafteſbury's Writings," 1753; "Notes on Lord Bolingbroke's Philoſophical Writings;" "Obſervations on Natural Religion and Chriſtianity, candidly propoſed in a Review of the Diſcourſes lately publiſhed by the Lord Biſhop of London, in 3 volumes;" "Economy of the Goſpel," 4to. 1764;" "Diſcourſes on the Parables and Miracles of Chriſt," 4 vols. 1770; "Catechetical Exerciſes," 1774; "Preface to notes on the Bible," 1791, &c. Evans's Funeral Sermon, 1797.

BULL, in *Aſtronomy*, the conſtellation Taurus, which ſee.

Bull, Dr. John, in *Biography*, was born about 1563, in Somerſetſhire, and became, by his great abilities on the organ and virginal, the wonder of his time. Indeed, the proſperous reign of queen Elizabeth was, perhaps, not rendered more illuſtrious by the muſical productions of Tallis, Bird, and Morley, than the performance of Dr. Bull. His muſic-maſter was William Blithman, organiſt of the chapel royal to queen Elizabeth, in which capacity he held a very high rank. Bull, on the death of his maſter, in 1591, was appointed his ſucceſſor in the queen's chapel; and in 1596, at the recommendation of her majeſty, he had the honour of being the firſt that was appointed muſic-profeſſor to Greſham college. And though unable to compoſe and read his lectures in Latin, according to the founder's original intention, ſuch was his favour with the queen and the public, that the executors of ſir Thomas Greſham, by the *ordinances*, bearing date 1597, diſpenſed with his knowledge of the Latin language, and ordered "The ſolemn muſic lecture to be read twice every week, in manner following, viz. the theoretique part for one half hour, or thereabouts; and the practique, by concert of voice or inſtruments, for the reſt of the hour: whereof the firſt lecture *ſhould* be in the Latin tongue, and the ſecond in Engliſh.—But becauſe at this time Mr. Doctor Bull, who is recommended to the place by the queen's moſt excellent majeſty, being not able to ſpeak Latin, his lectures are permitted to be altogether in Engliſh ſo long as he ſhall continue in the place of muſic lecturer there." Ward's Lives of the Profeſſors of Greſham College, Pref. p. viii. The firſt lecture read by Bull, at Greſham college, was printed the ſame year that it was pronounced, under this title: "The *Oration* of Maiſter John Bull, Doctor of Muſicke, and one of the Gentlemen of hir Majeſties Royall-Chappell, as he pronounced the ſame, beefore divers worſhipful perſons, the Aldermen and Commoners of the citie of London, with a great multitude of other people, the 6th day of October, 1597, in the new erected Colledge of Sir Thomas Greſham, Knt. deceaſed: made in the commendation of the founder, and the excellent ſcience of Muſicke." Imprinted at London by Thomas Eſte.

At firſt, application was made to the two univerſities, by the lord mayor and corporation of London, jointly with the mercers' company, left truſtees of this inſtitution, to nominate two perſons in all the liberal arts fitly qualified to read lectures in their ſeveral faculties; but this application was not continued, as ſome jealouſy ſeems to have been awakened at Oxford and Cambridge, leſt this new college ſhould be prejudicial to thoſe ancient ſeats of learning.

What effect this liberal foundation had on other faculties let the friends and patrons of each particular ſcience ſay; but as to muſic, it is hardly poſſible to read the lives of the profeſſors without lamenting that the deſign of ſo noble an inſtitution, eſtabliſhed on ſuch an extenſive plan, ſhould be ſo entirely fruſtrated as to become wholly uſeleſs to that city and nation for whoſe inſtruction it was benevolently intended. Dr. Bull, the only perſon on the liſt of muſic profeſſors, who ſeems to have been able to inform by theory, or amuſe by practice, thoſe who attended the muſical lectures, reſigned his profeſſorſhip in 1607. Indeed, during more than a year of his profeſſorſhip, Mr. Thomas Bird, ſon of the venerable William Bird, exerciſed the office of a ſubſtitute to Dr. Bull, while he travelled on the continent for the recovery of his health. So that except about nine years from the date of the eſtabliſhment, to the preſent times, it does not appear that the ſcience of ſound, or practice of the muſical art, has been advanced by ſubſequent profeſſors. For in the following liſt, given by Dr. Ward, up to the year 1740, including Dr. Clayton, elected 1607; John Taverner, 1610, who was no relation of the muſician of that name; Richard Knight, 1638; William Petty, 1650, afterwards the famous ſir William Petty; Dr. Thomas Baynes, 1660; William Perry, 1681; John Newy, 1696; Dr. Robert Shippen, 1705; Dr. Edward Shippen, his brother, 1710; John Gordon, 1723; and Thomas Brown, 1739; though all men of learning and abilities in other faculties, yet no one of them had ever diſtinguiſhed himſelf, either in the theory or practice of muſic; nor are any proofs remaining that they had ever ſtudied that art, the *arcana* of which they were appointed to unfold! What an abuſe of reaſon and munificence does it ſeem, that thoſe who had never meditated on the art, or been taught, themſelves, ſhould be fixed upon to teach, and direct the ſtudies of others!

A ſilly ſtory has been told by Anthony Wood (Faſti Oxon. vol. i. c. 131.) concerning a feat performed by Dr. Bull, who, at St. Omer's, when he firſt viſited the continent, to a compoſition originally written in forty parts, added forty more in a few hours; which is ſo impoſſible, as not to be worth relating.

After the deceaſe of queen Elizabeth, he was appointed organiſt to king James. And July the 16th, 1607, when his majeſty and prince Henry dined at Merchant-Taylors' hall, the royal gueſts were entertained with muſic, both vocal and inſtrumental, as well as with ſeveral orations. And while his majeſty was at table, according to Stow, "Mr. doctor Bull, who was free of that company, being in a citizens gowne, cappe, and hood, played moſt excellent melody upon a ſmall payre of organs placed there for that purpoſe onely." (Chron. p. 891. edit. 1615.) In December, of the ſame year, he reſigned his profeſſorſhip of Greſham college, but for what reaſon does not appear, as he continued in England ſeveral years afterwards.

In 1613 he quitted England, and entered into the ſervice of the archduke, in the Netherlands. He afterwards ſeems to have been ſettled at Lubeck, at which place many of his compoſitions in the liſt publiſhed by Dr. Ward, are dated; one of them as late as 1622, the ſuppoſed year of his deceaſe.

Dr. Bull has been cenſured for quitting his eſtabliſhment in England; but it is probable that the increaſe of health and wealth was the cauſe and conſequence. Indeed he ſeems to have been praiſed at home, more than rewarded; and it is no uncommon thing for one age to let an artiſt ſtarve, to whom the next would willingly erect ſtatues. The profeſſorſhip of Greſham college was not then a ſinecure. His attendance on the chapel royal, for which he had forty pounds per annum, and on the prince of Wales, at a ſimilar ſalary, though honourable, were not very lucrative appointments for the firſt performer in the world, at a time when ſcholars were not ſo profitable as at preſent; and there was no *public playing*, where this moſt wonderful muſician could diſplay his abilities, and receive their due applauſe and reward.

A liſt of more than two hundred of Dr. Bull's compoſitions, vocal and inſtrumental, is inſerted in his life, which, when it was written in 1740, were preſerved in the collection of Dr. Pepuſch. The chief part of theſe were pieces for the organ or virginal, which we have ſeen and examined, having been tranſcribed into queen Elizabeth's virginal book, and printed in a collection called *Parthenia*. An *In nomine*, of five parts, we have ſcored from the Chriſt Church ſet of manuſcript books, in Dr. Aldrich's collection, and have attentively peruſed his choral compoſition in the collections of Dr. Tudway and Dr. Boyce, which is the ſame verſe anthem, with different words, for two voices, with a chorus. In all this vocal muſic that we have ſeen, there ſeems to be much more labour and ſtudy than genius. Tallis and Bird had ſo long accuſtomed themſelves to write for voices, that the parts in their compoſitions are much more natural and flowing than thoſe of Bull. In looking at the ſingle parts of Tallis and Bird, there are notes and paſſages which appear wholly inſipid and unmeaning, as melody; but which, when heard in harmony with any other part, produce admirable effects.

Indeed, poſſeſſed as he was of ſuch extraordinary powers of execution on keyed inſtruments, we have been frequently aſtoniſhed, in peruſing Dr. Bull's leſſons, at the few new and pleaſing paſſages which his hand ſuggeſted to his pen. It has been ſaid, that Dr. Pepuſch preferred Bull's compoſitions to thoſe of Couperin and Scarlatti, not only for harmony and contrivance, but air and modulation: an aſſertion which rather proves that the doctor's taſte was *bad*, than Bull's muſic *good*. Though we ſhould greatly admire the hand, as well as the patience, of any one capable of playing his compoſitions; yet, *as muſic*, they would afford us no kind of pleaſure: *ce ſont des notes, et rien que des notes;* there is nothing in them which excites rapture. They may be heard by a lover of muſic with as little emotion as the clapper of a mill, or the rumbling of a poſt-chaiſe.

After ſuch frequent mention of the extreme difficulty of theſe old pieces, in mercy to modern performers, it may with truth be ſaid, that the loſs, to refined ears, would not be very great, if they ſhould for ever remain unplayed and undecyphered. For being generally built on ſome old and vulgar pſalmodic tunes, unmeaning in themſelves, the crowded harmony and multiplied notes with which they are loaded, have not rendered them more pleaſing. Indeed the infallible conſequences of a young practitioner beſtowing ſuch time and labour on them as may be neceſſary to ſubdue the difficulties of execution they contain, would be corruption of taſte, and neglect of more uſeful ſtudies.

The inſtrumental muſic of queen Elizabeth's reign ſeems to partake of the pedantry and foppery of the times: eternal fugues upon dry and unmeaning ſubjects were the means of eſtabliſhing reputation for *learning* and *contrivance;* as dull diviſions and variations, in which the change was generally from bad to worſe, ſeem to have been the only qualifications which entitled a profeſſor to eminence for *taſte* and *invention.*

The very terms of *canon* and *fugue* imply reſtraint and labour. Handel was perhaps the only great fughiſt, exempt from pedantry. He ſeldom treated barren or crude ſubjects; his themes being almoſt always natural and pleaſing. Sebaſtian Bach, on the contrary, like Michael Angelo in painting, diſdained facility ſo much, that his genius never ſtooped to the eaſy and graceful. We never have ſeen a fugue by this learned and powerful author upon a *motivo,* that is natural and *chantant;* or even an eaſy and obvious paſſage, that is not loaded with crude and difficult accompaniments.

As the youth of Bull muſt neceſſarily have been ſpent in ſubduing the difficulties of other compoſers, he ſeems, in his riper years, to have made the invention of new difficulties of every kind, which could impede or diſmay a performer, his ſole ſtudy. It ſeldom happens that thoſe poſſeſſed of great natural force of hand, on any inſtrument, ſubmit to the drudgery of much dry ſtudy; but this gift was ſo far from relaxing the labour and diligence of Dr. Bull, that he entered deeper into all the *arcana* of the art, and pedantry of the times, than moſt of his contemporaries. That he was "exquiſitely ſkilled in canon," has been given as one of the moſt irrefragable proofs of his being a great muſician; and canons, *recte et retro,* and *per arſin et theſin,* in triangular, and other fantaſtical forms, are carefully preſerved, as ſtupendous ſpecimens of his abilities.

Walſingham has been a ſubject upon which Dr. Bull and Bird have exerciſed their abilities in the moſt elaborate manner. In the fifteenth century, popular tunes were the foundations upon which the greateſt contrapuntiſts conſtructed even the maſſes which they ſet to muſic; and in the next, the Engliſh, no longer in want of theſe tunes in the church, poliſhed and tricked them up for the chamber, with every art and embelliſhment they could deviſe.

Both Bird and Bull have likewiſe worked on the hexachord, *ut re mi fa ſol la,* aſcending and deſcending; upon which theme they have conſtructed elaborate and ingenious leſſons, of the moſt difficult execution. That of Bull has paſſages for the left hand, which perhaps none but himſelf could play during his own time, and which we have never ſeen introduced in any compoſitions of the preſent century, except thoſe of Sebaſtian Bach; or heard executed, but by Palſcha, near forty years ago; who muſt have vanquiſhed them by the inceſſant labour of ſeveral years, out of his ſhort life; for he was then but eight years old. A new, but ſimilar difficulty, has lately been deviſed for keyed-inſtruments, in the rapid diviſions for one hand, in *octaves,* which great application only can vanquiſh. The execution of long and rapid diviſions of thirds and ſixths, and even of common chords, is not frequently wanted in modern muſic, and therefore they would baffle and embarraſs the greateſt performers, who have not worked at ſuch paſſages with unremitting labour. But beſides theſe difficulties, there are others of *meaſure,* in Bull's Leſſons, where, in four parts, the left hand has two of ſix crotchets in a bar, while the right plays nine to each ſemibreve of the hexachord,

Specimens of the difficulties abounding in the compoſitions of the golden age of queen Elizabeth, may be ſeen in the Hiſt. of Muſ. vol. iii. in order to invalidate the vulgar cant of ſuch as are determined to blame whatever is modern, and who, equally devoid of knowledge and feeling, reprobate as *traſh* the moſt elegant, ingenious, and often ſublime compoſitions, that have ever been produced ſince the laws of harmony were firſt eſtabliſhed.

Indeed we ſhould ſuppoſe that the pieces of Bull were compoſed to be *tried,* not played, for private practice, not public uſe; as they ſurpaſs every idea of difficulty that can be formed from the leſſons of Handel, Scarlatti, Sebaſtian Bach; or, in more modern times, Emanuel Bach, Müthel, Mozart, Clementi, Dupré, Cramer, and Beethoven.

BULL, GEORGE, an Engliſh prelate, was deſcended of an ancient family ſeated at Shapwick in Somerſetſhire, and born at Wells in that county, in 1634. Having finiſhed his courſe of claſſical learning at Wells and at Tiverton, he was entered a commoner of Exeter college, Oxford, in 1648; where, notwithſtanding the loſs of time incurred by the purſuit of pleaſures and diverſions, he acquired the reputation of an acute diſputant, and attracted the notice of his ſuperiors. In 1649, refuſing to take the oath to the commonwealth of England, he retired to North Cadbury in Somerſetſhire; and having applied with diligence to the ſtudy of divinity, he took orders, and accepted the ſmall benefice of St. George's, near Briſtol, where he maintained an exemplary character, and was eminently uſeful, preaching twice every Sunday, and performing the devotional ſervice by the aid of the common prayer, though the regular uſe of the liturgy was prohibited. After the reſtoration in 1662, he was preſented by the lord chancellor, earl of Clarendon, to the rectory of Suddington, St. Peter, near Cirenceſter, having been inſtituted, by the recommendation of lady Pool, to the adjoining rectory of Suddington, St. Mary, in 1658. In this ſituation he remained twenty-ſeven years; diſcharging his paſtoral functions with aſſiduity, and proſecuting his ſtudies with indefatigable application. Moſt of his works were compoſed during this period of his life. In 1669 he publiſhed his "Harmonia Apoſtolica," or "Apoſtolical Harmony," in two diſſertations, in the firſt of which St. James's doctrine of Juſtification by works is explained and defended; in the ſecond, the argument of St. Paul with St. James is clearly demonſtrated. This work, which was written in Latin, excited great oppoſition, and was attacked by ſeveral divines, both among epiſcopalians and nonconformiſts. The author's reply to his adverſaries was contained in his "Examen Cenſuræ, &c." and his "Apologia pro Harmonia, &c.;" publiſhed together in 1675. In 1678 he was promoted to a prebend in the church of Glouceſter; and in 1680 he finiſhed his "Defence of the Nicene Faith," which was printed at the Oxford theatre in 1685, with the ſpecial approbation, and at the ſole expence of biſhop Fell, under the title of "Defenſio Fidei Nicenæ, ex Scriptis quæ extant Catholicorum Doctorum qui intra tria prima Eccleſiæ Chriſtianæ Secula floruerunt." This book is written, in a pure Latin ſtyle, againſt the Arians and Socinians on the one hand, and the Tritheiſts and Sabellians on the other; and it was received with great applauſe both at home, and in foreign countries. It did not, however, eſcape the animadverſions and cenſures of ſeveral Unitarian writers. Five years after the completion of this book, the author was preſented to the valuable rectory of Avening, in Glouceſterſhire. Soon after, in 1686, he was promoted by archbiſhop Sancroft, to the archdeaconry of Landaff: and in conſideration of his eminent ſervices to the church, the univerſity of Oxford conferred upon him the degree of doctor in divinity. During the reign of James II. he preached with great ardour againſt the errors of popery. In 1694, he publiſhed his "Judicium Eccleſiæ Catholicæ, &c.;" in defence of the anathema, decreed by the firſt council of Nice. For this work the author received the thanks of the whole body of the clergy of France; though, conſidered as the vindication of an anathema, which condemns ſome of the higheſt ornaments of literature and chriſtianity both in and out of the church, it will not now be regarded as entitling Dr. Bull to any very diſtinguiſhing commendation. The laſt treatiſe written by this learned author, was his "Primitive Apoſtolical Tradition of the Doctrine received in the Catholic Church, concerning the Divinity of our Saviour Jeſus Chriſt, aſſerted, and evidently demonſtrated againſt Daniel Zuricke the Pruſſian, and his late Followers in England." All his Latin works publiſhed by himſelf at different times, were collected and printed in 1703 in one volume, folio, by Dr. J. E. Grabe, with a preface and annotations. In 1705, Dr. Bull was promoted to the biſhopric of St. David's; and taking his ſeat in the houſe of peers, in the ſeſſion, when the bill paſſed for the union of both kingdoms, he bore teſtimony in favour of the church of England, as being "in her doctrine, diſcipline, and worſhip, moſt agreeable to primitive and apoſtolical inſtitution." He reſided conſtantly in his dioceſe, and carefully diſcharged all the epiſcopal functions; but in 1710 he cloſed his laborious and uſeful life at Brecknock, the cuſtomary place of his reſidence, where he was interred; leaving behind him a widow and two children, the ſurvivors of eleven. His conſtitution was naturally firm and vigorous; but his inceſſant application had to a conſiderable degree impaired it before the cloſe of his life. His temper was lively, irritable, and inclined to melancholy; nor does he ſeem to have been entirely free from a tincture of ſuperſtition. He was remarkable for the firmneſs of his mind, and for an habitual ſenſe of religion, which influenced his conduct after the firſt deviations of his youth. His learning was recommended by the modeſty that accompanied and adorned it; and his patience, piety, and chriſtian hope were ſignally exemplified during the painful paroxyſms of the diſeaſe that terminated his life. Biſhop Bull's ſermons and larger diſcourſes were publiſhed in 1713 by Mr. Nelſon in three volumes 8vo. The firſt of theſe volumes contains two ſermons on the intermediate ſtate, which were republiſhed in 1765 by the late profeſſor Chappelow, and which have been animadverted upon by the author of the "Hiſtorical View of the controverſy concerning the intermediate State, &c." All the biſhop's works have been publiſhed together, in folio, by Mr. Nelſon, who alſo publiſhed his "Life" in 1717, 8vo. Biog. Brit.

Bull, in *Eccleſiaſtical Writers*, denotes an inſtrument diſpatched out of the Roman chancery, ſealed with lead; anſwering to the edicts, letters patent, and proviſions, of ſecular princes.

The bull is thus deſcribed by Matthew Paris, anno 1257: "*In bulla domini papæ ſtat imago Pauli à dextris crucis in medio bullæ figurata, et Petri à ſiniſtris.*"

The word *bull* is derived from *bulla*, a ſeal; and that from *bulla*, a drop or bubble: or, according to others, from the Greek, *βȣλη*, *council*: according to Pezron, from the Celtic *buil*, or *bul*, a bubble.

We meet with four kinds of theſe *bulli* or *bullæ*; golden, ſilver, waxen, and leaden; all in uſe among the emperors and kings of the middle and barbarous ages. In ſome, the impreſſion is made on the ſolid metal itſelf; in others on wax; and only encloſed in a metalline box, or caſe.

Sealing with metals is an illuſtrious privilege, belonging only to princes, though aſſumed alſo by prelates, as princes of the church. The doges of Venice durſt not arrogate this honour, till leave was given them by pope Alexander III. about the year 1170, to ſeal their diplomata with lead.

The *bull* is the third kind of apoſtolical reſcript, and the moſt in uſe, both in affairs of juſtice and of grace. It is written on parchment; by which it is diſtinguiſhed from a *brief*, or ſimple *ſignature*, which is on paper. A bull is properly a ſignature enlarged: what the latter comprehends in a few words, the former dilates and amplifies.

If the bulls be letters of grace, the lead is hung on ſilken threads; if they be letters of juſtice, and executory, the lead is hung by a hempen cord. They are all written in an old round Gothic letter.

The bull, in the form wherein it is to be diſpatched, is divided into five parts; viz. the narrative of the fact; the conception; the clauſe; the date; and the ſalutation, in which the pope takes on himſelf the quality of "ſervant of the ſervants of God," *ſervus ſervorum Dei.*

Properly ſpeaking, it is the ſeal or pendant lead alone that is the bull: it being that which gives it both the title and authortiy. The ſeal preſents, on one ſide, the heads of St. Peter and St. Paul; on the other, the name of the pope, and the year of his pontificate.

By bulls, jubilees are granted: without them no biſhops in the Romiſh church are allowed to be conſecrated. In Spain, bulls are required for all kinds of benefices; but in France, &c. ſimple ſignatures are ſufficient; excepting for biſhoprics, abbeys, dignitaries, and priories conventual. According to the laws of the Roman chancery, no benefits, exceeding twenty-four ducats per annum, ſhould be conferred without bulls: but the French would never ſubmit to this rule, except for ſuch benefices as are taxed in the apoſtolical chamber: for the reſt, they reſerve the right of diſſembling the value, expreſſing it in general terms: *Cujus & illi forſan annexorum fractus 24 ducatorum auri de camera, ſecundum communem æſtimationem, valorem annuum non excedunt.*

The bulls brought into France were limited and moderated by the laws and cuſtoms of the land, before they were regiſtered; nor was any thing admitted till it had been well examined, and found to contain nothing contrary to the liberties of the Gallican church; thoſe words, *proprio motu*, in a bull, were ſufficient to make the whole be rejected in France. Nor do the Spaniards admit the papal bulls implicitly; but having been examined by the king's council, if there appear any reaſon for not executing them, notice thereof is given to the pope by a ſupplication; and the bull, by this means, remains without effect: and the like method of proceeding with the court of Rome is obſerved by moſt of the other courts of Europe, in the papal communion.

To *fulminate bulls*, is to make publication thereof, by one of the three commiſſioners to whom they are directed; whether he be the biſhop or official. This publication is ſometimes oppoſed; but when it is, the fault is not charged on the pope who iſſued the bull; but an appeal is brought to him againſt the perſon who is ſuppoſed to make it; thus the fault is laid, where it is known not to be juſt, to evade affronting the pontiff. See Fulmination.

The *bull in cœna Domini*, is a bull read every year on Maunday-Thurſday, in the pope's preſence; containing various excommunications and execrations againſt heretics, thoſe who diſobey the ſee, who diſturb or oppoſe the exerciſe of eccleſiaſtical juriſdiction, &c.

After the death of the pope, no bulls are diſpatched during the vacancy of the ſee, to prevent any abuſes; therefore, as ſoon as the pope is dead, the vice-chancellor of the Roman church takes the ſeal of the bulls; and in the preſence of ſeveral perſons, orders the name of the deceaſed pope to be eraſed; and covers the other ſide, on which are the heads of St. Peter and St. Paul, with a linen cloth: ſealing it up with his own ſeal, and giving it, thus covered, to the chamberlain, to be preſerved, that no bulls may be ſealed with it in the mean time.

Theſe decrees of the pope are often mentioned in our ſtatutes, as 25 Edw. III. 28 Hen. VIII. c. 16.; 1 and 2 Ph. and M. c. 8; and 13 Eliz. c. 2. They were formerly uſed, and of force in this country; but by ſtat. 28 Hen. VIII. c. 16. all bulls, &c. obtained from the biſhop of Rome are void; and by 13 Eliz. c. 2. (ſee alſo 23 Eliz. c. 1.) the procuring, publiſhing, or uſing of any of them is high treaſon.

Bull, *golden*, is a denomination peculiarly given to an ordinance, or ſtatute, made by the emperor Charles IV. in 1356, ſaid to have been drawn up by that celebrated lawyer, Bartoli, and ſtill reputed the *magna charta*, or fundamental law of the empire. It was compoſed and publiſhed at a diet convoked by the emperor at Nuremberg; and is thus called from a golden ſeal fixed to it, ſuch as were uſed by the emperors of Conſtantinople, annexed to their edicts.

Till the publication of the golden bull, the form and ceremony of the election of an emperor were dubious, and undetermined; and the number of electors was not fixed: this ſolemn edict regulating the functions, rights, privileges, and pre-eminences of the electors. The original, which is in Latin, on vellum, is kept at Franckfort. On the back ſide of it there are ſeveral knots of black and yellow ſilk, to which hangs a *bull*, or ſeal of gold. It is pierced through the middle with a golden wire, the ends of which are faſtened by a ſeal of gold, about the ſize of a half crown, one ſide exhibiting the figure of Charles IV. upon a throne, and the reverſe, a kind of gate, inſcribed "Aurea Romana." On the exergue are theſe words: "Carolus IV. Rom. Imp. ſemper Auguſtus, rex Bohemiæ." This is preſerved in a ſquare wooden box. This ordinance, containing thirty articles, was approved of by all the princes of the empire, and remains ſtill in force. The election of the empire is by it declared to belong to ſeven electors; three of them eccleſiaſtics, viz. the archbiſhops of Mentz, Treves, and Cologn; and four ſeculars, viz. the king of Bohemia, prince Palatine, duke of Saxony, and marquis of Brandenburg.

Bull, *Caroline*, a famous conſtitution publiſhed by Charles IV. A.D. 1359, which cancelled all the ſtatutes or regulations that had been made to the prejudice of eccleſiaſtical liberty, and denounced the ſevereſt penalties againſt thoſe who ſhould aggrieve the perſons of the clergy. It was iſſued in order to pacify pope Innocent VI., who had been alarmed and offended by ſome plans of reformation which the emperor had adopted. With a view of reforming the German clergy, he communicated to the biſhops the meaſures he had taken for this purpoſe, and threatened to ſequeſtrate the revenues of thoſe who ſhould refuſe to obey his orders. The pope, believing the honour and liberty of eccleſiaſtics at ſtake, deſired the emperor to forbear meddling with the reformation of the clergy, which was his province, and inſiſted upon his reſtoring what the ſecular noblemen had at different times uſurped from eccleſiaſtics. This circumſtance occaſioned the publication of the Caroline bull.

Bulls, *golden*, were in uſe among the eaſtern emperors for a conſiderable time, leaden ones being confined to matters of a ſmaller moment. Spelman mentions a golden bull, in a treaty of alliance with our Henry VIII. and Francis I. of France: the ſame author relates, that the inſtrument, whereby Clement VII. gave king Henry VIII. the title of Defender of the Faith, had golden *bulla* affixed to it; and there are other inſtances in Du-Cange and Altaſerra.

Bulls, *ſilver*, were not in ſo frequent uſe, though inſtances of them are not wanting.

Bulls, *leaden*, were ſent by the emperors of Conſtantinople, to deſpots, patriarchs, and princes; and the like were alſo uſed by the grandees of the imperial court, as well as by the kings of France, Sicily, &c. and by biſhops, patriarchs, and popes. Polydore Virgil makes pope Stephen III. the firſt who uſed leaden *bulls*, about the year 772. But others find inſtances of them as early as Sylveſter, Leo. I. and Gregory the Great. The later popes, beſides their own names, ſtrike the figures of St. Peter and St. Paul on their bulls; a practice firſt introduced by pope Paſchal II.

Bulls, *waxen*, are ſaid to have been firſt brought into England by the Normans. They were in frequent uſe among the Greek emperors, who thus ſealed letters to their wives, mothers, and ſons. Of theſe there were two ſorts, one red, the other green. Du Cange, Gloſſ. Lat. tom. i. & Gloſſ. Græc. Montfaucon, Palæolog. lib. vi.

Bull of *Phalaris*, or *Perillus*, a brazen bull made by Perillus the Athenian, to flatter the cruelty of Phalaris, tyrant of Agrigentum, for the purpoſe of tormenting criminals. It was formed in the ſhape of that quadruped; and when perſons were incloſed in it, fire was applied, and their cries are ſaid to have reſembled the roaring of a bull. Perillus is ſaid to have been the firſt who ſuffered in it, for having extorted too great a recompence for the conſtruction of it. Phalaris himſelf was puniſhed by the people of Agrigentum for his cruelty, by being put to death, as ſome ſay, in his own bull. When Hannibal took the city, this bull, among other treaſures and valuable curioſities, was ſent to Carthage; but it was afterwards reſtored to the Agrigentines by Scipio, when he took Carthage, in the third Punic war. Cic. l. iv. in Verrem. c. 33.

Bull, in *Geography*, a large rock in the Atlantic ocean, about three miles W. of Durſey iſland, on the coaſt of the county of Kerry, Ireland. N. lat. 51° 33′. W. long. 10° 9′.

Bull, a rock near the weſt point of the iſland of Raghlin, in the North channel, about ſeven miles N.W. of Fairhead, in the county of Antrim, Ireland. N. lat. 55° 19′. W. long. 6° 10′.

Bull, *North* and *South*, two banks of ſand in the bay of Dublin, Ireland, between which lies the ſmall ſand bank, called the *bar*. There are buoys to mark theſe banks, but notwithſtanding every improvement of the harbour, and every precaution, they ſometimes occaſion ſhipwrecks.

Bull, in *Rural Economy*, an animal of much importance to the ſtock farmer. For the purpoſes of the breeder the head of the bull ſhould, according to Mr. Culley, "be rather long, and the muzzle fine; his eyes lively and prominent, his ears long and thin, his horns white; his neck, riſing with a gentle curve from the ſhoulders, and ſmall and fine where it joins the head; his ſhoulders moderately broad at the top, joining full to his chine, or crops and cheſt backwards, and to the neck-vein forwards; his boſom open, breaſt broad, and projecting well before his legs, his arms or fore thighs muſcular, and tapering to his knee; his legs ſtraight, clean, and very fine-boned; his chine and cheſt ſo full as to leave no hollows behind the ſhoulders, the plates ſtrong, to keep his belly from ſinking below the level of his breaſt; his back or loin broad, ſtraight, and flat, his ribs riſing one above another in ſuch a manner, that the laſt rib may be rather the higheſt, leaving only a ſmall ſpace to the hips or hooks, the whole forming a round or barrel-like carcaſe; his hips ſhould be wide-placed, round or globular, and a little higher than the back, the quarters from the hip to the rump long; and inſtead of being ſquare, as recommended by ſome, they ſhould taper gradually from the hips backwards, and the turls or pott-bones not in the leaſt protuberant; rumps cloſe to the tail, the tail broad, well haired, and ſet on ſo high as to be in the ſame horizontal line with his back."

This is an animal chiefly kept for the purpoſe of propagation, though he is capable of being ſubjected to the yoke; but there is no certainty of his working quietly; and the uſe he may make of his prodigious ſtrength ſhould conſtantly be guarded againſt. Bulls are for the moſt part naturally untractable, ſtubborn, and fierce; and frequently in the bulling ſeaſon abſolutely furious and uncontrollable; however, by caſtration, they may be rendered perfectly tame and quiet, without the leaſt diminution of their ſtrength. They alſo often grow larger, more heavy and unwieldy, and become more adapted to labour, as well as more tractable, by this operation. See Ox and Cattle.

The diſpoſition of theſe animals is, however, ſhewn to depend greatly upon the manner in which they are reared by the practice of Mr. Bakewell, who had all his bulls ſo tame and gentle, that they could be managed with the greateſt facility.

Among the *Ancients*, thoſe who triumphed, ſacrificed a bull, when they arrived at the capitol. Bulls were offered to Apollo and Neptune. It was held a crime to ſacrifice them to Jupiter, though we do not want inſtances of that practice.

Bulls were ranked by the Romans in the number of military rewards.

Bull, *African*, in *Natural Hiſtory*, a ſmall wild bull, common in that part of the world, and ſuppoſed to be the true *bubalus* of the ancients. See Bubalus.

Bull's *blood*, freſh drawn, is ſaid to be a powerful poiſon, as coagulating in the ſtomach. This is related on the authority of Pliny, xxviii. 9. and xi. 38. and many perſons among the ancients, ſuch as Æſon, Midas, Hannibal, and Themiſtocles, are ſaid to have been poiſoned by it. But the fact has been queſtioned by ſome, and denied by others. See Apollodorus, lib. 1. cap. 27. Strabo, lib. i. p. 106. Plutarch in Flaminio; and Valer. Maxim. vol. vi. ext. 3.

Bull's *gall*, is an intenſe bitter, more pungent and acrimonious than that of any other animal; whence it is ſometimes uſed to deſtroy worms.

Bull, *bannal*, denotes a bull kept by a lord, who has a right to demand all his tenants to bring their cows to be ſerved by him.

Bull, *free*, according to Du-Cange, ſignifies the ſame with *bannal bull.* Hence *tauri liberi libertas;* which, however, ſhould rather ſeem to denote a privilege of keeping a bull independent of the lord.

Bulls, *wild.* The wild bulls, now ſo numerous on the continent of America, are ſaid to have ſprung from one bull and ſeven cows, which were carried thither by ſome of the firſt conquerors.

In the iſland of Hiſpaniola, the French buccaneers purſue bulls with dogs, and kill them with fire arms. See Buccaneers. At Buenos Ayres, the Spaniſh toradors chaſe them on horſeback, armed with a long lance, at the end of which is a half-moon of ſharp ſteel. Having drawn a number of the horned kind together, they let the cows eſcape, but dextrouſly take the bulls with their half-moons on the hind-legs, by which, diſabling them from flight, they are eaſily diſpatched.

Bull-*baiting*. See Baiting.

Bull-*fighting*, a ſport or exerciſe much in vogue among the Spaniards and Portugueſe, conſiſting in a kind of combat of a cavalier or torador againſt a wild bull, either on foot or on horſeback, by riding at him with a lance. The Spaniards have bull-fights, i. e. feaſts, attended with ſhows, in honour of St. John, the Virgin Mary, &c. This ſport the Spaniards received from the Moors, among whom it was celebrated with great eclat. Some think, that the Moors might have received the cuſtom from the Romans, and they from the Greeks. Dr. Plott is of opinion, that the Ταυροκαθαψιων ημεραι amongſt the Theſſalians, who firſt inſtituted this game, and of whom Julius Cæſar learned and brought it to Rome, were the origin both of the Spaniſh and Portugueſe bull-fighting, and of the Engliſh bull-running. Nat. Hiſt. Staff. chap. x. § 76.

The practice was prohibited by pope Pius V. under pain of excommunication, incurred *ipſo facto*. But ſucceeding popes have granted ſeveral mitigations in behalf of the toradors.

Mr. Gibbon, in his "Hiſtory of the Decline and Fall of the Roman Empire," (vol. xii. p. 421.) has extracted from Muratori (Script. Rer. Italic. tom. 12.) an account of a bull-feaſt, which was celebrated in 1332, after the faſhion of the Moors and Spaniards, in the Coliſœum at Rome. The nobles were invited by a general proclamation, communicated as far as Rimini and Ravenna, to exerciſe their ſkill and courage in this perilous adventure. The Roman ladies were marſhalled in three ſquadrons, and ſeated in three balconies, which were lined on this occaſion with ſcarlet cloth. When the company was collected and arranged, the lots of the champions were drawn by an old and reſpectable citizen; and they deſcended into the arena, or pit, to encounter the wild bulls with a ſingle ſpear. Amidſt the crowd, the annaliſt has ſelected the names, colours, and devices, of 20 of the moſt conſpicuous knights. Several of the names are the moſt illuſtrious of Rome and the eccleſiaſtical ſtate; the colours were adapted to their taſte and ſituation; and the devices are expreſſive of hope or deſpair, and breathe the ſpirit of gallantry and arms; the combats of the amphitheatre were dangerous and bloody. Every champion ſucceſſively encountered a wild bull; and the victory may be aſcribed to the quadrupeds, ſince no more than eleven were left on the field, with the loſs of nine wounded, and eighteen killed on the ſide of their adverſaries. Some of the nobleſt families might mourn, but the pomp of the funerals in the churches of St. John Lateran, and Maria Maggiore, afforded a ſecond holiday to the people.

Similar combats with bulls in the amphitheatres, have been juſtly regarded as a ſtriking feature of Spaniſh and Portugueſe manners. Some have ſuppoſed that theſe ſpectacles, by rendering bloodſhed familiar to the people, tend to deaden ſenſibility, and to make the national character ferocious and brutal. Others think, that they ſerve as an antidote to timidity, and as a means of cheriſhing reſolution and valour. But theories of this kind are not juſtified by facts. Modern Italy, it is ſaid, has no gladiators, but numerous aſſaſſins; whereas ancient Rome had ſcarcely one aſſaſſin, but whole armies of gladiators. As far as it reſpects the national character, it ſeems to be of little moment, whether bulls be killed by butchers or by champions; and it is well known, that ſuch ſpectacles have little or no influence on the diſpoſition, becauſe they are attended by people of all ages and ſtations, and yet they neither give energy to the feeble, and boldneſs to the timid, nor make any alteration in the mildneſs of their manners. The bull-fights of Spain and Portugal attract a crowd of ſpectators, and yield very conſiderable ſums of money to thoſe who undertake and conduct them, of which part is appropriated to the purpoſe of defraying the expence of horſes and bulls, and of paying the hire of the toradors; and part is applied to the ſupport of religious and eleemoſynary eſtabliſhments. Theſe entertainments have formed one of the chief funds of the hoſpital at Madrid. The bulls that are ſelected for theſe combats are of a peculiar breed, and the connoiſſeurs can readily diſtinguiſh by a view of them where they have been bred. The arena, where theſe ſhows are exhibited, is a kind of circus ſurrounded by ranges of ſeats, one above another; and the higheſt of them is covered. The lower part of the edifice is occupied by boxes. At Valladolid, which has no circus appropriate to theſe fights, the principal ſquare is converted into a theatre, and the balconies of the adjoining houſes are made to project in ſuch a manner as to accommodate the numerous ſpectators who aſſemble on theſe occaſions. The ſpectacle commences by a kind of proceſſion around the ſquare, in which the combatants appear both on horſeback and on foot; and they are preceded by two alguazils on horſeback, who are deputed to obtain of the preſident of the ſhow an order for its commencement. Upon a certain ſignal, the animal appears; and the officers of juſtice, by haſtily withdrawing, give notice to the ſpectators that their cruel paſtime is about to begin. The bull is received, on his appearance, with loud ſhouts; and the conteſt is begun by the "picadors," who are mounted on horſes and dreſſed in the ancient Spaniſh mode, each of them being armed with a long lance. To the honour of this part of the combat, which requires ſtrength, courage, and dexterity, ſeveral perſons of rank occaſionally aſpire. When the bull darts upon theſe combatants, without any previous irritation, his courage is applauded; and if in ſpite of the pointed weapon which reſiſts his aſſault, he returns to the charge, the ſhouts of the ſpectators are redoubled, and their joy ſeems to tranſport them into enthuſiaſm; but if the bull is timid, and avoids his perſecutors, he is hooted at and hiſſed by the ſpectators, and inſulted with reproaches and blows by thoſe who are near him. If theſe modes of provocation are inſufficient to rouſe his ferocity, large dogs are let looſe upon him, which ſeize him in a furious manner by the neck and ear; and which he toſſes into the air, ſo that they fall to the ground ſtunned, and ſometimes mangled. At length, however, the combat is renewed, and the animal, overcome by his aſſailants, periſhes ignobly. If the animal manifeſts ſpirit and fierceneſs, the picadors piece him with their lances; and thus irritated, he furiouſly attacks the horſe which carries the combatant, rips up his ſides, and overturns him and his rider. The picadors, thus diſmounted and endangered, are relieved by other combatants on foot, called "Chulos;" who divert the animal's attention by ſhaking pieces of differently coloured cloth before him; theſe the provoked animal purſues, and they eſcape merely by their agility. Sometimes they are under a neceſſity of throwing themſelves over a barrier that encloſes the arena. When this barrier is ſingle, the bull purſuing the chulo, ſometimes jumps over it, and cauſes great conſternation among the ſpectators on the lower benches, ſo that in their precipitance for eſcaping, they ſuffer as much as they might have done from the fury of the animal, who, however, becomes incapable of this kind of purſuit. The picador, when effectually relieved, mounts his horſe, or if the firſt horſe be killed or become unfit for ſervice, procures another, and renews the combat. When the picadors have ſufficiently tormented the bull, they withdraw, and leave him to the irritation of the combatants on foot. Theſe latter, denominated "banderilleros," go before the animal; and when he aims at them, they plunge into his neck darts, called "banderillas," with hooked points, and ornamented with ſmall ſtreamers of coloured paper. The fury of the bull is now redoubled; he roars and toſſes his head, and aggravates, by the violence of his motion, the pain occaſioned by his wounds: and in this ſituation, the agility of his adverſaries is ſignally diſplayed. The danger that threatens them alarms the ſpectators; but accuſtomed to this kind of combat, they ſecure themſelves by their addreſs and dexterity. When the vigour of the bull is almoſt exhauſted, and he is bathed with blood, and the people are anxious to witneſs the combat of another victim, the preſident of the entertainment iſſues the ſignal of death, which is proclaimed by the ſound of trumpets. The "matador" then advances; and holding a dagger in one hand, he waves before his adverſary with the other hand a kind of flag. They both ſtop and gaze at one another; and the ſpectators are again amuſed for ſome time by the impetuoſity of the bull, and the agility of the matador. The aſſembled obſervers witneſs this ſcene in profound ſilence: and the matador coolly diſpatches the furious animal by a blow, where the ſpinal marrow joins the head. The death is bloodleſs and inſtantaneous, and deſerves imitation, as humanity would wiſh to ſave pain to the animals ſlaughtered for food. When the animal falls, a thouſand voices proclaim with loud ſhouts the triumph of the conqueror. If the blow is not deciſive, and the bull ſurvives, murmurs ſucceed applauſe, and the matador is regarded only as an unſkilful butcher. When the tragedy terminates, three mules ornamented with bells and ſtreamers appear, and the bull is dragged by means of a rope tied round his horns from the arena. Sometimes the bull is pierced in various parts with lances, to which ſquibs are faſtened, which being ſet on fire, the maddened animal ſtands pawing the ground while he draws in and exhales volumes of ſmoke. Sometimes an American is introduced, who, after the manner of hunting the wild bull in his own country, throws a rope round the horns, and entangling him as in a net, then kills him with perfect ſafety.

On each of the days ſet apart for theſe entertainments, ſix are thus ſacrificed in the morning, and 12 in the afternoon: at leaſt this is the caſe at Madrid. The three laſt belong excluſively to the matador, who, unaided by the picadors, exerts his ingenuity to diverſify the pleaſure of the ſpectators. The Spaniſh government are not inſenſible of the moral and political inconveniences ariſing from this ſpecies of frenzy. So far from encouraging, they diſcountenance it; whilſt it would be dangerous precipitately to aboliſh it. The court itſelf formerly reckoned it among the number of its feſtivals, which occurred at certain periods. The theatre of them was the "Plaza-Mayer," and they were honoured with the preſence of the king and royal family; and his guards preſided there in good order. His halberdiers formed the interior circle of the ſcene; and their long weapons, held out in a defenſive poſture, were the only barrier which they oppoſed againſt the dangerous caprices of the bull. Theſe entertainments, which by way of excellence were called “Fieſtas Reales,” are now become very rare. Charles III. who endeavoured to poliſh the nation, and to direct the public attention to uſeful objects, was very deſirous of ſuppreſſing a taſte from which inconveniences ſprang: but he was too wiſe to employ violent means for this purpoſe. He, however, confined the number of bull-fights to thoſe, the profits of which were applied to ſome charitable inſtitutions, with a deſign of ſubſtituting to theſe other funds afterwards. Bull-fights being thus rendered leſs frequent, will, perhaps, gradually loſe their attraction, until more favourable circumſtances allow the entire abolition of them.

Bull-*running*, denotes a feudal cuſtom obtaining in the honour of Tudbury in Staffordſhire, where anciently, on the day of the Aſſumption of our lady, a bull was turned looſe by the lord to the minſtrels, who, if they could catch him before he paſſed the river Dove, were to have him for their own, or, in lieu thereof, to receive each forty pence; in conſideration of which cuſtom, they pay twenty pence yearly to the ſaid lord. Plot. Nat. Hiſt. Staff.

Bull *and boar*.—By the cuſtom of ſome places, the parſon is obliged to keep a bull and boar for the uſe of his pariſhioners, in conſideration of his having tithes of calves and pigs, &c. 1 Rol. Abr. 559. 4 Mod. 241.

Bull-*comber*, in *Entomology*. See Scarabæus Typhæus.

Bull-*dog*, in *Zoology*, a kind of maſtiff upon a ſmaller ſcale; with a ſomewhat flatter ſnout and a greater ferocity of aſpect. The bull-dog is remarkable for the undaunted and ſavage pertinacity with which he provokes and continues the fight; and when he has fixed his bite, is with much difficulty diſengaged from his antagoniſt. This is the dog employed in the barbarous diverſion of bull-baiting. See Dog.

Bull's *eye*, in *Aſtronomy*. See Aldebaran.

Bull's *eye*, in *Meteorology*, a little dark cloud, reddiſh in the middle, chiefly appearing about the Cape of Good Hope; thus denominated by the Portugueſe, who, on the appearance of it, inſtantly take down their ſails, as knowing that a terrible ſtorm of thunder, lightning, and whirlwind, is at hand.

Bull's *eye*, in *Sea Language*, denotes a ſort of ſmall oval block without ſheaves, made of hard wood. It is turned in a lathe, has a groove round the outſide, and an oval hole gouged through the middle. Theſe blocks are uſed inſtead of blocks and iron thimbles; but, indeed, they are very ſeldom uſed at all.

Bull *finch*, in *Ornithology*. See Loxia Pyrrhula.

Bull-*frog*, in *Zoology*. See Rana Catesbeiana, and Ocellata.

Bull-*bay* river, in *Geography*, lies to the eaſt of Port Royal or Kingſton harbour, in Jamaica, between Cane river and Four-mile wood.

Bull and *cow*, rocks near the ſouth coaſt of Newfoundland. N. lat. 46° 55′. W. long. 53° 42′.

Bull *Sand*, lies about a league S.W. from the Spurn point, or eaſtern entrance of the Humber, on the coaſt of Yorkſhire, between which and the point is a fine channel of ten or eleven fathoms.

Bull's *harbour* and *iſland*, or Sewee bay, lies on the coaſt of South Carolina, in North America, to the ſouth-weſt from cape Carteret. The entrance of the harbour, which is within the iſland, is at the N.E. end of it, having a ſmall iſland within that: between them is a paſſage, in N. lat. 32° 56′. and W. long. 78° 24′.

Bull-*head*, a cape of Ireland, on the north ſide of Dingle bay in the county of Berry, near three miles S.E. of Dingle. W. long. 10° 4′. N. lat. 52° 6′.

Bull-*head*, in *Ichthyology*, is a trivial Engliſh name applied moſt commonly to that ſmall kind of fiſh which we diſtinguiſh farther by the name of *river-bull-head*, (*Cottus Gobio, Linn.*) Another fiſh of the ſame genus, Cottus cataphractus is called the *armed-bull-head*; this laſt lives in the ſea.

Bull-*trout*, an Engliſh name for a fiſh of the ſalmon kind, caught in many of the rivers of England; it is alſo called the ſcurf. See Salmo Trutta.

Bull-*ruſh*, in *Botany*. See Scirpus *fluitans*.

BULLA, in *Antiquity*, a golden ornament, of a globular figure, and generally ſuppoſed to have been hollow within, wherein was contained ſome amulet, to ſerve as a preſervative from witchcraft and envy, hung about the neck by thoſe who triumphed among the Romans; and alſo by the children of the patricians, and even *ingenui*, as a badge of their hereditary nobility and freedom, by which they might be animated to behave themſelves in a manner worthy of their birth. Authors are divided in their opinions about the form of this ornament, which the Sabine women, in acknowledgment of that increaſe of wealth and power for which Rome was indebted to them, were allowed to hang about the necks of their children. Plutarch (in Romul.) ſays, that they reſembled the little bubbles which are formed by the drops of rain, when they fall upon running water. Hence it has been inferred, that they were hollow and light; others think that they were half globes, flat on one ſide, and globular on the other. Some have ſuppoſed, that they were originally made in the ſhape of a heart, in order to prompt their wearers to the acquiſition of wiſdom; and others ſay, they were round, with the figure of a heart engraved on them. The form, in proceſs of time, is ſaid to have varied from a complete circle to that of a ſegment. Such was the ſhape of the golden bulla lately found at Mancheſter; and as this had no aperture by which an amulet could be introduced, Mr. Whitaker (Hiſt. Mancheſter, vol. i. p. 79.) concludes, that they were not hollow: and he ſuppoſes, that they were intended at firſt rather as amulets than as ornaments; alleging that they were frequently impreſſed with the figure of the ſexual parts. As to their origin, it has been affirmed by ſome, that they were firſt introduced by Romulus, and that he gave one of them to Tullus Hoſtilius, the firſt child born of the rape of the Sabines. Others aſcribe the introduction of them to Tarquin the Elder, who gave a bulla to his ſon, at the age of 14, together with the prætexta, becauſe he had killed an enemy; and hence it was afterwards aſſumed by other patricians. But Macrobius ſays, that Tarquin extended the right of wearing this ornament to all the children of the patricians; and that accordingly he began with his own.

The bulla was not allowed to the children of ſlaves, or even of *liberti*, who, in lieu thereof, wore a leather collar round the neck, much after the manner of the purple ſtring to which the bulla was hung. But the great veſtal, and the Roman ladies, wore a bulla; the former by way of diſtinction, the latter as a piece of dreſs. We may add, that bullæ were ſometimes allowed to ſtatues; whence the phraſe, “ſtatuæ bullatæ.” M. Lepidus, having killed an enemy, and ſaved a citizen, even when a boy, had a “bullated” ſtatue erected to him in the Capitol, in memory of the exploit. The Roman youth laid aſide the bulla, together with the “pretexta,” and conſecrated it to the Lares, when they arrived at their fifteenth year; as appears from the ſatyriſt:

> “Cum primum pavido cuſtos mihi purpura ceſſit,
> Bullaque ſuccinctis Laribus donata pependit.”

Perſ. Sat. v. ver. 20. Hiſt. Acad. Inſcr. tom. ii. Valer. Max. lib. iii. cap. 1. Cic. in Verr. I. 58. Macrob. Sat. i. 6.

BULLA was alſo a denomination given to divers other metalline ornaments made after the form of bullæ.

In which ſenſe, bullæ ſeem to include all golden and ſilver ornaments of a roundiſh form, whether worn on the habits of men, the trappings of horſes, or the like. Such were thoſe decorations uſed by the ancients on their belts and doors. Virgil, ſpeaking of Pallas's belt or girdle, ſays:

> "Notis fulſerunt cingula bullis
> Pallantis pueri." Æneid. lib. xii. ver. 942.

The bullæ of doors were a kind of large-headed nails faſtened on the doors of the rich, and kept bright with great care. The doors of temples were ſometimes adorned with golden bullæ.

The bullæ worn by ſoldiers on their belts, and alſo on the doors of houſes, &c. have been conſidered by ſome, not merely as ornaments, but as a kind of amulets, and intended as preſervatives from diſeaſes and dangers, as well as incentives to glory.

BULLA alſo denoted a table hung up in the public courts, to diſtinguiſh which days were *faſti*, and which *nefaſti*; anſwering in ſome meaſure to our calendar.

BULLA, in *Conchology*, the name of a genus of ſhells, the character of which is thus defined; animal a limax; ſhell univalve, convoluted, and unarmed; mouth, or aperture, ſomewhat ſtraitened, oblong, longitudinal, and at the baſe very entire; pillar-lip oblique, and ſmooth.

The ſpecies of this genus are ovum, volva, biroſtris, ſpelta, verrucoſa, gibboſa, naucum, aperta, hydatis, ampulla, lignaria, phyſis, ampluſtra, ficus, rapa, canaliculata, conoidea, fontinalis, hypnorum, turrita, gelatinoſa, terebellum, cypræa, virginea, faſciata, ſtrigata, ſtriatula, exarata, bifaſciata, ambigua, zebra, achatina, hyalina, ovata, ferruginoſa, velum, veſica, cylindrica, oliva, voluta, dominicenſis, purpurea, ſpreta, ſolida, ſtercuſpulicum, ſcabra, akera, ſoluta, truncata, and carnea.

BULLA, in *Zoology*, a ſpecies of CYCLIDIUM, of an orbicular form and tranſparent. *Müll.*

BULLA is alſo a ſpecies of VOLVOX, the form of which is ſomewhat oval. *Martiniere.*

BULLA *Velutina*, of *Mülleri*, in *Conchology*. See HELIX HELIOTOIDEA.

BULLA *regia*, or *Bullaria* of Ptolemy, in *Ancient Geography*, a free town of Africa, on the route from Carthage to Hippona, between Simittu and Novæ Aquilinæ. Anton. Itin.

BULLACE-TREE, in *Botany*. See PRUNUS *inſititia*.

BULLÆUM, in *Ancient Geography*, a town of the Silures in Britain, placed by Camden at Buallt or Builth in Brecknockſhire, by Baxter at Caerphilly, and by Horſley at or near Uſk in Monmouthſhire: thus uncertain is its ſituation.

BULLAN-BAY, in *Geography*, a bay on the weſt coaſt of Ireland, between the northern part of the Iſle of Achil and the main land of the county of Mayo.

BULLANSPOUR, a town of Hindooſtan, in the hilly country of Cahlore, ſeated near the river Setlege, 159 miles E. of Lahore, and about N. 26° E. 60 geographical miles from Sirhund. N. lat. 31° 31′. E. long. 76° 40′.

BULLARII, in the court of Rome, the makers or drawers of bulls or conſtitutions. See BULL.

BULLARY, *Bullarium*, a collection of papal bulls. We have extant divers kinds of bullaries; ſome containing only the bulls of particular popes; ſuch are the bullaries of Innocent XII. and Clement XI. Others contain the bulls granted to particular communities; ſuch is the bullary of the order of Cluny, &c.

A general bullary of all the papal conſtitutions from Gregory VII. to Sixtus Quintus, was compiled by order of pope Sixtus Quintus, in 1586; ſince which has been publiſhed a great bullary, by Laert. Cherubin, containing the bulls of all the popes from Leo in 440, to Paul V. in 1559; ſince continued by Ang. Cherubin to the year 1644, and by Ang. a Lantuſca and Jo. Paulus to the year 1676; and, laſtly, by an anonymous editor to the time of Benedict XIII. under the title of "Bullarium magnum Romanum." We have the ſame digeſted in a new method by Bouchardus; a commentary on it begun by Vinc. Petra, and a ſummary of it by Novarius. Fabr. Bibl. Med. Ævi. Lat. lib. ii. tom. i. p. 816. 822.

BULLATA, in *Conchology*, a ſpecies of VOLUTA, the ſhell of which is cylindrical, very glabrous, reddiſh, with ſomewhat livid belts; ſpire obtuſe; pillar-lip with four plaits within; aperture effuſe. Chemnitz. Inhabits the Indian ſeas.

BULLATUS, a ſpecies of SOLEN, the form of which is ſomewhat rotund, inflated, and ſtriated ſlightly; anterior part of the ſhell retained open by the crenatures with which it is beſet.—This ſort inhabits the American ſeas, and it is believed thoſe of India alſo. The ſhell is thin, ſomewhat pellucid, longitudinally ſtriated, white, and ſpotted or clouded with purple. Hinge with a ſingle tooth. Marginal teeth remote, compreſſed, and inſerted in a kind of hollow in the oppoſite valve.

BULLATUS, a ſpecies of CONUS, the ſhell of which is yellow, clouded with white. *Linn.* Native place unknown. Adanſon calls it Potan.

This ſhell is thin, ſometimes of an uniform colour, but more frequently ſpotted, clouded, or ſtriped; aperture of the mouth for the moſt part large, and blueiſh.

BULLE, in *Geography*, a town of Switzerland, in the canton of Friburgh, where the inſurgents of Gruyeres aſſembled in 1781, in order to concert meaſures for obtaining a redreſs of grievances; 10 miles S. of Friburgh. N. lat. 46° 40′. E. long. 6° 54′.

BULLENMEER, a town of Germany, in the circle of Weſtphalia, and county of Oldenburg; 18 miles N. of Oldenburg.

BULLER, CAPE, a cape of South Georgia, to the weſt of the bay of iſlands, and about 7 leagues from cape North, nearly E. of it. S lat. 53° 58′. W. long. 37° 40′.—Alſo, a cape on the coaſt of Terra del Fuego iſland, in S. lat. 53° 58′. W. long. 67° 40′.—Alſo, a cape on the coaſt of New Britain, in the Eaſt Indian ocean. S. lat. 4° 56′. E. long. 151° 23′.

BULLERS, or BOULERS of *Buchan*, a natural harbour, on the eaſt coaſt of Scotland, about 6 leagues N. from Aberdeen, and 2 S. from Peterhead. It is only frequented by fiſhermen, and formed by a rock of an irregular oval form, projecting into the ſea from the middle of a bay to the diſtance of 100 yards. Veſſels of all ſizes may ſhelter here from the weather; but landing is impracticable. It derives its name from boiling, on account of the turbulence of the water.

BULLES, a ſmall town of France, in the department of the Oiſe and diſtrict of Clermont, ſeated on the river Breſche, and celebrated for its fine flax and linen; 2 leagues N.W. of Clermont.

BULLET, an iron or leaden ball, or ſhot, wherewith fire-arms are loaded. Some derive the word from the Latin *botellus*, others from the Greek βαλλειν, *to throw*. *Bullets* are of various kinds, viz. *red-hot bullets*, made hot in a forge; intended to ſet fire to places where combuſtible matters are found. See Shot.

Hollow bullets are ſhells made cylindrical, with an aperture and a fuſee at one end, which giving fire to the inſide, when in the ground, burſts, and has the ſame effects with a mine.

Chain-bullets, conſiſting of two balls, joined by a chain three or four feet apart.

Branch-bullets, two balls joined by a bar of iron five or ſix inches apart.

Two-headed bullets, called alſo *angels*, being two halves of a bullet joined by a bar, or chain, are chiefly uſed at ſea for cutting of cords, cables, ſails, &c.

Quarter-bullets. See Quarter.

The diameter of a leaden bullet, weighing one pound, is 1.69 inches, according to ſir Jonas Moore; or by a table in Muller's "Treatiſe of Artillery," (p. 56), 1.672 inches; and the diameter of any other bullet is found by dividing 1.69 inches by the cube root of the number, which expreſſes how many of them make a pound; or by ſubtracting continually the third part of the logarithm of the number of bullets in the pound from the logarithm .2278867 of 1.69, and the difference will be the logarithm of the diameter required.

Thus the diameter of a bullet, of which 12 make a pound, will be found by ſubtracting .3597270, a third part of 1.0791812 the logarithm of 12, from the given logarithm .2278867; or becauſe this logarithm is leſs than the former, an unit muſt be added, ſo as to have 1.2278867; and then the difference .8681597 will be the logarithm of the diameter ſought, which is .738 inches, obſerving that the number found will be always a decimal, becauſe the number ſubtracted is greater than the other.

We may alſo deduce the diameter of any bullet from its given weight, provided that the ſpecific gravity of lead is known: for, ſince a cubic foot of lead weighs 11,325 ounces, and 678 is to 355 as the cube of a foot or 12 inches, *i. e.* 1728, to the contents of a ſphere, which is therefore 5929.7 ounces; and ſince ſpheres are as the cubes of their diameters, the weight 5929.7 is to 16 ounces, or one pound, as the cube 1728 is to the cube of the diameter of a ſphere, which weighs 16 oz. or 1 lb.; which cube is 4.66263, and its root is 1.6706, the diameter ſought.

By the rule above laid down is calculated the following table, ſhewing the diameters of leaden bullets, from 1 to 39 in the pound

	0	1	2	3	4	5	6	7	8	9
0	0	1.69	1.341	1.172	1.064	0.988	0.930	0.883	0.845	0.812
1	0.784	0.760	0.738	0.719	0.701	0.685	0.671	0.657	0.645	0.633
2	0.623	0.612	0.603	0.594	0.586	0.578	0.570	0.563	0.556	0.550
3	0.544	0.537	0.532	0.527	0.521	0.517	0.512	0.507	0.503	0.498

N. B. The upper horizontal column ſhews the number of bullets to a pound; the ſecond, their diameters; the third, the diameters of thoſe of 10, 11, 12, &c.; and the fourth, thoſe of 20, 21, 22, &c.; and the laſt, thoſe of 30, 31, 32, &c.

The government allows eleven bullets in the pound for the proof of muſkets, and 14.5 in the pound, or 29 in two pounds for ſervice; 17 for the proof of carabines, and 20 for ſervice; and 28 in the pound for proof of piſtols, and 34 for ſervice. The diameter of muſket bullets differs but 1-50th part from that of the muſket-barrel; for if the ſhot but juſt rolls into the barrel, it is ſufficient. Cannon-bullets or balls are of different diameters and weights, according to the nature of the piece. See Caliber and Shot.

The firſt mention of iron-bullets in the "Fœdera," occurs A.D. 1550, in an acquittance for delivery of the artillery and ammunition of Boulogne; and yet ſtone-bullets remained in uſe conſiderably later than this time.

According to Merſenne, a bullet, ſhot out of a great gun, flies 92 fathoms in a ſecond of time, which is equal to 589½ Engliſh feet; and, according to Huygens, it would be 25 years in paſſing from the earth to the ſun: but according to ſome very accurate experiments of Dr. Derham, it flies, at its firſt diſcharge, 510 yards in five half-ſeconds; or about 7 miles in a minute: allowing therefore the ſun's diſtance 95,000,000 Engliſh miles, a bullet would be near 26 years in its paſſage at the full ſpeed.

Bullets ſhot into the water undergo a refraction; ſeveral experiments concerning which are given by Mr. Carré.—Vide Mem. Acad. Scienc. ann. 1705, p. 277.

The extraction of bullets from wounds is an operation deſcribed by chirurgical writers. Bullets ſometimes remain eaſy in the body during many years.

Swallowing of muſket bullets is ſometimes practiſed to remove iliac and colic pains. Mr. Young gives a caſe wherein this had a terrible effect: the bullet happening to miſs its way down, inſtead of the *œſophagus*, got into the *trachea*. Mr. Chirac has a diſſertation on the queſtion, which of the two is ſafer in iliac caſes, to ſwallow leaden bullets, or crude mercury? He gives the preference to the bullets. Phil. Tranſ. N° 263.

Bullet-*moulds* conſiſt of two concave hemiſpheres, with a handle whereby to hold them; and between the hemiſpheres is a hole, called a gate, at which to pour in the melted metal. The chaps or hemiſpheres of bullet-moulds are firſt punched, being blood-red hot, with a round-ended punch, of the ſhape and ſize of the intended bullets. To cleanſe the inſides, they make uſe of a bullet-bore.

Bullet-*bore* is a ſteel ſhank, having a globe at one end, wherewith to bore the inſide of a mould clean, of the ſize intended.

Bullet-*iron*, a denomination given by ſome to Spaniſh or Swediſh bars of iron.

Bullet, John-Baptist, in *Biography*, a profeſſor of theology, and dean of the univerſity at Beſançon, died in that city in 1775, at the age of 76 years. He was a member of ſeveral learned ſocieties, and eſteemed as a valuable writer. His principal works are, "His Hiſtory of the Eſtabliſhment of Chriſtianity. taken ſolely from Jewiſh and Pagan Writers;" 1764, 4to. "The Exiſtence of God, demonſtrated by Nature;" 2 vols. 8vo. "Reply to the Difficulties of Unbelievers, reſpecting various paſſages in the Sacred Writings;" 3 vols. 12mo. "De Apoſtolicæ Eccleſiæ Gallicanæ Origine;" 1752, 12mo. "Memoirs on the Celtic Language," 1754-59, 3 vols. folio; to which work he is chiefly indebted for his reputation. "Hiſtorical Enquiries concerning Playing-Cards;" 1757, 8vo. "Diſſertations on the Hiſtory of France," 1759, 8vo.; all written in French, except that with the Latin title. Nouv. Dict. Hiſt.

BULLEYN, William, of a reſpectable family of the ſame name, in Suffolk, was born in the Iſle of Ely, in the early part of the reign of Henry the eighth. At a proper age he was ſent to Cambridge, which he quitted, probably after taking his bachelor's degree, and went to Oxford, where he applied himſelf to the ſtudy of medicine, and read the Greek and Arabian writers, in both which languages he appears to have been tolerably ſkilled. While reſident there, he made excurſions through the neighbouring countries, paying great attention to the plants that he had found recommended in the cure of diſeaſes; and after taking the degree of doctor, he extended his excurſions, travelling over the greateſt part of England and Scotland. He afterwards viſited the continent, with the ſame view. On his return, he was made rector of Blaxhall in Suffolk, through the intereſt, probably, of his family, and practiſed medicine there. On the acceſſion of queen Mary, he removed to Durham, thinking it more ſafe, being a proteſtant, to live at that diſtance from the court. He lived here in great intimacy with ſir Thomas Hilton, governor of Tinmouth fort, and became a ſharer, or joint proprietor of the ſalt-pans. Sir Thomas dying under his care of a putrid fever, he fell into ſuch diſgrace, that he found it neceſſary to remove from Durham, and Mary being dead, he came to London; but the vengeance of the family purſuing him, he was taken up, arraigned, and tried for the murder of his friend; and though he eaſily cleared himſelf from the imputation of this crime, he was continued in priſon, at the ſuit of the proſecutor, the brother of ſir Thomas, for a debt due to the family. While in priſon, he tells us, he wrote the greater part of his medical works. Having at length diſcharged his debt, he returned to London, was made a member of the College of Phyſicians, and acquired conſiderable reputation for his ſkill in the practice of medicine, which he enjoyed to the time of his death, January 7, 1576. His rectory he gave up at the time of his quitting Blaxhall. He was an anceſtor, Granger ſays, of the late Dr. Stukely. There are two portraits of him, both cut in wood; the one a profile, with a long beard, publiſhed with his Government of Health, an octavo volume, 1548; the other a whole length, to his "Bullein's Bulwark of Defence againſt all Sickneſs, Soarneſs, and Wounds that do dayly aſſault Mankinde;" fol. 1562. His laſt work is entitled, "A Dialogue, both pleaſante and pietifull; wherein is a goodlie Regiment againſt the Fever Peſtilence; with a Conſolation, and Comfort againſt Death;" 8vo. 1564. In this work, not more than a ſeventh part of which, Dr. Aikin ſays, is on the ſubject of medicine, the author appears as a perſon of much humour, and fancy. Haller mentions a work by Richard Bulleyn, who was alſo, like our author, both a divine and a phyſician; "De Nephritide, ejuſque Remediis," which was publiſhed in 1562. Theſe works, which are now only ſought for by collectors, as ſpecimens of the engraving, and printing of the time, paſſed through ſeveral editions, and doubtleſs contributed in raiſing the reputation of the writer. This ſhews the little progreſs our anceſtors had then made in civilization and knowledge, as our author was no better informed than to imagine, that beads made of ebony might be ſucceſsfully worn as a charm againſt certain diſeaſes, and "that witchcraft was more hurtful in the realm than either quartan, pox, or peſtilence;" lamenting "that damnable witches ſhould be ſuffered to live unpuniſhed, while ſo many bleſſed men (proteſtants) were burned." But theſe prejudices continued more than a century after his time; for in Charles the Second's reign we find doctor Chamberlain, then in high repute as an accoucheur, ſanctioning the folly of putting necklaces on children to facilitate dentition, and writing a treatiſe, to ſhew the manner in which the beads effected this purpoſe. Aikin's Biographical Memoirs of Medicine, &c.

BULLIALDUS, or Boulliau, Ismael, a celebrated aſtronomer and ſcholar, was born of proteſtant parents, at Houdun in France, September the 28th, 1605; and having finiſhed his ſtudies in philoſophy at Paris, and in civil law at Poictiers, he applied to mathematics, theology, ſacred and profane hiſtory, and civil law, with ſuch aſſiduity, that he became eminent in each of theſe departments, and acquired the reputation of an univerſal genius. As he had travelled for his improvement into Italy, Germany, Poland, and the Levant, he formed an extenſive acquaintance with men of letters, and maintained a correſpondence with the moſt diſtinguiſhed perſons of his time. Although he had been educated a proteſtant, he changed his profeſſion at the age of 27 years, and became a catholic prieſt. His life was prolonged to his 89th year; and having retired to the abbey of St. Victor at Paris in 1689, he died there November the 25th, 1694. Beſides his pieces concerning eccleſiaſtical rights, which excited attention, and the hiſtory of Ducas, printed at the Louvre, in 1649, in the original Greek, with a Latin verſion and notes, he was the author of ſeveral other works, chiefly mathematical and philoſophical. His "Treatiſe on the Nature of Light," was publiſhed in 1638; and his work entitled, "Philolaus, ſive de vero Syſtemate Mundi," or true ſyſtem of the world, according to Philolaus, was printed at Amſterdam in 1638, and re-publiſhed in 1645, under the title of "Aſtronomia Philolaica;" grounded upon the hypotheſis of the earth's motion, and the elliptical orbit deſcribed by the planet, illuſtrated with various methods of demonſtration. To this work were added his "Tabulæ Philolaicæ," much improved and recommended by Riccioli, who ſtyles the author "Aſtronomus profundæ indaginis." Upon examining the hypotheſis, or approximation of biſhop Ward, he found that it did not agree with the planet Mars; and in his defence of the Philolaic aſtronomy againſt the biſhop, he ſhewed that from four obſervations of Tycho on the planet Mars, this planet in the firſt and third quarters of the mean anomaly was more forward than it ought to have been upon Ward's hypotheſis; but that in the ſecond and fourth quadrants of the ſame, the planet was not ſo far advanced as that hypotheſis required. He therefore undertook the correction of the biſhop's hypotheſis, and made it more conformable to the orbits of the planets, which were moſt eccentric, and introduced what Street has called in his "Caroline Tables," the "Variation:" for theſe tables were calculated by means of the correction of Bullialdus, and were thus more accurate than any which had preceded them. Dr. Gregory eſteems this correction a very happy one, conſidered as a correction of an approximation to the true ſyſtem; for we are thus enabled to deduce the coequate, or true anomaly *à priori* and directly from the mean, in a manner very well correſponding to the obſervations; which no one, ſays Mercator, had effected before. Bullialdus, while he makes every planet move in an ellipſe, ſuppoſes it to be ſuch a one as if cut out of a cone, would have the axis of the cone paſs through one of its foci, or that next the aphelion. See Gregory's Aſtron. lib. iii. prop. 7.

In 1644 Bullialdus publiſhed a tranſlation of "Theo, the Platoniſt of Smyrna," with notes; and in 1657 his treatiſe "De Lineis Spiralibus, Exerc. Geom. et Aſtron.;" Paris, 4to. In 1663 he publiſhed a treatiſe of "Ptolemy de judicandi Facultate;" and in 1682 appeared at Paris, in folio, his large work, entitled "Opus Novum ad Arithmeticam Infinitorum," being a diffuſe amplification of Dr. Wallis's Arithmetic of Infinites. Upon being conſulted by M. Thoinard concerning the appearance of the moon in the month of March, and 33d year of the chriſtian era, he made the requiſite calculations, and replied that it could not have been ſeen in Judæa till the 19th of that month, and that it was probable that Jeſus Chriſt was crucified on the 3d of April of the ſame year. Bullialdus alſo publiſhed two admonitions or notices to aſtronomers; the *firſt*, concerning a new ſtar in the neck of the whale, ſometimes appearing, and ſometimes diſappearing; and the *ſecond*, concerning a nebula in the northern part of Andromeda's girdle, which had not been diſcovered by any of the ancients, and which is ſubject to periodical changes. Moreri. Martin.

BULLIG, in *Geography*, a rocky ſhoal in the Atlantic near the weſt coaſt of Ireland; it is about half a mile S. of Carrikelra iſland near Gulin head, in the county of Galway. W. long. 9° 47′. N. lat. 53° 12′.

BULLIMONY, or BOLLIMONG, denotes a mixture of ſeveral ſorts of grain, as oats, peaſe, and vetches, called alſo *maſlin*, or *mong-corn*.

BULLINGER, HENRY, in *Biography*, a Swiſs reformer, was born in 1504 at Bremgarten, on the borders of the canton of Zurich; and educated at Emmerick in the duchy of Cleves, whither he was ſent by his father at the age of 12 years, and where he was ſupported for three years by the alms he procured for ſinging from door to door. Having been accuſtomed to the mortification and hardſhips attendant on this mode of ſubſiſtence, he entertained thoughts of entering among the Carthuſians. But diverted from this reſolution by the admonitions of his elder brother, he removed to Cologn at the age of 15 years, and devoted himſelf to the ſtudy of the ſchool-philoſophy, and of claſſical literature. About this time his attention was directed to the writings of Melancthon, and other reformers, the peruſal of which produced a diſlike of the doctrines of the Romiſh church, though he did not yet ſeparate from it. Having finiſhed his ſtudies at Cologn in 1522, he returned to his father's houſe, and in the following year he was invited by the abbot of La Chapelle, near Zurich, to be a teacher in his convent, into which the reformation of Zuinglius was introduced in 1526, principally by his inſtruction. Attaching himſelf to this reformer, he accompanied him to the conference held at Berne in 1528; and he afterwards ſettled as reformed paſtor at his native place. In 1531, after the victory obtained by the catholic cantons over the proteſtants, he was obliged to retire to Zurich, where he ſucceeded Zuinglius, who had loſt his life in the battle. In this ſituation he applied with aſſiduity to his miniſterial labours and his ſtudies, and edified his church by his writings as well as by his ſermons. When Bucer attempted to reconcile the Lutherans and Zuinglians, by introducing a kind of middle doctrine with regard to the euchariſt, he counteracted his efforts; and he was appointed by the Swiſs churches in 1545 to reply to the harſh cenſures, which were publiſhed by Luther againſt their doctrine reſpecting the ſacrament. In 1549 he concurred with Calvin in drawing up a formulary, expreſſing the conformity of belief which ſubſiſted between the churches of Zurich and Geneva, and intended on the part of Calvin, for obviating any ſuſpicions that he inclined to the opinion of Luther with reſpect to the ſacrament. In the ſame year he urged many reaſons againſt renewing the ſubſidiary treaty between the proteſtant Swiſs and Henry II. king of France, and by his influence the propoſal for this purpoſe was rejected. Among other arguments, he urged upon their conſideration, "that it was not lawful for perſons to hire themſelves, in order to kill thoſe who had done them no wrong;" a poſition, which, however conſonant to the principles and ſpirit of chriſtianity, many profeſſed believers have too frequently diſregarded. Bullinger afforded kind aſſiſtance to the Engliſh divines who fled into Swiſſerland from the perſecution of queen Mary; and he drew up a confutation of the pope's bull that excommunicated queen Elizabeth, which has been tranſlated into Engliſh. He alſo perſuaded the magiſtrates of Zurich to erect a new college in 1538; and he prevailed with them to eſtabliſh a ſchool, on the ſcite of an old nunnery, in which 15 youths were taught and maintained, free of expence. In 1551 he wrote a book, the purport of which was to ſhew, that the council of Trent had no other deſign than to oppreſs the profeſſors of ſound religion; and, therefore, that the cantons ſhould pay no regard to the invitations of the pope, which ſolicited their ſending deputies to that council. In 1561 he commenced a controverſy with Brentius concerning the ubiquity of the body of Chriſt, zealouſly maintained by the one, and as vehemently oppoſed by Bullinger, which continued till his death, that happened on the 17th of September, 1575. Beſides a great number of printed works, amounting to ten volumes, he left ſeveral pieces in manuſcript. Although Bullinger had been once married, and had eleven children, he was blamed for not taking another wife, when he became a widower at the age of ſixty; ſuch was the importance annexed by the firſt reformers to the connubial ſtate, eſpecially with regard to miniſters, as it afforded a manifeſt proof of their renunciation of popery. Gen. Dict.

BULLION, denotes gold or ſilver in the maſs or billet, before it is coined. 9 Ed. III. ſt. ii. c. 2.

The word is apparently formed from the French *billon*, a maſs of gold or ſilver below ſtandard, which Du-Cange derives farther from *billa*, as being *aurum aut argentum in maſſam ſeu billam*, i. e. *baculum conflatum*.

The term is applied to theſe metals, either when ſmelted from the ore, and not perfectly refined, or when ſo refined, and melted down in bars, or ingots, or any unwrought body of a certain degree of fineneſs. In order to render gold and ſilver fit for uſe, it is neceſſary to reduce and harden them by an alloy of ſome baſer metal; and the quantity of this alloy is aſcertained by the legiſlative regulations of different countries, ſo that the proportion of the one to the other may conſtitute the ſtandard ſilver of ſuch countries. According to the laws of England all ſorts of wrought plate ſhould be made in conformity to the legal ſtandard: and the prices of ſtandard gold and ſilver, regulate the value of the bullion, conſiſting of ingots, bars, duſt, or foreign ſpecie; conſequently, in order to aſcertain the value of bullion, it is firſt aſſayed. See ASSAY. See alſo GOLD and SILVER.

Silver *bullion* is ſometimes alſo denominated PLATE.

Silver and gold, whether coined or uncoined (though uſed for a common meaſure of other things), are no leſs a commodity than wine, tobacco, or cloth; and may, in many caſes, be exported as much to national advantage as any other commodity.

In all great commercial countries a good deal of bullion is alternately imported and exported for the purpoſes of foreign trade. This bullion, as it circulates among ſuch countries in the ſame manner as the national coin circulates in every particular country, may be conſidered as the money of the great mercantile republic. Whilſt the national coin receives its movement and direction from the commodities circulated within the precincts of each particular country, the money of the mercantile republic derives its movements from thoſe that are circulated between different countries. Both are employed in facilitating exchanges, the one between different individuals of the ſame, the other between thoſe of different nations. However, the importation of gold and ſilver is not the principal, much leſs the ſole benefit which a nation derives from its foreign trade. It is, indeed, part of the buſineſs of foreign commerce to ſupply countries which have no mines with the gold and ſilver that are wanted in them: but this is, comparatively, a very inſignificant object; nor is it by the importation of gold and ſilver, that the diſcovery of America has enriched Europe. But by opening a new and inexhauſtible market to all the commodities of Europe, it gave occaſion to new diviſions of labour and improvements of art, which, in the narrow circle of the ancient commerce, could never have taken place for want of a market to take off the greater part of their produce.

Gold and ſilver, according to Mr. Locke, are the moſt ſolid and ſubſtantial part of the moveable wealth of a nation; and to multiply theſe metals ſhould, he thinks, on that account, be the great object of its political economy. Countries that have political connections with foreign nations, and that are obliged to carry on foreign wars, and to maintain fleets and armies in diſtant countries, and to ſubſidize foreign princes, are under a neceſſity of ſending money in ſome form or other abroad; and therefore it has been ſaid, that in time of peace it ſhould endeavour to accumulate gold and ſilver, that when occaſion requires, it may poſſeſs the means of carrying on foreign wars. Upon theſe popular principles all the different nations of Europe have ſtudied, though to little purpoſe, every poſſible means of accumulating gold and ſilver in their reſpective countries. Spain and Portugal, the proprietors of the principal mines which ſupply Europe with thoſe metals, have either prohibited the exportation of them under the ſevereſt penalties, or ſubjected it to a conſiderable duty. The like prohibition ſeems anciently to have made a part of the policy of moſt other European nations. But when thoſe countries became commercial, the merchants found this prohibition extremely inconvenient, and remonſtrated againſt it, as hurtful to trade. They repreſented, firſt, that the exportation of gold and ſilver, in order to purchaſe foreign goods, did not always diminiſh the quantity of thoſe metals in the kingdom, but might frequently increaſe that quantity; becauſe theſe foreign goods, if not conſumed in the country, might be re-exported, and ſold in foreign countries for profit, which would bring back with increaſe the treaſure originally ſent out for the purchaſe of them. They, moreover, repreſented that this prohibition could not hinder the exportation of gold and ſilver, which, on account of the ſmallneſs of their bulk in proportion to their value, could eaſily be ſmuggled abroad. Theſe arguments produced the wiſhed-for effect; and the prohibition of exporting gold and ſilver was reſtricted in France and England to the coin of theſe reſpective countries. The exportation of foreign coin and bullion was made free, and the firſt law for this purpoſe in England was paſſed in 1663. In Holland, and in ſome other places, this liberty was extended even to the coin of the country. A country that has no mines of its own, muſt undoubtedly draw its gold and ſilver from foreign countries; and, on account of their ſmall bulk and great value, they are as eaſily tranſported as obtained. When the quantity of gold and ſilver imported into any country exceeds the effectual demand, no vigilance of government can prevent their exportation. All the ſanguinary laws of Spain and Portugal are not ſufficient for keeping their gold and ſilver at home. As they are eaſily tranſported from places where they abound, to thoſe where they are wanted, their price does not admit of the ſame fluctuation with that of many other commodities, that are not ſo conveniently and ſpeedily removed. The changes which take place in their value are generally ſlow, gradual, and uniform.

Inſtead of accumulating gold and ſilver, with a view to the augmentation of the real wealth of the country, Dr. Adam Smith (Wealth of Nations, vol. ii. p. 157.) recommends their being conſidered, under whatever form they exiſt, as utenſils; and increaſing the uſe for them, by increaſing the conſumable commodities, which are to be circulated, managed, and prepared by means of them, as the moſt effectual and moſt certain method of increaſing their quantity, which will ever keep pace with the uſe to which they are applied; and beyond this no law can ever prevent their being immediately ſent out of the country. He adds, that it is not always neceſſary to accumulate gold and ſilver, in order to enable a country to carry on foreign wars, and to maintain fleets and armies in diſtant countries. Fleets and armies are maintained, not with gold and ſilver, but with conſumable goods; and the nation which, from the annual produce of its domeſtic induſtry, from the annual revenue ariſing out of its lands, labour, and conſumable ſtock, has wherewithal to purchaſe thoſe conſumable goods in diſtant countries, can maintain foreign wars there. See Coin and Money.

Bullion is alſo uſed for the place where the king's exchange is kept: or where gold and ſilver are brought in the lump to be tried or exchanged.

BULLIT's Lick, in *Geography*, a ſalt-ſpring lying in Salt river, in Kentucky, America, and giving name to the river. It is diſtant 20 miles from the rapids of the Ohio, near Saltſburgh, and is the fineſt ſpring that was worked in the county.

Bullits, a county of Kentucky, containing 3446 inhabitants, of whom 944 are ſlaves.

BULLOCH-MORE, a rocky ſhoal, about a quarter of a mile long from eaſt to weſt, which lies above a mile W. of St. John's point, in the mouth of Killibeg's harbour in the weſt of Ireland: the leaſt water in it is ſix feet. M'Kenzie.

BULLOCK, in *Rural Economy*, the male of the cattle kind of animals, after being caſtrated. It is the ſame with ox. Animals of this kind are generally termed bullocks from two to five, ſix, or more years old.

The author of the "Synopſis of Huſbandry" has obſerved, that in bullocks "a ſmooth coat and healthy countenance are proofs of their kindly diſpoſition, and that they will not deceive the buyer in the future progreſs; whereas, a drooping countenance, a lank belly, and a ſtaring coat, may be conſidered as unfavourable circumſtances, and certain indubitable ſigns, either that ſuch beaſts are unhealthy or by nature unthrifty and unprofitable." Beſides theſe, much depends on the form and conſtruction of the animal: "a cloſe well-ſet bullock, with a large dewlap, ſtout legs, deep cheſt, broad buttocks, and thick flank, will rarely deceive the purchaſer; whereas thoſe of a contrary ſhape, looſe jointed, long-legged, with a prominent back-bone, great length of body, ſharp buttocks, and a belly tucked up, though to appearance larger than the firſt mentioned, are not likely to pay ſo well for their meat, and will be found much lighter in the ſcale from theſe defects."

Fattening bullocks, it is obſerved, "require to be foddered with hay in the ſeverity of the winter months, and for this ſeaſon it is always a prudent meaſure, where it can be done, to lay in for mowing a certain portion of marſh or other good graſs land, that there may be no want of fodder in the winter and ſpring of the year; for it is in March and April, if thoſe months turn out to be unpropitious, that ſtock of every kind is more apt to ſuffer than in the depth of winter; and when young bullocks become much reduced in fleſh at that ſeaſon, it is a very difficult taſk to raiſe them, and they will continue, during the proceſs of their fattening, to betray marks of the check they met with in their youth, ſo as never to arrive at the weight when fattened, that they would have done if they had not been ſuffered to pitch in the early ſtage of their life.

Good water is likewiſe a very eſſential requiſite in feeding horned cattle; and ſuch graziers will never find their account in ſetting about this buſineſs, whoſe grounds do not abound with a continual and plentiful ſupply of it; nor will the beaſts thrive on dry lands, though the graſs ſhould be in the largeſt abundance, for bullocks require a large quantity of water, to dilute their victuals, and delight in the ſummer time to chew the cud in pools or rivulets, where they may enjoy a cool retreat, and with alternate vibrations of the tail defend themſelves from the troubleſome attacks of flies, gnats, and other inſects. The period when beef generally fetches the beſt price is towards the month of March; hence, thoſe who are fortunate enough to have any fat beaſts in the ſpring, are certain to make a good market of them, eſpecially in years in which the crops of turnips turn out deficient; as when there are large growths of this root, vaſt numbers of horned cattle are fattened on them in Norfolk, and the adjoining counties, and theſe are often brought to Smithfield in ſuch herds as to cauſe a conſiderable reduction in the market.

Beſides the method of fattening bullocks on graſs lands, there are ſeveral others in the wolds of Kent and Suſſex, where the land is the moſt fertile of any in the ſouthern parts of the kingdom, and where the meadows produce a graſs of the moſt rich and nutritious quality, and in an abundance equal to the ſtrength of the paſture, where the ponds and rivulets yield a continual ſupply of wholeſome and refreſhing drink, and where the hay, when well ſecured, poſſeſſes a virtue anſwerable to the green herbage: on theſe feeding lands the grazier finds his account in ſtocking his farm with bullocks of the largeſt ſize, either from the iſle of Angleſea, or from Yorkſhire, Staffordſhire, or other places remarkable for breeding the moſt weighty beaſts. Theſe bullocks have generally been worked for ſome years, a practice which not only ſerves to render them tractable and docile, whence they lie more quiet in the feeding paſtures, but which renders ſuch beaſts much more expeditious in getting into fleſh, than thoſe which have not been accuſtomed to the yoke. Theſe bullocks having been raiſed into good condition by means of the graſs without doors, are, at the approach of winter, taken into the houſe, where they are kept in ſeparate ſtalls, and tended with a conſtant ſupply of this highly nutritious fodder, the intrinſic goodneſs of which is often alone ſufficient to complete the buſineſs, and render the oxen fit for the butcher. But in order to accelerate the progreſs, troughs are ſet before them, which are conſtantly filled with ground beans, oats, &c. as likewiſe with oil-cake reduced into ſmall pieces. This latter ſubſtance, though apparently not calculated to pleaſe the palate of a graminivorous animal, eſpecially ſo nice a feeder as a bullock, is coveted by them with ſuch avidity, that, after they have been a few weeks accuſtomed to the taſte of it, they quit any other provender to feaſt on this diet, ſo that a very ſmall portion of hay will be required when the beaſts begin to feed heartily on the cake. But it is to be obſerved that water is of the utmoſt conſequence, and therefore ſhould be liberally given them during the time that they are feeding on the cake, at which time they require a more copious ſupply of liquid than when they are confined to any other diet. Thus provided with a due ſupply of hay, oil-cake, and water, the beaſts make a quick progreſs in their fattening, and if in pretty good heart when ſhut up, will be ready for the butcher at the time when beef is moſt likely to advance in price in the markets.

It is neceſſary to remark, that in the feeding of bullocks either on hay, corn, oil-cake, or a mixture of each, their feeds ſhould be given them frequently and in ſmall proportions at a time, for, if the fattening beaſts are ſuffered to blow on any part of their food, they can never more be brought to eat of the ſame again, until compelled by hunger, a ſenſation which they ought never to be allowed to feel. This ſhews the great neceſſity of a conſtant attendance on theſe animals, in order that their food may be given in due proportions, their water often changed, and their litter ſtill kept freſh and clean under them, for of all brute animals, a bullock is the moſt dainty in the choice of his food; whence, Mr. Banniſter ſuppoſes, "he has probably obtained the appellation of *neat*, a term perpetually uſed to diſcriminate theſe cattle."

It is ſtated by the ſame writer that "when fed with oil-cake, each beaſt will require eight cakes per day, which are to be broken into pieces, of which one cake will form about four. Many people divide the cake by means of a large mortar and weighty peſtle; but there is a far eaſier and more expeditious method of performing this work, which is, by holding the cake for a few minutes before the fire, which renders it, from a very hard ſubſtance, pliable and tender, ſo that it may be broken with the utmoſt facility between the fingers to any ſize that may be thought neceſſary, though it will be prudent not to break any more at one time than may be ſuppoſed wanting for the expenditure of the current day, that the beaſts may enjoy their provender every day freſh out of the loft. And here a hint is offered in reſpect to preſerving the cake, which is, that it be laid in a dry, clean loft, where it may be kept free from any extraneous mixture, but to be particularly careful that neither wet nor dampneſs be admitted to come in contact with it, which would certainly occaſion it to be mouldy, and render it totally unfit for uſe: this caution ſeems the more neceſſary, as the cakes are generally purchaſed in the ſummer months, when the price is at the loweſt, and kept for half a year or longer before they are uſed, in which time it is evident that either a drip in the thatch or tiling, or a dampneſs in the walls, or the flooring of the ſhed or warehouſe wherein they are ſtowed, may bring no ſmall detriment to the cakes; and thus the owner ſuffers a heavy loſs in the firſt expence, and is utterly diſappointed in his future views." Moreover "when bullocks are fattened on turnips and hay, they require only a ſmall allowance of water, as the moiſture of the turnips in a great meaſure ſupplies the place of other liquid. They may either be turned into the field, and fed with a daily portion, by dividing the cloſe with hurdles in like manner as is practiſed for ſheep, or the turnips may be brought home and given to them in a yard, or other incloſure; or, laſtly, the beaſt may be tied up in ſtalls, as was directed for the cake-fed bullocks. Of theſe three methods, the laſt ſeems to be the moſt eligible, as by this means the beaſt will lie much more at his eaſe, and having his eyes detached from every object but his food will fatten more kindly, and with greater expedition, than when ſuffered to enjoy a wider range, The ſecond method of bringing the turnips into a yard, and ſuffering the beaſts to eat them there, is much preferable to that of penning the bullocks in the field, where they will probably not ſeldom make their way into the ſtanding turnips, and be expoſed to the inclemency of the weather; from both which circumſtances much time will be loſt in their fattening. Beſides, they will be leſs under the inſpection of the owner, and therefore liable to various accidents, which might either be prevented or remedied when the other method of feeding is purſued. The dung, likewiſe, will be totally loſt when the bullocks are fed in the field; and this is a matter of great importance to a farmer, and the valuable addition which the muck from the ox ſtalls makes to the contents of the yard, being replete with the dung and ſtale of the beaſts, may well compenſate for the extra-attendance required on this occaſion."

Turnips for fattening bullocks ſhould be of the largeſt ſize, and, when brought out of the field into the yard, be diveſted of their tops, and of the dirt which adheres to them. The tops and ſmall turnips may be thrown to the cows and lean beaſts, and the large roots, after having been thus cleanſed, be divided into three or four pieces, and flung into the trough before the fatting beaſts, obſerving not to give too large a quantity at one time ; and if any of the laſt ſerving ſhould caſually remain in the troughs when the baiting time comes round, theſe muſt be removed for a freſh ſupply. The hay too, which is allowed to theſe beaſts, either when fed with turnips, or on oil-cake, ſhould be the ſweeteſt that can be got, and be apportioned out to them in ſmall quantities. Turnips are more palatable, and likewiſe more nutritious, when given to the beaſts drawn freſh out of the field ; but to guard againſt the contingency of a froſt, or of inceſſant rains, the firſt of which would render this buſineſs impracticable, and the other inconvenient ; it ſeems a very judicious method to provide a ſtock of turnips in dry open weather, that they may be in readineſs at thoſe times when they cannot be procured freſh carted out of the field. Theſe when diveſted of their leaves and top roots, and cleanſed from dirt, may be piled up in a covered ſhed, where no moiſture can penetrate, and in this manner, maintain their goodneſs for ſome length of time.

When bullocks are at firſt ſhut up to fatten on turnips, care ſhould be taken that this food be given in moderation, and with a proper allowance of hay ; otherwiſe, the ſweetneſs of the turnip may tempt the beaſt to feed ſo voraciouſly, as to occaſion too great a fullneſs in the maw, which is called *hoving*, or *blowing*, an accident which frequently happens to ruminant animals, when taken from dry meat or natural graſs to turnips, clover, or other ſucculent ſorts of food. See HOVEN.

Sometimes accidents happen to bullocks, when feeding on turnips, from pieces ſlipping into the throat and ſticking there. To prevent ſuffocation, which would frequently be the conſequence in ſuch caſes, the outſide of the gullet ſhould be rubbed down with a ſtick in order to force the piece down into the ſtomach ; or ſhould that fail, a turned ſtick, or piece of cane formed ſo as to make a kind of probang may be introduced into the throat, and the turnip by that means be removed. See STALL-FEEDING.

By ſome, the black, red, and brindled bullocks are conſidered as moſt hardy, and better diſpoſed to fatten than thoſe of other colours. See CATTLE and LIVE STOCK.

BULLOCK's *eye*, in *Architecture*. See EYE.

BULLOCK-*ſheds*, in *Rural Economy*, the houſes in which bullocks are kept while feeding. In the conſtruction of theſe buildings, attention ſhould always be had to their being well aired, to the facility of feeding and cleaning the animals in them, and to their being kept dry and clean by their having ſuitable drains and conveniences for urine and dung. In the rural economy of Norfolk, Mr. Marſhall remarks, that a bullock-houſe there, conſiſts of a centre building, thirty-ſix feet long, nineteen feet wide, and about eleven feet high to the eaves, with a pair of wide folding doors at each end, and a lean-to on each ſide, the whole length of the building, and eleven feet wide. The centre building is the turnip-houſe ; the lean-toes, ſheds for the bullocks, which ſtand with their heads toward, or rather in the turnip-houſe, from which they are parted by a range of mangers only ; having the full freedom of breathing in its ſpacious area. By opening the doors at each end, a ſufficient degree of air and coolneſs may be given in cloſe weather, while, behind, the eaves of the ſheds are brought down to within five feet of the ground, and are boarded with rough boards, except an opening at each end for the bullocks to creep in at, to prevent too great a coldneſs in ſevere weather, thus preſerving a due temperature. The ſhed of theſe dimenſions, thus conſtructed, holds twenty bullocks, ten on each ſide, faſtened by the neck, with chains, ſwivels, and rings playing freely upon poſts ſeven feet high. At each corner of the turnip-houſe, is a triangular bin for containing the topped and tailed turnips, or other proviſions.

In autumn, it is farther obſerved, the entire building is ſometimes uſed as a temporary barn for buck-wheat, peas, &c. and in ſummer the centre part is an excellent waggon-ſhed : had the doors been made a foot and a half higher, it is ſuggeſted that it would have been an admirable refuge for loads of corn or hay in a ſhowery harveſt. The main building is covered with reed, the lean-toes with tiles. And in the rural economy of Glouceſterſhire, the ſame writer remarks, that each bullock has a houſe and a yard to himſelf, in which he goes looſe, occupying them by turns, as appetite or amuſement directs him, having a manger and a drinking trough to go to at pleaſure ; of courſe, he eats when he is hungry, and drinks when he is thirſty. He is alſo at liberty to rub or to lick himſelf, as well as to keep his body in a proper degree of temperature as to heat and cold. Theory, ſays Mr. Marſhall, could not readily ſuggeſt more rational principles.

The conſtruction of theſe, however, varies in the minutiæ. The water trough, for inſtance, is ſometimes placed by the manger in the oval or ſhed, ſometimes in the open pen. Others leſs noticeable variations may likewiſe be ſeen in different buildings. But the plan and dimenſions, which at preſent ſeem to ſtand higheſt in eſteem, and on which ſeveral erections of this nature have been made within the laſt fifteen or twenty years, are the following : The building fifteen to fifteen feet and a half wide within, and of a length proportioned to the number of ſtalls required : the height of the plates five feet to ſix feet four inches, ſupported on the ſide to the north or eaſt by cloſe walling : on that to the ſouth or weſt by poſts, ſet on ſtone pedeſtals : the gables walling : the covering plain tiles on a ſingle pitch-roof : againſt the back wall is a gang way, three and a half to four feet wide, formed by a length of mangers, three feet to three and a half feet wide, from out to out, at the top narrowing to about fifteen inches within at the bottom ; the perpendicular depth fourteen or fifteen inches ; the heighth of the top rail from the ground, about two feet nine inches : the materials two inch plank, ſtayed and ſupported by poſts and croſs pieces, and ſtiffened by ſtrong top-rails : the dimenſions of the area of the covered ſtalls, about eight feet three inches ſquare ; of the open pens the ſame. The partitions between the ſtalls are of broad nails, paſſing from the outer pillars to ſimilar poſts, riſing on the inner or ſtall ſide of the manger, and ſteadied at the top by ſlender beams, reaching acroſs the building, each ſtall, or each partition, having a beam and a pair of principals. The partitions of the pens are gates, reaching from the pillars to the boundary wall ; and likewiſe from pillar to pillar. When they are fixed in that ſituation, each bullock has his ſtall and his little yard. When in this, each is ſhut up in his ſtall, the yards form a lane, or driftway, for taking in or turning out any individual. The boundary wall of the pens is about four feet high, coped with blocks of copper-droſs. On the outer ſide of it is a receptacle of manure ; on the inner, a range of water troughs, with a channel of communication for the conveniency of filling them. The materials of the troughs, are ſtone ; of the channel, gutter-bricks, covered with ſlabs. Theſe ſtone troughs, which are about fourteen inches by two feet ſix inches within, have a conveniency in their conſtruction, which is entitled to notice ; inſtead of the ſides and ends being all of them peeked down to an angle, ſquare with the bottom, one of the ends is left bevelling, ſloping, making a very obtuſe angle with the bottom. This ſimple variation renders them eaſy to be cleaned, either with the ſhovel or the broom.

The floor is paved with hard burnt bricks, laid edgewiſe in mortar, being formed with a ſteep deſcent from the wall to a channel, from three to four feet from it, and with a gentle fall from the manger to the ſame channel, which becomes the general drain for rain water and urine. At one end of the pens is a pump (where a natural rill cannot be had) for ſupplying the troughs of water; and, at the other, a ſtack of ſtubble for litter, which is uſed in the ſtall only, the yard being left unlittered. At one end of the building is a cake-houſe, at the other the rick-yard; with a door at each end of the gang-way to receive the hay and the cake.

In ſome inſtances, he has ſeen a double range of ſtalls on this plan, the area between them being the common receptacle for the dung. When a number of ſtalls, as twenty or thirty, are required, their arrangement brings them within a convenient compaſs, and the two ranges, with a proper aſpect, become ſhelter to each other. Beſide theſe looſe ſtalls, there are others built nearly on the ſame plan, but without gates, and on a ſomewhat ſmaller ſcale, in which the cattle are faſtened to the manger or the partition poſts, with a long chain, which gives them liberty to rub and lick themſelves, and move about in their ſtalls. In this caſe, a water-trough is generally placed at the end of every ſecond partition, level with the manger, with a general pipe of communication to fill them, each trough ſupplying two bullocks. This plan, he obſerves, leſſons the expence in ſome degree, and prevents the bullocks from fouling their mangers. In the Cotſwold hills, he remarks, that each bullock has different troughs, a ſmall one for corn, a larger one for hay, with a water-trough, which runs the whole length of the ſhed, and is covered by a board, each bullock having a hole to drink at. There are various other conſtructions of ſheds for this uſe, which will be more particularly deſcribed under their proper heads. See CATTLE-SHEDS, and FEEDING-HOUSES.

BULLOCK-*ſtalls*, the parts that are partitioned off in the ſheds, in which the bullocks ſtand to eat their food. They ſhould always be made ſufficiently roomy. See CATTLE-SHEDS.

BULLOCK, in *Geography*, a county of the ſtate of Georgia in America, divided into four towns, and containing 1913 inhabitants, of whom 269 are ſlaves.

BULLOCK'S *point* and *neck*, lie on the eaſtern ſide of Providence river, in the ſtate of Rhode iſland.

BULLS, *bay of*, lies on the north of Cadiz in Spain, within Rota point, and affords a fine ſhelter from the N. W. to the N. E. winds; about N. N. W. from Cadiz-bay.

BULLS, *bay of*, or *Baboul* bay, a noted bay on the eaſt coaſt of Newfoundland iſland, about ſix leagues to the ſouth of St. John's harbour. It has 14 fathoms of water, and is very ſafe, being land-locked. The only danger depends upon a rock, 20 yards from Bread-and-Cheeſe point, and another with nine feet water off Magotty cove. N. lat. 50° 50′. W. long. 57° 10′.—Another bay of the ſame name lies on the weſt ſide of Trinity bay, running ſo far weſt, that it is ſcarcely three miles over land from the head or bottom of it to the bay of Placentia.

BULLSKIN, a townſhip of Fayette county, in Pennſylvania, containing 981 inhabitants.

BULLULLOS, a town of Spain, in Andaluſia, four leagues from Lucena.

BULLY, a town of France, in the department of the Lower Seine; ſix leagues N. of Rouen.

BULLY-*tree*, in *Botany*. See ACHRAS and BUMELIA.

BULMAN, in *Geography*, a rock or ſhoal on the ſouth coaſt of Ireland, on which there is never leſs water than four feet. It lies near Hangman's point on the eaſt ſide of the entry into Kinſale harbour, and muſt be carefully guarded againſt by thoſe who enter that port. N. lat. 51° 40′. W. long. 8° 28′.

BULM MONOU, a county of Africa, on the coaſt of Guinea.

BULONGA *iſland*, lies off the mouth of Aracan river, on the eaſt ſide of the bay of Bengal.

BULSEDI, a town of Arabia, in the county of Yemen, 22 miles S. E. of Loheia.

BULTEAU, LEWIS, in *Biography*, a learned and pious French author, was born at Rouen in 1615, and ſucceeded his uncle, as king's ſecretary, which office he occupied for 14 years, till he withdrew from it to ſtudy and religious retreat. Having entered as a lay-brother among the Benedictines of St. Maur, he paſſed the remainder of his days at the abbey of St. Germain des Prez, near Paris. His principal works were "An Eſſay on the monaſtic Hiſtory of the Eaſt," 1680, 8vo. deſcribing the manners, &c. of the Cænobites, and proving that monaſtic inſtitutions are not ſo modern as has been ſuppoſed. "Abridgment of the Hiſtory of the Order of St. Benedict, as far as the tenth century, 1684," 2 vols. 4to. "Tranſlation of the Dialogues of Gregory the Great," with Notes, 1689, 12mo. His modeſty would not allow his annexing his name to his works; his ſtyle was formed on the model of the writers of the Port Royal; and his knowledge of languages was very extenſive. He died of an apoplexy in 1693. Nouv. Dict. Hiſt.

BULTEL, derived from the barbarous Latin *bultellus*, or *bultellum*, a ſearce, or boulter, denotes the bran or refuſe of meal after dreſſing.

BULTEL alſo denotes a bag wherein meal is dreſſed, called alſo a *bulter*, or rather *boulter*. See BOLTERS.

BULTER-*cloth*. See BOLTING-*cloth*.

BULTERS, are ſtrong lines, five hundred feet long, with ſixty hooks, eight feet aſunder, and baited with pilchards or mackarel, which are uſed on the coaſt of Cornwall in the fiſhery of congers. They are ſunk to the ground by a ſtone faſtened to them; and ſometimes ſuch a number of theſe are tied together as to reach a mile.

BULWARK, *Propugnaculum*, in the *Ancient Fortification*, amounts to much the ſame with baſtion in the modern. See BASTION, and alſo RAMPART.

BULWER, JOHN, in *Biography*. This writer, who lived in London, and was in repute in his time for his ſkill in teaching deaf and dumb perſons, and others, to communicate their thoughts, by motions of their fingers and hands, is now only known by his works, which are ſufficiently ſingular to merit attention: viz. "Chirologia, or the Natural Language of the Hand; as alſo Chironomia, or the Art of Manual Rhetorick," London, 1644, 8vo. Rabelais gives an account of a curious conteſt of this kind, where the diſputants, without ſpeaking, communicated their opinions by motions of the hands and fingers. The art is not entirely loſt, but is now principally practiſed as an amuſement by young people at ſchools. "Pathomyototomia, or the ſignificant Muſcles of the Paſſions of the Mind, and Diſſection of the Muſcles of the Affections," London, 1649, 8vo. He deſcribes the muſcles of the head, and denominates them from the expreſſion in the countenance, occaſioned by their contractions, as love, fear, rage, &c. "Man transformed, or the Artificial Changeling, ſhewing the ſeveral Ways how divers People alter the Natural Shape of ſome Parts of their Bodies," 1653, 4to. Joſeph Clark, the famous poſture-maſter, was a remarkable inſtance of a man poſſeſſing this power. He made himſelf tall or ſhort, fat or lean, deformed or ſtraight, at his diſcretion. He had alſo an equal power in altering his countenance, ſo as to be unknown to his moſt intimate acquaintance. Haller. Bib. Anat.

BULZIG, in *Geography*, a town of Germany, in the electorate of Saxony, 2 miles S. of Zahna.

BUM-*bailiffs*, or *Bound-bailiffs*. See Bailiffs of *Sheriffs*.

Bum-*boat*, in *Sea Language*. See Boat.

BUMALDA, in *Botany*, Thunb. nov. gen. p. 63. Flor. Jap. 8. Schreb. 453. Willd. 515. Juſſ. 381. Claſs and ord. *pentandria digynia*. Nat. ord. *rhamni*, Juſſ. Gen. Char. *Cal.* perianth deeply divided into five ovate, obtuſe, concave ſegments, a little ſhorter than the corolla. *Cor.* petals five, oblong, inſerted on the germ. *Stam.* five, thread-ſhaped, erect, rough with hairs, inſerted into the claws of the petals, nearly the length of the corolla; anthers inſerted into the back, ovate, twin. *Piſt.* germ conic, villous, ſuperior; ſtyles two, erect, villous, the length of the filaments; ſtigmas ſimple, headed, truncate. *Capſule* not ſeen by Thunberg in a ſtate of maturity, but ſuppoſed by him to be two-celled and two-beaked.

Sp. B. *trifolia*. A ſmall denſe ſhrub, ſmooth in all its parts. *Branches* cylindrical or obtuſely angular, jointed, purple. *Branchlets* oppoſite, leafy, thread-ſhaped, much ſpreading, in other reſpects ſimilar to the branches. *Leaves* oppoſite, petioled. *Leaflets* ovate, acuminated, finely ſerrated, pale underneath; on ſhort capillary, ſpreading or reflected petioles. *Racemes* terminal. Native of Japan.

BUMBUNNY, a name given by the people of Guinea to a plant common in that place, which ſerves them as an emetic; they boil a few of the leaves in water, and drink this liquor, which works very eaſily. Phil. Tranſ. N° 232.

BUMELIA, (βουμελια, the name of a tree in Theophraſtus and Pliny). Swartz. Prod. 49. Schreb. Ap. 1736. Willd. 401. Claſs and ord. *pentandria monogynia*.

Gen. Ch. *Cal.* perianth five-leaved; leaves roundiſh-ovate, incumbent, concave. *Cor.* one-petalled, five-cleft or five-parted; tube very ſhort, round; border five-parted; ſegments ovate, entire, ſpreading, concave, with two little ſcales at the baſe of each; nectary with five leaves, ſmaller than the ſegments of the corolla, at the baſe of the filaments, ſurrounding the germ, acute. *Stam.* filaments five, the length of the tube, inſerted into its bottom between its lower ſegments; anthers ovate, erect. *Piſt.* germ ſuperior, ovate; ſtyle thick, erect, ſhorter than the ſtamens; ſtigma obtuſe. *Drupe* oval; kernel ſingle, oblong, ſmooth, with a lateral ſcar.

Eſſ. Char. *Corolla* five-cleft; *nectary* five-leaved; *drupe* one-ſeeded.

La Marck ſays, that all Swartz's ſpecies ſhould be referred to Sideroxylum, which he deſcribes in his "Illuſtrations" as ſubmonoſpermous, or as he expreſſes it in the alphabetical part, having from one to five ſeeds. Bumelia, as a ſeparate genus, differs from Sideroxylum only in the number of ſeeds. Willdenow enumerates the following twelve ſpecies, all natives of America.

1. B. *nigra*, baſtard bully-tree. Swartz. (Achras 6. Browne Jam.) "Leaves terminating, oblong-lanceolate, ſmooth, waved about the margin; branches ſpreading; branchlets wandlike, flower-bearing." A tree. Fruit ſmall, ſmooth, ſcattered on the branchlets; ſeeds roundiſh with a very ſmall ovate ſcar. A native of Jamaica. 2. B. *pallida*. Swartz. "Leaves terminating, elliptic, obtuſe; peduncles crowded, lateral; branches erect." It reſembles B. nigra, but is a ſmaller tree, with whitiſh bark, having branches leſs ſpreading, with larger flowers and drupes. Swartz. A native of Jamaica. 3. B. *tenax*. Willd. (Sideroxylon tenax. Linn. Ment. Chryſophyllum carolinenſe Jacq.) "Leaves obovate, obtuſe, ſilvery tomentous underneath; peduncles axillary, crowded." A tree 20 feet high, with a whitiſh bark, and very tenacious branches. *Germs* alternate, each producing numerous one-flowered peduncles, about an inch long. *Leaves* five or ſix, below or among the peduncles, petioled, very entire, deciduous. *Flowers* ſmall. *Calyx* ovate; leaflets five, ovate, obtuſe, the outer ones broader, converging. *Corolla* tube the length of the calyx; border five-parted; ſegments ovate, ſhorter than the calyx; nectary in the throat of the corolla, five parted; ſegments with three clefts, the middle one generally the longeſt. *Stamens* the length of the corolla. *Piſt.* germ pentagonal; ſtyle and ſtigma ſimple. *Drupe* oval; kernel ovate, ſhining, with two apertures at the baſe, ſeparated by a bowed partition. It varies with very ſhort ſpines, thinly ſcattered on the branchlets. Linn. Obſerved by Dr. Garden in the dryer parts of Carolina. 4. B. *retuſa*, mountain baſtard bully-tree. Swartz. (Achras 7. Brown. Jam.) "Leaves wedge-ovate, obtuſe, rigid; peduncles crowded, axillary." Native of Jamaica. 5. B. *fœtidiſſima*. Willd. (Sideroxylon fœtidiſſimum Linn. Mant.) "Leaves lanceolate-oblong, obtuſe, a little emarginate; peduncles crowded, axillary. A ſhrub, 12 feet high. *Leaves* rather alternate, ſhining. *Peduncles* one-flowered, numerous. A native of St. Domingo. 6. B. *ſalicifolia*, Swartz. (Achras ſalicifolia, Linn. Sp. Pl. under which name it has already been given in this work. La Marck refers his Sideroxylum ſalicifolium to the Achras ſalicifolium of Linnæus with a mark of doubt. Willdenow gives, as a ſynonym to the preſent plant, Jacquin's Sideroxylon muſtichodendrum, which La Marck has inſerted in his Illuſtrations, but not in the Dictionary under the ſame name.) "Leaves lanceolate, ovate, acuminate; peduncles crowded, axillary and lateral." Native of Jamaica and the Bahama iſlands. 7. B. *manglillo*, Willd. (Sideroxylon manglillo La Marck Encyc. Chryſophyllum manglillo La Marck Illuſt. Duhamelia manglillo Domb. Peruv. Manglilla Juſſ. 151.) "Leaves oblong, obtuſe, ſmooth, whitiſh beneath; flowers axillary and lateral, aggregate, with ſhort peduncles." An evergreen ſhrub, 10 or 12 feet high. *Leaves* alternate, very entire. *Flowers* ſmall, white, in numerous ſmall faſcicles, either in the axils of the leaves, or ſcattered below the leafy part of the branches. *Peduncles* ſhort. *Style* none. Fruit about the ſize of a ſmall grain of pepper. Obſerved by Dombey in the neighbourhood of Lima. 8. B. *montana*. Swartz. "Leaves oblong, obtuſe; peduncles long, axillary, diſtinct." Native of Jamaica. 9. B. *nervoſa*. Willd. (Chryſophyllum macrophyllum Lam. Illuſt. C. cainito Aub. guin.) "Leaves alternate oval, of a different colour beneath; flowers aggregate, lateral, and axillary, tomentous, peduncled." Native of Cayenne. 10. B. *pentagona* Swartz. "Leaves lanceolate, acuminate, ſhining; peduncles axillary; drupes pentagonal." Native of the Weſt Indies. 11. B. *rotundifolia*. Swartz. "Leaves roundiſh, margined, veined, leathery, ſmooth on both ſides." Native of Jamaica. 12. B. *cuneata*. "Leaves wedge-obovate." Native of Jamaica. Fruit of this and the preceding uuknown.

BUMICILLI, a ſect of Mahometans in Africa, ſaid to be great ſorcerers: they fight againſt the devil as they ſay; and frequently run about covered with blood and bruiſes, in a great fright: they ſometimes counterfeit combats with him at noon-day, and in the preſence of numbers of people, for the ſpace of two or three hours, with darts, javelins, ſcimitars, &c. laying deſperately about them, till they fall down on the ground oppreſſed with blows; after reſting a moment, they recover their ſpirits, and walk off. What their rule is, is not well known; but they are ſaid to be an order of religious.

BUMPKIN, or Boomkin, in *Sea Language*, a ſhort boom or bar of timber, projecting from each bow of a ſhip, to extend one edge of the foreſail to windward; for which purpoſe there is a large block fixed to its outer end, through which the rope is paſſed that is faſtened to the lower corner of the ſail to windward, called the *tack;* and this being drawn tight down brings the corner of the ſail cloſe to the block, which being performed, the tack is ſaid to be *aboard*. The bumpkin is ſecured by a ſtrong rope, which confines it downward to the ſhip's bow, to connteract the ſtrain it bears from the foreſail above dragging it upwards.

BUN, the dry ſtalk of hemp, ſtripped of its rind.

BUNCH, a cluſter or aſſemblage of certain things, as of grapes.

Bunch alſo denotes a tumor, or protuberance, natural or preternatural, either on an animal or a vegetable body.—The bunch growing about the graft of a plant is a ſort of *callus* formed by the extravaſated ſap.

Bunch *of Camels*. See Camels.

Bunch, in *Surgery*, denotes an elevation of the back, ariſing from an exterior luxation of the *vertebræ* thereof. The cure is begun by keeping emollients a long time on the *vertebræ*, whereby to looſen the ligaments, and finiſhed by wearing an iron boddice, which compreſſing the *vertebræ*, by degrees drive them back to their natural ſituation.

Bunches in horſes, called alſo *knobs*, *warts*, and *wens*, are diſeaſes ariſing from foul meat, bruiſes, hard labour, or the like; whereby the blood becoming putrefied and foul, occaſions ſuch excreſcences.

BUNCHED *cods*, among *Floriſts*, are thoſe which ſtand out, and wherein the ſeed is lodged.

Bunched *roots*, thoſe round roots which have knobs or knots in them. See Bulb and Root.

BUNCRANA, in *Geography*, a ſmall poſt town of the county of Donegal, Ireland, ſituated on Lough Swilly, in the peninſula of Iniſhowen. It is 12 miles N.W. of Londonderry, and 124 N.W. of Dublin.

BUNCOMB, the largeſt and moſt weſtern county of North Carolina, and ſuppoſed to be the moſt mountainous in the United States. It lies in Morgan diſtrict, and is bounded W. by the ſtate of Tenneſſee, and S. by that of South Carolina. The Blue ridge paſſes through this county, and gives riſe to many large rivers, as Catabaw, Wateree, Broad river, and Pacolet. It abounds with iron ore. The number of inhabitants is 5774, of whom 334 are ſlaves.

BUNDAMIR, a central river of Perſia, which paſſes between Schiraz and Iſtakar, or the celebrated ruins of Perſepolis, and is ſuppoſed to be the ancient Araxes, which ſee. This famous river flows into a ſalt lake called Baktagan. Between this river and the Kuren, a branch of the mountains of Elwend extends S.E. See Elwend.

BÜNDE, a town of Germany, in the circle of Weſtphalia, county of Ravenſberg and prefecturate of Limberg. At this place a conſiderable trade is carried on in yarn and coarſe linen, and near it is a medicinal ſpring, diſcovered in 1748.

BUNDEH, a ridge of mountains in Hindooſtan, which runs parallel to the Godavery river on the ſouth, but at a conſiderable diſtance from it.

BUNDELA, or Bundelcund, a territory of Hindooſtan, lying on the ſouth-weſt ſide of the Jumnah, and ſeparated from it by a narrow tract of low country. It is inhabited by a tribe of Rajpoots, who are deemed inferior to their brethren of Agimere. Bundelcund is ſurrounded by the dominions of Oude, Benares, and the Mahrattas, and was formerly ſubject to a rajah named Hindooput; but it is now chiefly divided among his ſons, or their deſcendants. It is a mountainous tract of more than 100 miles ſquare, and contains the celebrated diamond mines of Punna or Purna (probably the Panaſſa of Ptolemy), together with ſome ſtrong fortreſſes, the principal of which is Callinger. It is ſubject to the depredations of the Mahrattas, and has of late years been attempted by Madajee Sindia, who failing to make himſelf maſter of the principal fortreſſes, abandoned the open country. The ancient limits of Bundelcund were much more extenſive than the preſent; extending much further towards the Nerbuddah river. Chatterpour is reckoned the capital. Where the ſoil is not ſtrong, it produces all ſorts of fruits, but neither rice nor ſugar. Cotton trees are abundant, and a ſpecies of tree from which is gathered a black nut.

The territories of Adjidſing are contiguous to Bundelcund, on the weſt; to the Mahrattas, on the ſouth and ſouthweſt; and to the Benares territory, on the eaſt. Their whole extent, including ſome tributary Zemindars on the ſouth-eaſt, may be about equal to Bundelcund; and like that, ſubject to the occaſional depredations of the Mahrattas. Its capital is Rewah or Rooah, which ſee. Rennell's Mem. Introd.

BUNDERKOLE, a town of Hindooſtan, in the diſtrict of Kiſhtewar, ſeated between the two branches that form the Chunaub river, near the foot of the Imaus or Himmaleh mountains. N. lat. 33° 40′. E. long. 74° 58′.

BUNDLE, a collection of things wrapped up and bound together. A bundle of paper conſiſts of 40 quires; a bundle of Hamburgh yarn contains 20 ſkeins; and of baſket rods, the band is 3 feet.

BUNDLES, in *Law*, denote a ſort of records of the chancery, lying in the office of the Rolls, in which are contained the files of bills and anſwers; of *hab. cor. cum cauſâ; certioraris;* attachments, &c.; *ſcire facias's;* certificates of ſtatute ſtaple; extents and liberates; *ſuperſedeas's;* bails on ſpecial pardons; bills from the Exchequer of the names of ſheriffs; letters patent ſurrendered; and deeds cancelled; inquiſitions; privy-ſeals for grants; bills ſigned by the king; warrants of eſcheators; cuſtomers, &c.

BUNDURAL, in *Geography*, a diſtrict of Hindooſtan, adjoining to the Imaus or Himmaleh mountains, in N. lat. about 33° and E. long. about 75° 30′.

BUNEL, Peter, in *Biography*, an elegant ſcholar of diſtinguiſhed eminence, was born at Toulouſe in 1499, and educated at Paris. Unable to procure a ſubſiſtence at home, he went to Padua, and afterwards to Venice, where he was entertained in the houſe of Lazarus du Baif, the French ambaſſador, and where he ſtudied the Greek and Hebrew languages; of Latin he was before ſo complete a maſter, that he wrote it with ſuch purity as to have been deemed the founder of the Ciceronian ſect which prevailed ſo much among the Italian ſcholars. With George de Selve, biſhop of Lavaur, who ſucceeded du Baif at Venice, he retired to Lavaur, and upon his death, returned to Toulouſe, where he was reſcued from indigence, and patronized by Meſſrs. de Faur. He accompanied the ſon of one of theſe in the capacity of tutor on a tour to Italy, and at Turin, was carried off by a fever in his 47th year. His reputation for literary taſte and for a philoſophical contentment of mind was eminently diſtinguiſhed. In early life he ſeems to have incurred the ſuſpicion of hereſy, by manifeſting an inclination to the opinions of the reformers; but he was rejected by Calvin, becauſe he ſeemed to have had too favourable ſentiments of the Pelagian doctrines. A collection of his Latin letters, written with peculiar purity of ſtyle, and containing much curious matter, was printed by Stephens in 1551, and afterwards reprinted at Toulouſe. The capitouls of Toulouſe have placed his buſt in their town-hall among other ornaments of their city. Gen. Dict.

Bunel, Jacop, a painter of hiſtory, was born at Blois in 1558, and became the diſciple of Frederick Zucchero. He was in high reputation as a painter both at Rome and at Paris; and in the church of the Auguſtines, in the latter city, he painted a "Deſcent of the Holy Ghoſt," which was preferred by that excellent judge, Nicolo Pouſſin, to all the paintings in that city. Pilkington.

BUNG, the ſtopple of a caſk, barrel, or the like.

The bung is a wooden plug, ſerving to ſtop the hole left in the top of a veſſel to be filled by. It anſwers to what, among the ancients, was called *epiſtomium*, and in the middle age *ſigillus*, *the ſeal of a veſſel*, becauſe in thoſe days it was uſually ſealed.

After tunning new wine, or cyder, the bung is uſually left open for ſome time, that when the liquor comes to work, there may be vent for the froth or ſcum, and that the hoops may not be in danger of being burſt by the violence of the fermentation. Yet, in ſome caſes, they leave wines to ferment, without giving them vent by the bung, in order to render them more briſk and ſpirituous: in which caſe, it is neceſſary the veſſel be hooped with iron, and other precautions taken that the bung may not fly.

BUNGAY, in *Geography*, a town of Suffolk, England, is built on the banks of the river Waveney, which divides this county from Norfolk, and is navigable for barges from Yarmouth on the coaſt. This place is memorable for a dreadful fire which, in 1688, conſumed nearly the whole of the town, and deſtroyed property to the amount of 29,896l. The town, however, revived after this deplorable event, and its houſes, &c. were re-erected in an improved and more convenient ſtyle. The town conſiſts of two pariſhes, and has two handſome churches. That, dedicated to St. Mary, is a large ſtructure, with a lofty ſteeple. Between the two churches are the ruins of a Benedictine nunnery, which was founded in the time of Henry II. Here are alſo the remains of a very ſtrong caſtle, which appears to have been built by the Bygods, earls of Norfolk. In the time of the barons' wars, this place was ſtrongly fortified by Hugh Bygod, who is ſaid to have publicly defied the king, but he was obliged to compound with Henry II., by a ſum of money, and hoſtages, to ſave it from a ſiege, and demolition by that monarch. The earl afterwards eſpouſed the cauſe of Richard, Henry's ſon, againſt his father; when the king ſeized this, and the caſtle of Framlingham. The caſtle was demoliſhed in the reign of Henry III., but in the 10th of Edward the firſt Roger Bygod obtained a licence to embattle his manſion which was built on the ſite of the caſtle.

The inhabitants of Bungay have the privilege of a very extenſive common in the vicinity of the town. Here are a weekly market on Thurſday, and two fairs annually. It is 106 miles N.E. of London, and contains 187 houſes, and 903 inhabitants in Trinity pariſh, and 305 houſes, with 1446 inhabitants, belonging to that of St. Mary.

BUNGO. See Bongo.

Bungo, a province of Africa, in the kingdom of Loango.

BUNGURY, a town of Hindooſtan in Lahore, ſeated near the river Rauvee. N. lat. 32° 30′. E. long. 74° 58′.

BUNGUSH, a diſtrict of Cabul, ſituate to the ſouth of the Cow river and eaſt of the Sindé, terminating on both. N. lat. about 33°, and E. long. about 70°.

BUNIALU, a town of Aſiatic Turkey, in the province of Natolia; 28 miles W. of Caſtamoni.

BUNIAS, in *Botany*, (the name of a plant with a root like a turnip, in Dioſcorides and Pliny, from *βουνος*, a hill), Linn. gen. 523. Schreb. 1070. Willd. 1217. Juſſ. 241. Vent. vol. iii. p. 114. Gært. 828. Claſs and order, *tetradynamia ſiliculoſa*, Schreb. Willd. and Smith. *Siliquoſa*, Linn. Nat. Ord. *Siliquoſæ*, Linn. *Cruciferæ*, Juſſ. and Vent.

Gen. Char. *Cal.* perianth four-leaved; leaves ovate-oblong, ſpreading, deciduous. *Cor.* four-petalled, cruciform; petals obovate; claws attenuated, erect. *Stam.* ſix, the length of the calyx, two oppoſite ones a little ſhorter than the others; anthers erect, bifid at the baſe. *Piſt.* germ oblong; ſtigma obtuſe. *Silicle* irregular, ovate-oblong, ſomewhat four-ſided, not opening, deciduous.

Eſſ. Char. *Silicle* deciduous, four-ſided, with unequal acute angles, not opening. Dr. Smith.

Spec. 1. B. *cornuta*, Linn. (Myagrum cornutum, Lam. Pugionium cornutum, Gært. Willd. and Vent.) "Silicles with two ſpreading horns, ſpinous at the baſe." Linn. *Leaves* tongue-ſhaped, very entire, glaucous, without veins, half embracing the ſtem. *Racemes* terminal; very looſe in a ſtate of maturity, with wide-ſpreading peduncles. *Flowers* ſmall, not larger than thoſe of Draba verna. *Petals* narrow, very entire, acuminate, white, a little longer than the calyx. *Germ* ſomewhat hiſpid, two-celled. *Silicle* membranous, lenticularly-compreſſed, tranſverſely oval; furniſhed at each extremity with a long, compreſſed, ſword-ſhaped proceſs, producing the appearance of two wide-ſpreading horns; reticulated on each ſide with veins; ſomewhat tranſparent between the veins, and armed with four pair of weak divaricated ſpines proceeding from the veins. *Cells* naturally two, placed by the ſide of each other and ſeparated by a thin partition; but, in the mature fruit, one is conſtantly obliterated. *Seed* ſingle, ovate-oblong, compreſſed, incloſed in an aril. Gært. Tab. 142. fig. 3. Native of the Levant and of the deſert of the Calmucks near the Caſpian ſea. 2. B. *ſpinoſa*, Linn. Mant. 96. (Myagrum ſpinoſum, Lam.) "Racemes ſpineſcent." Gært. Tab. 142. f. 2. *Root* annual. *Stems* a foot high, erect, branching, ſubdivided, round, ſlender, very ſmooth, green. *Leaves* ovate-oblong, blunt, ſomewhat angular, ſmooth, petioled. *Racemes* erect, ſtiff, rigid, terminating with compound ſpines, and a few ſeſſile flowers. *Calyx* oblong, cloſed. *Petals* lanceolate, pale violet. *Germ* heart-ſhaped. *Style* cylindrical, the length of the germ, permanent. *Stigma* thickiſh. *Silicle* a ſpungy drupe, heart-ſhaped, turgid, ſmooth, and even terminated by the pyramidal, permanent ſtyle; rind thick, ſhell two-celled, hexangular, two oppoſite angles broader. *Seeds* ſolitary, roundiſh, Linn. and Gært. Native of the Levant. 3. B. *Erucago*, Linn. (Erucago ſegetum, Tourn. Myagrum Erucago, Lam.) Jacq. Auſt. Tab. 34[illegible]. Gært. Tab. 142. f. 2. "Silicles four-angled, beaked; angles two-creſted; lower leaves lyreſhaped; lobes oppoſite, triangular." La Marck. *Root* annual. *Stems* numerous, a foot and half high, ſlender, ſpreading, rough with a very ſhort pile. *Radical leaves* rather ſtraight, with toothed lobes, ſoon withering. *Stem leaves* ſmall, lanceolate, toothed, and diſtant. *Flowers* yellow, peduncled, in looſe, terminal racemes. *Silicle* a quadrangular drupe with a rough ſurface, narrowed in the middle, terminated by the long ſtyle, and divided at its angles into two very prominent, toothed creſts. *Rind* ſpongy-membranous, thin, whitiſh. *Shell* bony, four-celled; cells in pairs, one over the other, all fertile. *Seeds* roundiſh, plano-convex, rufeſcent. La Marck and Gært. Abundant in corn-fields, in the ſouthern parts of France. 4. B. *aſpera*, Willd. "Silicles four-angled, all the leaves lanceolate." Root annual. *Stem* near a foot high, ſomewhat branching, rough with minute prickles. *Lower leaves* inverſely lanceolate, upper ones lanceolate, a little toothed; with a few white, forked and trifid hairs. *Flowers* yellow, in racemes. *Calyx* ſomewhat ventricoſe, converging. *Silicles* very ſhort, muricate, creſted with four oppoſite ſerrated angles; and terminated by a pyramidal, capitate ſtyle, the length of the ſilicle. Retz. Obſ. 2. p. 21. Native country unknown. 5. B. *orientalis*, Linn. (Crambe orientalis, Tourn. Myagrum orient. La Marck,) Gært. Tab. 142. " Silicles ovate, gibbous, warty; lower leaves runcinate-lyreſhaped, upper ones lanceolate." Willd. *Root* perennial. *Stems* herbaceous, upwards of two feet high, branched. *Flowers* yellow, in long, terminating racemes. *Silicle* drupaceous, roundiſh or ovate-oblong, gibbous, warty, ending in a ſhort ſtyle. *Rind* fungous, ſtraw-coloured. *Shell* bony, of the ſhape of the ſilicle, ſmooth without; with two cells one above the other, the upper one, in ſuch ſilicles as are roundiſh, generally obliterated. *Seeds* roundiſh, rufeſcent. Miller and Gærtner. Gathered by Tournefort in the Levant, and by Gmelin in Siberia. 6. B. *cochlearioides*, Willd. " Silicles ovate, bluntiſh, ſomewhat wrinkled; radical leaves oblong, ſtem-leaves arrow-ſhaped, embracing the ſtem." *Root* annual; a native of France, Italy, Hungary, &c. 7. B. *tatarica*, Willd. (Vella tenuiſſima, Pallas It. tom. 5. Pl. 6. French Tranſlation.) " Silicles globular, ſomewhat hexagonal, with long beaks; leaves lanceolate, blunt, petioled." *Root* annual. *Stem* erect, branching, half a foot high. *Leaves* very entire; hiſpid, attenuated into a petiole at the baſe. *Flowers* white, in filiform racemes. *Silicles* ſix-furrowed, crowned with the thick, cylindrical, permanent ſtyle, two-celled, not opening. 8. B. *myagroides*, Linn. Mant. 96. (Cakile myagroides, Vent.) La Marck Illuſt. Tab. 554. fig. 1? " Silicles two-edged, two-jointed, a little ſwelling above; leaves pinnate, with reflected ſinuſes." *Root* annual. *Stem* ſtraight, two feet high, even, irregularly branched. *Lower leaves* pinnate or bipinnate, rather broad, not fleſhy, deep green, with oblong, toothed diviſions or pinnas; the upper ones very ſimilar, but narrow and linear; all with reflected ſinuſes. *Racemes* terminal, long, ſtraight. *Flowers* nearly ſeſſile: *Calyx* oblong, cloſed. *Petals* very entire, pale, purple. *Anthers* yellow. *Style* ſword-ſhaped. *Silicle* ſub-cylindrical, rigid, approximating to the rachis; on a ſhort peduncle; lower joint cylindrical, two-valved, generally with only one ſeed, the valves marked with a ſingle ſtreak; upper joint compreſſed, obſcurely two-edged, generally with only one ſeed, blunt, with a protuberant auricle on each ſide. Linn. A native of Siberia. 9. B. *ægyptiaca*, Linn. Syſt. Nat. tom. 3. p. 231. (Myagrum verrucoſum, La Marck) Gært. Tab. 142. copied by La Marck in Illuſt. Pl. 553. fig. 3. " Silicles four-angled, rugged with warts on all ſides; leaves runcinate." *Root* annual. *Stem* a foot high, branched, hiſpid below, ſmoother above. *Leaves* runcinate, ſomewhat toothed, even; with a few hairs beneath on the petioles. *Racemes* ſolitary, terminal, long. *Flowers* pedicelled. *Calyx* yellowiſh, ſpreading. *Petals* dark yellow, obovate, obtuſe, ſpreading, with erect claws. *Stamens* yellow, diſtant. *Germ.* ovate, four-angled, green. *Style* none: *ſtigma* capitate, yellow. *Silicle* drupaceous, ſmall, ovate, four-angled; the two narrower ſides rugged with warts; the two broader marked with a double, longitudinal, elevated ſtreak, which is crenulate, or ſlightly tubercled; rind very thin, membranaceous; ſhell bony, muricate, two-celled; cells placed ſide by ſide. *Seeds* ſolitary, ovate, convex on one ſide, flat on the other, rufeſcent. Linn. and Gært. A native of Egypt. 10. B. *balearica*, Linn. Mant. 429. (Myagrum bal. La Marck) Jacq. hort. Tab. 144. Govan illuſt. tab. 20. " Silicles hiſpid; leaves pinnate; folioles ſomewhat toothed." *Root* annual. *Stem* a foot high, much branching, ſpreading, angular, ſmooth. *Leaves* petioled; pinnæ lanceolate, ſinuate, obtuſe, ſmooth. *Peduncles* in racemes, very long, erect; pedicels ſhorter than the flowers. *Calyx* cloſed, ſmooth, lanceolate, concave, teſtaceous. *Corolla* yellow; petals oblong, obtuſe, the length of the calyx. *Silicles* globular, echinated on every ſide with denſe, weak ſpines, and terminated by an awl-ſhaped, ſtiff beak, longer than the ſilicle. A native of Majorca and Minorca. 11. B. *proſtrata*, Willd. Deſf. Atl. tab. 150. " Silicles one-ſeeded, toothed; leaves pinnatifid; ſegments ſinuate." *Stems* numerous, proſtrate, pubeſcent from the root. *Leaves* pubeſcent, deeply pinnatifid; ſegments obtuſe, toothed. *Flowers* white. *Silicles* roundiſh, compreſſed, terminated by the permanent ſtyle, pubeſcent. A native of the ſandy ſoil in the northern part of Africa. 12. B. *Cakile*, Linn. Hudſon, Withering, Smith. (Cakile maritima Tourn. La Marck, Vent. Willd. Cakile Serapionis Lob. Gært.) Eng. Bot. Pl. 231. La Marck Illuſt. Pl. 554. fig. 2. Gært. Tab. 141. " Silicles ovate, two-edged, ſmooth, one-ſeeded; leaves fleſhy." Smith. *Root* annual, ſlender, woody, running deep into the ſand. *Stem* round, much branched, woody, divided from the baſe into widely divaricated, zig-zag, twiſted branches. *Leaves* alternate, thick and ſucculent, rather glaucous, ſmooth, more or leſs deeply pinnatifid and toothed; their ſegments all obtuſe. *Flowers* pale purple in denſe, terminal corymbi, which afterwards grow out into ſpikes. *Calyx* gibbous at the baſe. *Silicle* ſmooth, oblong, acuminate, obſoletely four-angled, but ſo compreſſed as to make two oppoſite edges very prominent, two-jointed, ſeparating at the joints; the upper joint largeſt, deeply emarginate at the baſe, ſpongy, conſtantly fertile, one-celled, not opening ſpontaneouſly, but eaſily ſeparated into two valves at the prominent angles; the lower joint ſmaller, ſomewhat top-ſhaped, ſometimes perfectly ſolid, and ſometimes furniſhed with a cell, which is either barren or contains a ſingle ſeed; but a fertile lower joint is very rare, and never occurred to the obſervation of Gærtner. Miller, Gært. and Smith. An inhabitant of the ſea-coaſts of Europe, Aſia, Africa, and America. Willdenow deſcribes the variety β of Vahl, which he conjectures to be Iſatis Egyptiaca of Linnæus, as a ſecond ſpecies of his genus Cakile, under the trivial name of Egyptiaca. It differs chiefly in having larger leaves, longer peduncles, and a ſeed always in each cell; but it ſeems to be only a variety of the common ſpecies.

Obſ. This genus, like ſeveral others of the ſame natural family, is very perplexed and obſcure, and differently treated by different authors. Linnæus, at firſt, formed it of ſuch ſpecies as have rough or muricated ſiliques or ſilicles, including the Erucago of Tournefort, and framed its generic character accordingly: but afterwards, without changing the character, admitted the Cakile of Tournefort, which has not rough or muricated ſilicles, and which in his Hortus Cliffortianus and Flora Suecica, he had placed under Raphanus. La Marck has aboliſhed it entirely, keeping Cakile diſtinct, and placing the other ſpecies under Myagrum, which, he ſays, forms with them a very natural genus, conſiſting of ſpecies with ſilicles, in ſome reſpects ſo different from each other, that, if not united under one very general character, they muſt conſtitute nearly as many genera as ſpecies. Juſſieu, inſtead of uniting it with Myagrum, is rather inclined to divide it into three, Bunias, Erucago, Cakile. Gærtner makes its eſſential character depend on a drupaceous ſilicle, adding that thoſe who are delighted with a multitude of genera, may divide it according to the internal ſtructure of the drupe, and the ſeeds into Bunias, Lœlia, and Erucago. In conſequence of this eſtabliſhed principle, he has not only reſtored the genus Cakile of Tournefort, but has alſo introduced a new one for the Bunias cornuta of Linnæus, under the generic name Pugionium, from *pugio*, a dagger, ſuggeſted by the ſhape of the ſingular proceſſes from the ſilicle. Willdenow and Ventenat have admitted the three genera, and the latter has alſo again made Erucago a diſtinct genus. In this diverſity of opinion, we have thought it beſt to keep the Linnæan genus entire, only adopting the eſſential character given by Dr. Smith in his Flora Britannica, which appears to be equally comprehenſive of the proper ſpecies and excluſive of others.

Bunias *Syriaca*, of Gærtner and Willdenow. See Anastatica *Syriaca*. La Marck ſays that it has the fruit of his Myagrum, and conſequently canot belong to the genus Anaſtatica. Gærtner, when his plates were engraved, followed the arrangement of Linnæus, but, when he wrote the deſcriptions, had diſcovered that the ſilicle is properly a drupe, though the rind is ſo thin as to be ſcarcely diſcernible, and that, therefore, it belongs to his genus Bunias.

Bunias, Gerard. See Brassica *Napus*.

BUNIUM, (ſuppoſed, like Bunias, to be derived from βουνός, a hill, as is ſaid, from its affecting high ſituations, but that being neither its peculiar nor univerſal character, it is probably ſo called from the form of its root) Earth-nut, Kipper-nut, Pig-nut, or Hawk-nut. Linn. gen. 335. Schreb. 468. Willden. 532. Juſſ. 223. Vent. vol. iii. 30. Gært. 807. Bulbocaſtanum Tourn. Claſs and order, *pentandria digynia*. Nat. Ord. *Umbellatæ* Linn. *Umbelliferæ* Juſſ.

Gen. Char. *Umbel univerſal* manifold, with rays fewer than twenty: *partial*, very ſhort, crowded. *Involucre univerſal* ſhort, of many linear leaves, ſometimes not more than three, or only one, and after the flowers are opened, often entirely wanting: *partial* ſetaceous, the length of the partial umbel. *Perianth proper* ſcarcely apparent. *Coral univerſal* uniform. *Florets* all fertile. *Cor. proper* of five inflex-cordate, equal petals. *Stam.* filaments five, ſhorter than the corolla, ſimple; anthers ſimple. *Piſt.* germ oblong, inferior; ſtyles two, reflexed; ſtigmas obtuſe. *Peric.* none: fruit ovate, ſplitting in two. *Seeds* two, ovate, convex on one ſide, flat on the other. Linn. five ſtriated, the ſpaces between the ſtreaks ſlightly wrinkled. Gært.

Eſſen. Char. *Cor.* Uniform. *Umbel* crowded. *Fruit* ovate.

Sp. 1. B. *Bulbocaſtanum.* Linn. (B. minus. Gouan.) La Marck, Ill. 197. "Involucre many-leaved: ſtem ſtraight and leafy at the baſe." Dr. Smith. "Leaves uniform, involucre many-leaved." Willd. "Fruit ſomewhat cylindrical, thicker at the apex; ſtyles reflexed, deciduous." Gouan. *Root* perennial, tuberous, roundiſh. *Stem* round, alternately branched, leafy, ſtriated, ſmooth. *Leaves* tripinnate: ſegments linear, of ten trifid. *Umbels* terminal, erect. *Partial umbels* cloſe, white. *Involucre* three times ſhorter than the rays. Dr. Smith. Common on the Continent; rare in England; found by Martyn in the time of Dillenius, near Hornſey wood, and by Mr. William Wood, lately in Kenſington gardens. 2. B. *flexuoſum*, Stokes in Withering and Dr. Smith. (B. majus. Gouan and Willdenow.) "Involucre of three leaves or leſs; ſtem naked, tapering, and zig-zag at the baſe. Dr. Smith. "Stem leaves very narrow, involucre none." Willd. "Fruit ovate, acuminate; ſtyles permanent." Gouan. *Root* tuberous, roundiſh. *Stem* elongated under the earth, tapering, zig-zag, white; about a foot and a half high, erect, branched, leafy, ſtriated, ſmooth. *Radical leaves* on long petioles, tripinnate; ſegments linear, pinnatifid and gaſhed; ſtem-leaves nearly ſeſſile, triternate, finely divided; ſheath ſhort, grooved, ſmooth, the edge membranous and whitiſh. *Umbels* ſeveral; univerſal rays from ſeven to twelve, partial about twelve. *Involucre univerſal* and *partial* various; in Yorkſhire ſpecimens, the univerſal involucre moſt commonly conſiſts of one or two lanceolate leaves, with three coloured ribs, proceeding from a projecting ring which ſurrounds the baſe of the umbel; partial one of from one to three leaves, exactly reſembling thoſe of the univerſal involucre and proceeding from a ſimilar ring. *Styles* white, according to Curtis, but in our ſpecimens they are purple, with globular ſtigmas. A native of heaths, dry paſtures, and woods, in almoſt every part of England. Linnæus confounded theſe two ſpecies, but, as Dr. Smith obſerves, appears to have drawn his deſcription from the Bulbocaſtanum, the majus of old authors. Ray knew only one ſpecies, which muſt have been the flexuoſum; but Magnol, his contemporary, mentions both in his index of plants growing about Montpelier, and adds that he found them to be ſpecifically different by cultivating them in his garden. Johnſon, in his edition of Gerard, diſtinguiſhed them, and Dillenius was rather inclined to think them diſtinct; though Profeſſor John Martyn, on whoſe authority he admitted the majus of the old botaniſts as a Britiſh plant, ſuſpected that the difference was owing to the roots growing nearer than uſual to the ſurface of the ground. Gouan, who cultivated them during eight years, is ſurpriſed that they have not been diſtinguiſhed long ſince, and gives ſpecific differences, which, however, do not ſatiſfy the preſent profeſſor, Thomas Martyn. But Dr. Stokes and Dr. Smith have, we apprehend, now determined the queſtion. The tuberous roots of both ſpecies, on account of their ſweetiſh taſte, have long been a favourite eſculent with boys, and when boiled or roaſted are ſaid to be little inferior to cheſnuts. Ray recommends them when ſeaſoned with pepper as a nouriſhing, ſtimulating, food; and the old empirics attributed medical virtues to them, which have long ſince been exploded. Gouan and Willdenow have perverſely given the ſpecific name majus to the minus of the old authors. 3. B. *aromaticum*, Linn. Mant. 218, "partial involucres of three leaves." *Root* annual, and as Boſc obſerves, probably not tuberous. *Stem* erect, even, alternately branched. *Leaves* reſembling thoſe of Carum Carui, ſuper-decompound. *Umbel* of ten or twelve rays on a long, ſtriated peduncle. *Partial umbels* ſhort. *Univerſal involucre* of about ſix, ſhort, awl-ſhaped leaves. *Partial involucres* of about three leaves, the length of the little umbel. *Corolla* white. *Petals* equal, inflex-cordate, *Seeds* ovate, minute, yelding an aromatic odour, ſimilar to Marjoram. A native of Crete and Syria.

Bunium. Sauvage, Monſ. See Sison *verticillatum*.

BUNIUS, Dalech. J. Bauh. See Æthusa *Bunius*.

Bunius, Rumph. and Burm. See Stilago *Bunius*, now diſcovered to be the male of *Antideſma alexiteria*.

BUNKER'S Hill, in *Geography*. See Breed's *Hill*.

BUNKLE'S Manuscript, *in Biblical Hiſtory*, a modern MS. of the four Goſpels, noted in Mill Bu, and 70 in the firſt part of Wetſtein's New Teſtament. When this MS. was collated by Mill, it was the property of Mr. Bunkle of London; but at preſent it is preſerved in the Univerſity library of Cambridge. Whether it was written a ſhort time before or a ſhort time after the invention of printing, which laſt is aſſerted by Wetſtein, in oppoſition to Mill, is a matter of little importance. It is ſuppoſed to have been written by George of Sparta, who was ſent on an embaſſy to England by Pope Sixtus IV. in 1476. It has not the ancient κεφαλαια, but the modern chapters, which are found in our printed bibles. Michaelis's Int. to the New Teſtament by Marſh, vol. ii. and iii.

BUNNAS, in *Geography*, a river of Hindooſtan, which runs into the Jeſſul; 25 miles S.E. of Oudipour.

BUNNICK, John Van, in *Biography*, a painter of hiſtory and portrait, was born at Utrecht in 1654, and under the inſtruction of Herman Sachtleven, became a conſiderable artiſt. Having for ſome time aſſociated with Gerard Hoet in the exerciſe of his art, he determined to improve himſelf at Rome; and there became acquainted with Carlo Maratti, and Abraham Genoels, from whoſe works and converſation he derived great benefit. Intending to return home, he was detained by the duke of Modena, who engaged his ſervice by the grant of an honourable penſion, and retained him in his court for eight years. He deſigned well, diſpoſed his figures with elegance and propriety, and was correct in his outline. He died in 1727.

His brother and diſciple, *Jacob Van Bunnik*, became an excellent maſter, and diſtinguiſhed himſelf by painting battles. His ſubjects were different from thoſe of his brother, but in the manner of his handling and colouring he reſembled him entirely. He died in 1725. Pilkington.

BUNNOO, or Banou, in *Geography*, a town of Cabul, ſituate between the mountains of Sindia Baſtch, which lie ſouth of Paiſhawur and the river Cophenes, or Cow river, or the great river of Bunguſh, which is formed by the waters of Ghizni and Gurdaiz, and paſſing by Nughz and Bunnoo, diſcharges itſelf into the Indus or Sindé, at Deinkote. N. lat. 33°. E. long. 70° 20′.

BUNNUEL, a town of Spain in Navarre, ſeated on the Ebro; 7 leagues from Tudela.

BUNOLA, a ſmall town in the iſland of Majorca.

BUNOWEN, a village on the coaſt of Connemara, in the weſtern part of the county of Galway, Ireland, which gives name to a bay, in which ſmall veſſels may ride in the ſummer time, or in moderate weather, the ground holding well, and the water from 2 to 2½ fathoms. N. lat. 53° 24′. W. long. 10° 8′.

BUNRATTY, a barony in the county of Clare, Ireland, which derives its name from the old caſtle of Bunratty, or Bonratti, which was built near the mouth of the ſmall river Gearna, that flows into the Shannon, and was conſidered a fortreſs of great ſtrength and importance. It was built by Thomas de Clare in 1277 for the protection of the Engliſh ſettlers; and was afterwards the occaſional reſidence of the earls of Thomond. Being taken poſſeſſion of by the adherents of the parliament in 1646, it was beſieged by the Iriſh under lord Muſkerry, and held out ſix weeks. It is about 8 miles weſt from Limerick. Hollinſhead.

BUNT *of a ſail*, in *Sea Language*, is the middle part of it, formed into a kind of bag, or pouch, that it may catch and receive the more wind.

The bunt is chiefly uſed in topſails, the foremoſt leech of which is cut with a neck; for courſes are for the moſt part cut ſquare, or at leaſt with a ſmall allowance for bunt or compaſs, which is the middle part of the foot of ſuch ſails. They ſay, *the bunt holds much leeward wind;* that is, it hangs too much to leeward.

Seamen all agree, that a bellying or bunting ſail carries a veſſel faſter to the windward than a ſtraight or faſt ſail: the contrary of which is aſſerted by Dr. Hooke, who has a diſcourſe to ſhew the preference of ſtraight to bunting ſails. See Hooke's Poſthum. Works, p. 563, ſeq.

Bunt-*lines*, are ſmall lines made faſt to the bottom of the ſquare ſails, in the middle part of the bolt-rope to a crengle; and ſo are reeved through a ſmall block, ſeized to the yard: their uſe is to trice up the bunt of the ſail, for the better furling it up.

Bunt-*line-cloth*, is the lining ſewed up the ſail, in the direction of the bunt-line, to prevent the ſails being chafed.

BUNTINE, a thin woollen ſtuff, of which the colours and ſignals of a ſhip are uſually made.

BUNTING, in *Ornithology*, the Engliſh name of the birds of the Emberiza genus. See Emberiza.—*Bunting* is the name applied in common to *Emberiza Miliaria.*

BUNTINGFORD, in *Geography*, a ſmall market-town in the county of Hertford, England. It ſtands on the banks of the river Rib, near the ſpot where the Roman road called Enning-ſtreet croſſed it. Edward the third, in the 21ſt year of his reign, granted to this town the privilege of a *yearly* market, and a fair. In the 41ſt year of his reign he further endowed it with a *weekly* market on Saturdays, and a fair in June. This town is only a chapelry to Layſton, where the church is ſituated, but the inhabitants are accommodated with a neat and commodious chapel, which was finiſhed in 1626. Here are a free-ſchool, an alms-houſe, and other charities. The preſent market day is Monday; but the markets are very inconſiderable. Buntingford is 31 miles north from London, and with the remainder of the pariſh, contains 163 houſes, and 792 inhabitants. Magna Britannia, vol. ii. 973.

BUNTSPECHT, in *Ornithology;* Friſch has the greater woodpecker, *picus major*, under this name.—*Kleiner Buntſpecht* is the leſſer ſpotted woodpecker, *picus minor*, in the ſame author.

BUNTZLAU, or Bunzel, in Latin *Boleſlavia*, in *Geography*, a town of Sileſia, in a circle of the ſame name, and in the principality of Jauer. It is ſeated in a fertile country, on the Bober; and exports great quantities of its beautiful brown earthen ware. It was formerly noted for the rich mines in its vicinity, and the Sileſian bards have celebrated the limpid and ſalubrious waters of the queck-brunn or quick-ſpring that lies near it. N. lat. 51° 12′. E. long. 15° 50′.

Buntzlau, *Alt*, an ancient town of Bohemia, in the circle of Boleſlaw, founded by Wratiſlaus in 915, but reduced by the troubles of the 15th and 16th centuries to an inconſiderable place. It is ſeated on the Elbe, 8 miles S.S.W. of Benatek or Benatky.

Buntzlau, *Jung*, a town of Bohemia, and capital of the circle of Boleſlaw, built in 973 by Boleſlaw the younger, and ranked in 1600 among the royal boroughs by the emperor Rudolph. It is ſeated on the Iſer, 28 miles N.N.E. of Prague.

BUNYAN, John, in *Biography*, a very popular writer among perſons of a particular deſcription, ſprung from an obſcure origin, being the ſon of a tinker, and was born at Elſtow near Bedford, in 1628. His parents gave him an education ſuitable to their condition, and taught him to read and write; but his converſation and conduct in early life were remarkably vicious and profane, though not without ſome checks, which indicated very ſtrong religious impreſſions. In proceſs of time theſe impreſſions, revived and cheriſhed by the converſation of ſome pious women, with whom he accidentally aſſociated, terminated in a thorough reformation, ſo that he became as much diſtinguiſhed for his piety as he had once been for his profligacy. For ſeveral years he followed his father's occupation, and in the exerciſe of it travelled about the country, particularly in the neighbourhood of Bedford. He enliſted as a ſoldier in the parliament army, and at the ſiege of Leiceſter in 1645, his life was ſingularly preſerved by his conſenting to give up his place as ſentinel to a comrade, whoſe head was taken off by a muſket ball. At the time of his marriage, his poverty was ſuch, that neither he nor his wife poſſeſſed ſo much as a diſh or a ſpoon; but ſhe had, what he deemed of greater value, "The Plain Man's Path-way to Heaven," and "The Practice of Piety," which he was accuſtomed to read with her, and which afforded him ſingular ſatisfaction and advantage. Of the ſincerity of his converſion he had exhibited ſuch evidence, that he was admitted in 1655 a member of a Baptiſt congregation at Bedford; and he was ſo regular an attendant on meetings held for religious purpoſes, that, ſoon after the reſtoration, he was convicted of aſſociating with others in unlawful aſſemblies and conventicles, ſentenced to perpetual baniſhment, but afterwards committed to priſon, where he ſupported himſelf and family, during a confinement of twelve years and a half, by making tagged laces, and where he employed part of his time in preaching to and praying with his fellow-priſoners. His library at this time conſiſted only of the Bible, and the Book of Martyrs; and yet he compoſed many of his works, and, particularly, his "Pilgrim's Progreſs," whilſt he remained in priſon. In the laſt year of his confinement, ſuch was the eſtimation in which his talents and character were held, that he was unanimouſly choſen paſtor of the congregation at Bedford. After his enlargement, for which he was indebted to the compaſſionate interference of Dr. Barlow, biſhop of Lincoln, he travelled into ſeveral parts of England, for the purpoſe of viſiting and confirming perſons of the ſame profeſſion; whence he obtained the appellation of "Biſhop Bunyan." Upon the publication of King James II.'s declaration for liberty of conſcience, Bunyan was enabled, by the voluntary contributions of his friends, to build a meeting-houſe at Bedford, where he conſtantly preached to very large congregations. He alſo frequently viſited London, and preached there among the non-conformiſts; but in one of theſe viſits he was ſeized with a fever, and died at his lodgings on Snow-hill, Auguſt the 31ſt, 1688, aged 60. His remains were interred in the burying ground belonging to the diſſenters in Bunhill Fields. His religious ſentiments were thoſe of the moſt rigid Calviniſts, to which he was zealouſly attached; his piety, though blended with ſome degree of enthuſiaſm, was ſincere and uniform; and his moral conduct, after the period of his converſion, was not only irreproachable, but exemplary, though his zeal expoſed both his principles and character to many unfounded reproaches and calumnies. As he never enjoyed the advantages of a liberal education, his public performances, as a preacher, and his writings, as an author, indicate very extraordinary talents. In his preaching, he ſpoke with conſiderable fluency, though not without ſome heſitation; and his miniſterial labours were countenanced by the learned Dr. John Owen, who occaſionally attended his ſermons. Of his numerous works the moſt celebrated, both for its compoſition and popularity, is his "Pilgrim's Progreſs." This work, which has paſſed through more than fifty editions, and which has been tranſlated into various languages, has been admired and applauded by ſome of the beſt judges: and there are few perſons who have not read it, whatever may be their opinion of the theological ſyſtem on which it is founded, and of the terrific ideas which it is adapted to excite in the minds of the young. The allegory is well conducted and ſuſtained; the characters that are introduced are juſtly drawn; it abounds with lively deſcription, and manifeſts the exuberance of invention. Lord Kaimes, ſpeaking in his "Sketches of the Hiſtory of Man," (vol. i.) of this work, and "Robinſon Cruſoe," the great favourites of the vulgar, ſays, that "they are compoſed in a ſtyle enlivened, like that of Homer, by a proper mixture of the dramatic and narrative:" and Bunyan's genius, diſplayed in this performance, has been, perhaps, extravagantly extolled by other writers, among whom we may reckon Mr. Granger, Mr. Merrick, and Dr. Roberts, to whoſe ſentiments great deference is due. Many of Mr. Bunyan's other works are of the allegorical or parabolical kind; and though not equally popular with the "Pilgrim's Progreſs," are much read by a certain claſs of perſons. The moſt conſiderable of theſe is the "Holy War, made by Shaddai upon Diabolus." One of the moſt intereſting of his works is "Grace abounding to the Chief of Sinners," containing an account of his own life. All his works were collected together in 2 vols. folio, London, 1736, 1737: and a new edition, more complete than any of the preceding, with copper-plates, and a recommendatory preface, by Mr. George Whitfield, was publiſhed in 2 vols. folio, in 1767. Biog. Brit.

BUOMMATTEI, Benedict, an early Italian grammarian, was born at Florence in 1581, and having entered into the prieſthood, diſcharged the duties of his function, and purſued literary ſtudies at Rome and Padua, and chiefly in his native city. He was a member of ſeveral academies, and particularly of thoſe of Della Cruſca and the Apatiſti, where he recited lectures and diſcourſes, many of which have been publiſhed. But he is principally known by his two books "On the Tuſcan Language," being the firſt work that deſerves the title of a grammar of the Italian language, and ſtill popular and highly eſteemed. Buommattei died at Florence in 1647. Tiraboſchi. Gen. Biog.

BUON, in *Geography*, a town of the kingdom of Naples, and Principato Ultra; 7 miles E.N.E. of Benevento.

BUONACCORDO, a ſmall ſtringed muſical inſtrument, reſembling a ſpinet, uſed by children to learn to play on, becauſe of the ſhortneſs of their fingers.

The word is Italian, and properly denotes a harpſichord.

BUONACCORSI, Philip, in *Biography*, an elegant modern Latin writer, was born of a noble family at S. Gimignano, in Tuſcany, in 1437, and reſiding at Rome in his youth, he was one of the founders of the Roman academy, according to the cuſtom of which he aſſumed the name of "Callimaco," adding to it "Eſperiente," in alluſion to the viciſſitudes of his life. Being ſuſpected by pope Paul II. of a concern in a conſpiracy againſt his life, he was under a neceſſity of ſecuring himſelf by flight; and having wandered through Greece, Egypt, Cyprus, Rhodes, and other iſlands in the Archipelago, Thrace, and Macedonia, he at length took refuge in Poland; where he was introduced to king Caſimir, who made him tutor to his ſon Albert, and his own ſecretary. He alſo employed him in ſeveral embaſſies. After the death of Caſimir, he was entruſted by Albert, his ſucceſſor, with the conduct of all the affairs of his court and kingdom; and though theſe marks of diſtinction excited the envy of Albert's courtiers, and many attempts were made to ruin him, he retained his ſovereign's favour till his death, which happened at Cracow, in 1496. Calimaco, for ſuch was the name by which he is diſtinguiſhed as a writer, wrote in 3 books the life of Ladiſlaus, brother and predeceſſor of Caſimir, with an account of the battle of Varna, in which he was killed. He alſo compoſed a life of Attila, and a ſmall treatiſe on the attempts of the Venetians to excite the Tartars and Perſians againſt the Turks. Theſe pieces, with ſome orations and letters, have been publiſhed together, and paſſed through ſeveral editions. The ſtyle in which they are written is elegant and forcible, and in the opinion of Paul

Giovio, no hiſtorian ſince Tacitus has equalled Buonaccorſi. Many unpubliſhed works are preſerved in the Vatican, and other libraries. Tiraboſchi. Gen. Biog.

Buonaccorsi. See Pierino del Vaga.

BUONAMICI, Castruccio, was born at Lucca in 1710, and having entered into the eccleſiaſtical ſtate, ſought advancement at Rome; but being diſappointed in his views, he aſſumed a military character, and engaged in the ſervice of the king of the two Sicilies. He ſtill, however, indulged his taſte for the purſuits of literature. His principal works are a relation in Latin of the war of Velletri in 1745, between the Auſtrians and Neapolitans, printed in 1746, under the title of "De Rebus ad Velitras geſtis Commentarius," 4to.; for which work he was recompenſed with a penſion by the king of Naples, and the rank of commiſſary-general of Artillery: and "De Bello Italico Commentarii," 4to. in 3 books, 1750, 1751; containing the hiſtory of the war in Italy, for which he was honoured by the duke of Parma with the title of count. Theſe hiſtories, equally admired for accuracy of detail, and purity of Latin, have been ſeveral times re-printed. The author's treatiſe "De Scientia Militari," remains unpubliſhed. He died at Lucca in 1761. Nouv. Dict. Hiſt.

Buonamici, Lazzaro, was born at Baſſano in 1479, and educated in the univerſity of Padua, where he gained ſuch reputation, that Pomponazzi, his tutor in philoſophy, ſometimes applied to him for the explanation of a paſſage in Ariſtotle. From Bologna, where he was employed in the inſtruction of the young perſons of the Campeggi family, he removed to Rome, and became profeſſor of the belles lettres in the college of Sapienza. In 1527, when the city was ſacked, he loſt his library, writings, and all his effects, and with difficulty ſaved his life. At Padua he occupied the chair of Greek and Latin eloquence, to which he was invited in 1530, and in this ſituation, where he was highly reſpected, and where he had a great concourſe of ſtudents, he remained, notwithſtanding ſeveral applications made for removing him by univerſities and ſovereign princes, till his death, which happened in 1552. He was borne to his grave on the ſhoulders of his ſtudents. His writings, conſiſting of letters, prefaces, and Latin poems, are few, but they are ſufficient to eſtabliſh his character as an elegant writer. Notwithſtanding his profeſſional reputation, he diſſipated much of his time in the intercourſes of ſociety and in play, to which he was ſo much addicted, that he ſometimes devoted whole nights to it. His dread of criticiſm might alſo prevent his appearing before the public as an author. A collection of his poems was printed for the firſt time at Venice in 1572. Tiraboſchi. Gen. Biog.

BUONAMICO, of Cristophano, called Buffalmacco, was a Florentine painter, born in the year 1262, and a pupil of Andrea Taſi. He was an artiſt of great merit, and by Boccaccio celebrated for his wit and humour (vide Il Decamerone); and Franco Sacchetti in his "Tre Cento Novelle," relates a ſtory of him when he was a boy, which ſhews the early bias of his mind; and as it pourtrays the character of the man, it may not be without its intereſt. Andrea Taſi was a painter of great induſtry, and uſed to riſe before it was light to purſue his avocation, conſidering the gain more than the honour of his profeſſion. Early riſing, unfortunately, had no charms for his ſcholar, and therefore he deviſed a ſcheme to make him lie in bed till daylight. At the hour Taſi was about to riſe, having previouſly provided himſelf with thirty black beetles, and on their backs faſtened ſmall pieces of wax taper, he lit them up, and ſent them, one by one, through a hole in the door, into his maſter's bed room; making a proceſſion of moving light myſteriouſly unintelligible; which ſo alarmed the old man, that he prayed and recommended his ſoul to mercy, and hid his face under the bed clothes. In the morning he told Buonamico he had ſeen ten thouſand devils, and that his thoughts were ſo diſturbed he could not riſe to purſue his profeſſion. On the ſucceeding night, Buonamico diminiſhed the number of the beetles; but the repetition produced the ſame effect, and ſo frightened his maſter, that he determined to remove, being perſuaded the houſe was haunted by evil ſpirits. Buonamico then ſent to the pariſh prieſt that he might adminiſter comfort. The prieſt came and ſoothed his mind; and Buonamico availed himſelf of the opportunity to make his obſervations on the probable cauſe of this perplexing event. He obſerved that he had always heard devils were great enemies to God; and conſequently they muſt be ſo to all painters, as their practice was to paint ſaints and angels as perfect as poſſible, and endeavour to improve mankind, by ſhewing, through all the circumſtances of human life, the happineſs of heaven and the torments of hell; beſides, whenever fiends were repreſented, they were made as hideous as the painters' imagination could ſuggeſt: and as it was well known that devils had more power by night than by day, they played him this trick to keep him in bed, that he might not interfere with their region of darkneſs: by ſuch obſervations, which the prieſt thought very plauſible, the old man was perſuaded that it would be proper to lie in bed till day-light. After a few months, however, as the devils grew fainter in his recollection, Taſi's induſtry returned; but as they had played their part ſo well, Buonamico recurred to his former expedient, which produced an effect not leſs frightful and impreſſive. Prieſts were again ſent for to reſtore him to tranquillity, who agreeing with Buonamico in the probable cauſe of this ſtrange appearance, he determined to paint no more by candle-light; and this ſtory was ſo generally circulated and believed, that all the painters in Florence were afterwards afraid to paint at night.

Among the firſt works of Buffalmacco, were a ſeries of religious pictures repreſenting the life of Chriſt, painted in a church at Faenza, and other ſubjects from the Old and New Teſtament; among which the maſſacre of the Innocents is particularly mentioned by Vaſari, where deſpair and terror, agony and diſtreſs, were forcibly expreſſed. Of this work nothing now remains, except the original drawings be in exiſtence, which the ſame author deſcribes to have been preſerved in his time. He alſo painted in the cloiſters of the abbey of Septimus, ſeveral hiſtorical ſubjects relating to St. James, to whom the church was dedicated; and on the ceiling he painted the four evangeliſts. He painted alſo many hiſtorical pictures on the outſide of this building, which were well compoſed, and executed with ſkill. In theſe pictures he employed ſalt in the purple uſed for the ſhade tint of the fleſh, which ſo corroded and deſtroyed all the other colours, that, in Vaſari's time, nothing remained but the purple; which premature decay this author at firſt attributed to dampneſs, but, upon minute inſpection, found it was owing to the ſalt that was employed.

For the monaſtery of the Carthuſians at Florence he painted upon panel two pictures in diſtemper; and for the church of San Giovanni ſeveral, which were deſtroyed when the walls were beaten down in the war of 1529. He executed other works at Cortona and Peruggia, Aſceſe and Arezzo, and painted ſeveral pictures in the church of St. Petronio in Bologna.

In the cathedral of Sienna is a Moſaic pavement, made from his drawings; which at this day is a ſpecimen of his abilities in deſign and compoſition, very honourable to his reputation. Some of his lateſt works were executed at Piſa, for the abbey church of St. Paul, taken from the Old and New Teſtament; and in one of theſe, repreſenting Noah's ark, he introduced his own portrait, which is the only portrait known of him, and is the ſame Vaſari introduced into the ſecond edition of his "Lives of the Painters."

Buffalmacco enjoyed conſiderable reputation, nor was the age wanting, in affording him opportunity to exert his talents; yet, from the following anecdote, he appears occaſionally to have worked at a very low price. Vaſari has recorded, that he painted a whole length figure of St. Chriſtopher, 12 braccia in height, nearly 23 feet, for 8 florins; and this fact is preſerved for the ſake of a whimſical circumſtance that attended the execution of it. The picture was ordered by a countryman, and was to occupy a wall in a church at Florence; when Buffalmacco went to paint, he found the wall only 9 braccia in height: that his employer, therefore, might have his meaſure, he painted St. Chriſtopher lying upon his back; but unfortunately even in this poſition, the wall did not admit of his whole length; he then turned up the legs perpendicular to the body, which was ſo exceedingly ridiculous, that when the countryman came to ſee his ſaint, he flew in a violent paſſion, and demanded his money, declaring that he was both cheated and inſulted, but the painter inſiſted that he had executed the commiſſion with the ſtricteſt fidelity, and therefore could neither agree with him, nor comply with his requeſt: upon which the countryman brought an action againſt him, and in the reſult was not more ſucceſsful.

This propenſity to make merry with life, made Buffalmacco regardleſs of the means by which its decline is ſupported; and at the advanced age of 78 years he died in extreme poverty and diſtreſs, ſupported in his laſt illneſs by the charity of an hoſpital, and buried by the company of the Miſericordia. Vaſari has written his life in 13 quarto pages, containing little more than general commendation and whimſical anecdotes connected with the exerciſe of his profeſſion.

BUONAROTI. See Angelo.

BUON-CONVENTO, in *Geography*. See Bonconvento.

BUONHABITACULO, a town of Naples; 8 miles N. of Policaſtro.

BUONTALENTI, Bernardo, called Girandole, in *Biography*, a painter of hiſtory and protrait in miniature, acquired correctneſs of deſign, and the knowledge of colouring, from Salvati, Bronzino, and Vaſari, and the art of miniature-painting from Julio Clovio. His works were much admired for the beauty of the colouring, and for a certain dignity of expreſſion in his Madonnas, as well as in his portraits. Beſides his merit as a painter, he was much approved as a ſtatuary and an architect. He was born at Florence in 1547, and died in 1608. Pilkington.

BUONVICINO, in *Geography*, a town of Naples, in the province of Calabria Citra; 11 miles S.E. of Scalea.

BUOY, a ſmall iſland on the eaſt coaſt of Newfoundland, between Ferryland head and harbour. See Broyle.

Buoy, in *Sea Language*, a body floating in water, to ſhew either the ſituation of a ſhip's anchor, or a danger, as ſands, ſhoals, &c. that it may be avoided. Buoys are of various forms, and conſtructed of buoyant materials, as wood, cork, &c. The names of the principal kinds of buoys are *can*, *caſk*, or *cable*, *nun*, and *wooden* buoys.

A *can-buoy* is made in the form of a cone. This kind is particularly employed in pointing out the extremities or ſides of any dangerous bank, ſand, &c. A buoy for this purpoſe is, therefore, large, that it may be ſeen at ſome conſiderable diſtance, and is faſtened to an anchor, ſunk in a proper ſituation, to point out the danger. When there are ſeveral buoys on the ſame ſand or ſhoal, they are generally painted of different colours, to prevent miſtake, as black, white, and red; this laſt colour is that which is beſt perceived, for a white buoy is not eaſily obſerved in broken water, and in many caſes a black painted buoy is very indiſtinct. In going through a narrow channel, in place of having buoys on one ſide only, there are ſometimes buoys on one ſide and beacons on the other; but as theſe laſt are more eaſily broke down by the violence of the waves, buoys may, therefore, be placed on each ſide; and to prevent miſtake, thoſe on the one ſide ſhould be can-buoys, and caſk-buoys on the other ſide. For this purpoſe it has been propoſed, in going in to all ports, to have can-buoys on the ſtarboard hand, and caſk-buoys placed on the larboard hand; which varieties, experience has ſhewn, may be perceived at a conſiderable diſtance. For the can-buoy, in conſequence of its broad heavy end, ſwims chiefly on its ſide; while the caſk-buoy, being much narrower and lighter at this upper end, ſwims more upright, and higher out of the water.

Caſk-buoys are any common caſks uſed for buoys. When caſks are employed to float, or buoy up the cable in different places to prevent it from being injured by rocks, &c. at the bottom, they are called *cable buoys*.

Nun-buoys are in form of the middle fruſtum of two cones, abutting upon a common baſe, being caſks, which are large in the middle, and tapering greatly towards each end.

Wooden-buoys are ſolid pieces of timber, being in form either of a cylinder, or nun-buoy. They are furniſhed with one or two holes, in which to fix a ſhort piece of rope, whoſe two ends being ſpliced together, make a ſort of circle or ring called a *ſtrop*. Theſe ſeveral buoys are repreſented in the *Plates of ſhips*.

Buoy *rope*, the rope that connects the buoy with the anchor. The length of this rope ſhould be very little more than equal to the depth of the water where the anchor is to lie, that the buoy may thereby float, as nearly as poſſible, immediately above the anchor, and conſequently point out its ſituation. The buoy rope is uſeful in weighing the anchor, either by means of a boat, or when the cable is broke or run out; and, therefore, it ſhould always be of a ſufficient ſtrength for this purpoſe, otherwiſe the anchor may be loſt. See *Plate of ſhips*.

Buoy, *Slings of the*, the ropes which are faſtened about it, and by which it is hung. They are curiouſly ſpliced round the buoy, ſomewhat reſembling the braces of a drum.

Buoy, *to ſtream the*, is to let it fall from the ſhip's ſide into the water. This is always done before the anchor is let go, that it may not be retarded by the buoy rope, in its deſcent to the bottom.

Buoy *of the Nore*, is ſituated about N.E. from Sheerneſs fort, on the N.W. point of the iſle of Sheppey, the eaſt entrance into Chatham river, or the Medway: and it is at the extreme point of a ſand, which runs E.N.E. from the iſland of Grain, or weſt entrance of the Medway.

BUOYANT, denotes a thing floating, or apt to float.

BUPALUS, in *Biography*, a celebrated ſculptor, deſcended from a line of anceſtors of the ſame profeſſion, was a native of Chios, and flouriſhed in the 60th olympiad, or 540 years B.C. His brother *Athenis* was alſo of the ſame profeſſion. They worked only in the white marble of the iſle of Paros, and executed ſeveral ſtatues at Rome. They were contemporaries with *Hipponax*, a poet of a deformed and contemptible figure, whom, for their diverſion.

they repreſented under a ridiculous form. The poet revenged himſelf by writing againſt them a ſharp ſatire, which, as ſome ſay, cauſed them to hang themſelves. But Pliny ſays, on the contrary, that after Hipponax had taken his revenge, they made ſeveral very fine ſtatues, and particularly one of a Diana at Chios, which was placed at a great height, and exhibited a frowning countenance to thoſe who entered, and a pleaſant one to thoſe that departed. Pauſanias (l. iv. c. 30. p. 355. and l. ix. c. 35. p. 781. ed. Kuhnii) mentions Bupalus as a good architect as well as ſculptor.

BUPARIA, in *Entomology*, a ſpecies of PIMELIA of the winged kind; black, and glabrous; thorax lunated; jaws ſtrong, toothed, and as long as the head. *Gmel.*

Obſ. This is deſcribed by Forſter under the name of TENEBRIO BUPARIUS. It inhabits Spain.

BUPARITI, in *Botany*, Rheed. Mal. See HIBISCUS *populeus*.

BUPHAGA, in *Ornithology*, a genus in the order PICÆ, of which only a ſingle ſpecies has been hitherto diſcovered; and which, being a native of Africa, has received the name of Africana. The generic definition conſiſts in having the bill ſtraight, and ſomewhat quadrangular; mandibles gibbous, entire, and more gibbous on the outſide. Legs formed for walking.

Linnæus and Briſſon have given this bird the name of Buphaga, and Buffon that of Pic-bœuf, from whence the epithet of beef-eater is derived. French authors of the preſent day write it *Picque Bœuf.* All theſe names refer to a peculiarity of the African Buphaga, which ſometimes alights upon the backs of the cattle, and picks holes in them, in order to get at the larvæ of the *oeſtri*, or gad-flies, depoſited by thoſe tormenting creatures in the fleſh, directly below the ſkin.

The ſpecies *Africana* is between eight and nine inches in length. The prevailing colour of the plumage above is brown; beneath, and alſo the rump, yellowiſh. Bill ſcarcely an inch in length. Tail cuneated, and conſiſting of pointed feathers. Legs and claws black.

BUPHAGIUM, in *Ancient Geography*, a town of Arcadia, ſituate in the weſtern part of it, ſouth of Telphuſa. It derived its name from that of the hero Buphagus, the ſon of Japetus and Thornax, who was ſlain on the mountain Pholoe, for daring to offer inſult to Diana. Pauſanias, l. viii. c. 27. p. 658. Ed. Kuhnii.

BUPHAGUS, a river of Arcadia, which took its riſe near Buphagium, and diſcharged itſelf in the river Alpheus. Pauſanias.

BUPHONIA, from βȣς, *ox*, and φωνη, *ſlaughter*, in *Antiquity*, an Athenian feaſt or ceremony, denominated from a bullock ſlain therein with quaint formalities.

The buphonia was properly a part or appendage of the ceremony of DIIPOLIA.

For the origin of the buphonia we are told it was forbidden by the laws of Attica to kill an ox: but it once happened, at the feaſt of the *diipolia*, that an ox eat the corn, others ſay the cakes, which had been dreſſed for the ſacrifice. Thaulon the prieſt enraged at this, preſently killed him, and fled for it. On which the Athenians, fearing the reſentment of the gods, and feigning themſelves ignorant who had committed the fact, brought the bloody axe before the judges, where it was ſolemnly arraigned, tried, found guilty, and condemned. And, in memory of this event, a feaſt was inſtituted under the denomination of *buphonia*; in which it was ſtill cuſtomary for the prieſt to fly, and judgment to be given about the ſlaughter of the ox.

BUPHTHALMUM, in *Botany*, (from βους, bull, and φθαλμος, eye) Linn. gen. 977. Schreb. 1321. Juſſ. 186. Gært. 1006. Vent. vol. ii. 521. (Aſteriſcus and Aſteroides, Tournef.) La Marck Illuſt. Pl. 682. Claſs and order, *ſyngeneſia polygamia ſuperflua.* Nat. Ord. *Compoſitæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Char. *Cal. common*, imbricated with a double or triple ſeries of ſcales, in ſome ſpecies all equal and ſhorter than the ray of the flower; in others, the outer ſeries longer and exceeding the ray. *Cor.* compound, radiate; florets of the diſc numerous, funnel-ſhaped, with a five-parted rather ſpreading border; of the ray more than ten, ligulate, ſpreading, three-toothed. *Stam.* filaments five, capillary, very ſhort; anthers cylindrical, united into a tube. *Piſt.* of the diſc. Germ ovate, compreſſed; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma, thickiſh, either ſimple or bifid. Of the ray, germ ancipital; ſtyle thread-ſhaped; ſtigmas two, oblong. *Peric.* common, the calyx unchanged. *Seeds* of the diſc oblong; of the ray compreſſed, with ſharp edges; both crowned either with a toothed, or gaſhed, and almoſt leafy margin. *Receptacle* chaffy, convex.

Eſſ. Char. *Receptacle* chaffy. *Seeds* crowned with a toothed or gaſhed margin; with ſharp edges, particularly in the ray.

Species 1. B. *fruteſcens.* Linn. "Leaves oppoſite, lanceolate; petioles two-toothed; ſtem ſhrubby." A ſmall ſhrub about four feet high. *Stem* ſtraight, jointed. *Bark* greyiſh. *Branches* buſhy. *Leaves* oppoſite, oblong, broader towards their ſummit, narrowed into a petiole towards their baſe, connate like thoſe of Lychnis, glaucous; covered with a very cloſe, ſhort down, and marked with three longitudinal nerves. *Flowers* yellow, terminal, ſolitary, peduncled. *Calyx-ſcales* oval, a little tomentous. *Semi florets* rather broad, ſhort, and toothed. *Chaff* terminated by a ſharp point. La Marck, from a living plant. A native of the Weſt-Indies and Virginia. Cultivated in the royal garden at Hampton Court in 1699. 2. B. *Peruvianum.* La Marck Encyc. "Leaves linear-lanceolate, ſilky, obſcurely toothed about the middle; ſtem ſhrubby." Similar to the preceding but ſmaller, and of a more ſilvery appearance. *Leaves* narrower, and without teeth at their baſe. *Flowers* yellow, terminal, ſolitary. *Calyx*-ſcales ovate; ſemi-florets ſcarcely extending beyond the calyx. La Marck, from a living plant. Found by Dombey in Peru. 3. B. *arboreſcens.* Dill. Elt. Tab. 38. fig. 43. Plum. ſp. tab. 106. f. 2. "Leaves oppoſite, lanceolate, without teeth, thick, green." La Marck. An ever-green ſhrub. *Stems* two or three feet high. *Leaves* oppoſite, connate, lanceolate, narrowed at their baſe, very entire, entirely green and gloſſy. *Flowers* yellow, terminal, ſolitary; ſemi-florets ſhort; calyx-ſcales, large and ſmooth. La Marck, from a living plant. 4. B. *repens.* Linn. Hort. Cliſ. 44 (Verbeſina mutica ſpec. plant.? but not Chryſanthemum humile of Plumier) "Leaves oppoſite, ſeſſile, three-lobed; ſtem creeping." *Stem* jointed, producing at its joints ſmall fibrous roots, and ſtraight, leafy, flower bearing branches. *Leaves* oppoſite, ſeſſile, broad toward their ſummit, irregularly toothed, with three ſharp-pointed lobes. *Flowers* yellow, ſolitary, terminal. La Marck. Native of South America. 5. B. *durum.* Linn. "Leaves alternate, lanceolate, very entire; ſtem ſomewhat ſhrubby." *Root* perennial. *Stem* a little woody, branched near the top. *Leaves* alternate, oblong, entire, narrowed at their baſe, a little broader towards the ſummit, and terminated by a ſhort point. *Flowers* terminal, ſolitary. *Calyx*-leaves rather large. La Marck. A native of the Cape of Good Hope. 6. B. *ſericeum.* Linn. Jun. Sup. "Leaves oppoſite, crowded, ſpatulate oblong, ſilky; calyx-ſcales briſtle-ſhaped, ſhaggy; ſtem woody." *Branches* thick, woody, covered with the marks of former leaves.

Leaves on the ſmaller branches, very entire, clothed with a white, cloſe, and very ſoft pile. *Flowers* terminal, large, yellow. *Lower calyx-ſcales* longer, linear. Linn. Jun. Gathered by Maſſon in the iſland of Teneriffe. 7. B. *ſpecioſiſſimum*. Linn. Mant. "Leaves alternate, embracing the ſtem, ovate, naked, ſerrated, ſomewhat ciliate; ſtem one-flowered." *Root* perennial, ſpindle-ſhaped. *Stem* two feet high, ſmooth, and even, marked with very fine white lines. *Leaves* alternate, acute, ſomewhat heart-ſhaped, compact, reticulated with veins; petioles dilated at the baſe, ſomewhat membranaceous. *Calyx common* imbricated with obtuſe, ovate, large leaflets. *Florets* of the ray folded, two or three toothed, yellow; of the diſc four-parted, erect, pedicelled. *Stamens* of the diſc four, brown, without a germ. *Germ* of the ray ovate. *Seed* of the diſc none; of the ray ovate, membranaceous. *Receptacle* hemiſpherical. Zoega, quoted by Linnæus. Linnæus places this ſpecies under Buphthalmum, but doubts whether it is not rather a Silphium. From Zoega's deſcription it clearly belongs to the order polygamia neceſſaria. A native of the mountains about Brixen in the Tyrol. 8. B. *grandiflorum*. Linn. La Marck, Illuſt. Pl. 682. fig. 1. "Leaves alternate, lanceolate, ſomewhat toothed, ſmooth, calyxes naked, ſtem herbaceous." *Root* perennial. *Stems* numerous, growing in tufts, generally ſimple, about a foot and a half high. *Leaves* alternate, linear-lanceolate, ſharp-pointed, ſmooth, ſlightly toothed. *Flowers* yellow, large, about two inches in diameter, terminal. *Calyx* rather ſhort; compoſed of two rows of narrow-pointed leaflets. La Marck, from a living plant. 9. B. *ſalicifolium*. Linn. (Gært. Tab. 169. f. 1. copied by La Marck Ill. Pl. 682.) "Leaves alternate, lanceolate, ſomewhat ſerrated, pubeſcent, calyxes naked: ſtem herbaceous." *Root* perennial. *Stem* a foot and a half high, ſtraight, cylindrical, pubeſcent, reddiſh, divided at its ſummit into two or three ſhort branches. *Leaves* embracing the ſtem. *Flowers* large, yellow, terminal, ſolitary, ſemi-florets very narrow. La Marck, from a dried ſpecimen. *Receptacle* ſlightly convex; chaff the length of the calyx, broader upwards, keeled, toothed, the keel extended into a ſhort, flexible arm. *Seeds of the diſc* ſmaller, oblong, narrow, three or four-cornered, a little compreſſed, ſtraight; *of the ray*, larger, incurved, three-ſided, drawn out at the ſides into a kind of wing; in both, truncate at the top, and crowned with a toothed rim. The rim of the ſeeds of the diſc is ſometimes ſo deeply gaſhed, as to appear compoſed of ſeveral chaffy briſtle-ſhaped leaflets. Gært. A native of the South of France, Auſtria, Switzerland, and Luſatia, allied to the preceding, to which Gouan joins it, but differs in being abundantly pubeſcent, and having narrower ſemi-florets. 10. B. *helianthoides*. Linn. (G. Heretier. Stirp. nov. Tab. 45. Helianthus lævis. Lin. ſpec. 1278. Silphium Solidaginoides. Linn. ſpec. 1302. Rudbeckia oppoſitifolia, Linn. ſpec. 1280.) "Leaves oppoſite, ovate, ſerrated, triply-nerved; calyxes leafy; ſtem herbaceous." *Root* perennial, whitiſh, branched, fragrant. *Stems* ſeveral, two yards high, upright, branched at the top, naked at the baſe, round, the thickneſs of a quill, of a ſea green colour; branches oppoſite, ſtiff like the ſtem. *Leaves* remote, acuminate, ſerrated about the middle, decurrent, veined, and wrinkled, flat, reclining, four inches long, two and a half broad. *Petioles* ſpreading, embracing the ſtem with a kind of ring, round on one ſide, channelled on the other, edged at the top by the leaf running along them. *Flowers* terminating, yellow, from two to three inches broad; peduncles commonly three, accompanying the uppermoſt leaves, ſtiff, very long, one-flowered, obſcurely angular, thickened at the top, fiſtulous, ſometimes with one or two linear ſharp bractes. *Common calyx* concave, ſpreading, pubeſcent; ſcales lanceolate, acute, a little ſerrated; thoſe of the inner row ſpreading, and reflexed at the tip: thoſe of the outer row few, twice the length of the other, and a little hanging down. *Florets* in the diſc numerous, with a ſharp, revolute border; in the ray about twelve, lanceolate, retuſe, two-furrowed above, two-nerved beneath, ſpreading very wide, twice or three times the length of the calyx. *Germ* in the diſc oblong, four-cornered and truncate; in the ray three-cornered. *Seeds* without any pappus or down, except the rim, which is ſcarcely thickened. *Receptacle* conical; chaff membranaceous, linear, acute, channelled-concave. This plant has the generic character of buphthalmum, the calyx of ſilphium or rudbeckia, and the habit of helianthus. Hence it has inadvertently been given by Linnæus under four different names. L'Heretier. A native of North America, whence it was ſent by Cateſby to the botanic garden at Chelſea, but is ſaid by Forſter to be found wild every where within the tropics. La Marck deſcribes a plant under the ſame ſpecific name, brought from South America, cultivated in the royal garden at Paris, which does not correſpond with the above deſcription, and with ſome doubt whether it be that intended by Linnæus. Its *ſtems* are herbaceous, feeble, not much more than a foot high, growing in looſe tufts. Its *leaves* petioled, generally oppoſite, ovate, a little pointed, obtuſely dentate, green, almoſt ſmooth, and ſcarcely an inch broad. *Flowers* yellow, rather ſmall, ſolitary, peduncled and terminal. *Calyx* of two rows of oblong ſcales, thoſe in one row not longer than thoſe in the other. The juice of the plant is a little cauſtic. 11. B. *ſpinoſum*, Linn. (La Marck, Pl. 682. *fig.* 2.) "Calyxes acutely leaved; leaves alternate, lanceolate, embracing the ſtem, very entire; ſtem herbaceous." *Root* annual. *Stem* a foot and half high, ſtiff, hairy, with two or three alternate branches at the top. *Root-leaves* long, ſpreading, broader and almoſt obtuſe at their ſummit, narrowed at their baſe. *Stem leaves* lanceolate, hairy. *External calyx-leaves* very long, three-nerved, ending in a ſpine, ſpread open immediately under the flower like the points of a ſtar. *Flowers* yellow, ſolitary, terminal; ſemi-florets very narrow. La Marck, from a living plant. A native of Languedoc, Spain, and Italy. 12. B. *aquaticum*. Linn. (Gært. Tab. 169. copied in La Marck, Illuſt. Pl. 682. *fig.* 4.) "Calyxes obtuſely-leaved, ſeſſile, axillary; leaves alternate, oblong, obtuſe; ſtem herbaceous." *Root* annual, white, fibrous. *Stem* about a foot high, much branched, cylindrical, pubeſcent. *Leaves* alternate, ſeſſile, oblong, obtuſe, hairy. *Flowers* yellow, rather ſmall; ſome ſeſſile and axillary, others terminating; ſemi-florets broader and ſhorter than thoſe of the preceding ſpecies. *Outer calyx leaves* obtuſe, ſoft, forming a kind of involucre to the flower. La Marck, from a living plant. *Calyx* leafy at the baſe. *Seeds* compreſſed, bay coloured, hiſpid, with whitiſh briſtles, nearly uniform; thoſe of the diſc ſmaller, ovate, acuminate downwards; thoſe of the ray larger, triangular-wedge-ſhaped, much compreſſed at the ſides, and almoſt winged; both of them crowned with a many-leaved pappus, the leaflets of which are membranaceous, acuminate, ciliate-toothed, half the length of the ſeed. Gært. A native of the ſouth of France, Portugal, and the Iſle of Candia. 13. B. *maritimum*. Linn. (La Marck, Pl. 682. *fig.* 5.) "Calyxes obtuſely leafy, peduncled; leaves alternate, ſpatula-ſhaped; ſtem herbaceous." *Root* perennial. *Stems* numerous, ſix or ſeven inches high, hairy, branched. *Leaves* long, obtuſe, very narrow at their baſe, hairy. *Flowers* yellow, rather large, ſolitary, terminal. *External calyx-leaves* reſembling thoſe of the ſtem. Native of Sicily and the ſouthern parts of France. La Marck. 14. B. *oleraceum*, Martyn's Miller. "Calycine leaflets acute, connected laterally; leaves oppoſite, lanceolate,

late, curved back." *Stem* herbaceous, two feet high, upright, round, whitiſh, ſmooth, branched. *Leaves* linear-lanceolate, unequally toothed, ſmooth, juicy, thick, aſh-coloured. *Flower* large, ſolitary. *Calyx* hemiſpherical, with ſharp leaflets, connected by a lateral membrane. Diſc of the *corolla* flat, with yellow florets; ray wide, ſpreading, with many white trifid florets. *Receptacle* flattiſh, with very ſmall chaff; crown of the ſeeds margined. *Stigma* in the florets of the diſc ſimple. Lour. Cochin. It is an odorous plant, and cultivated in the gardens of China as a pot-herb. Forſter in Flor. Auſtral. names two other ſpecies; B. *uniflorum*, found in Norfolk Iſland; and B. *procumbens*, found in the Friendly Iſlands. *Obſ.* Juſſieu doubts whether the fruteſcent ſpecies, with oppoſite leaves, ſhould be placed in the ſame genus with thoſe that are herbaceous and have alternate leaves. And Gærtner is of opinion, that if the ſeed in all the Aſteriſci of Tournefort, be not merely margined, but leafy, they ought to form a ſeparate genus.

Propagation and Culture. The firſt two ſpecies can be propagated in this country, only by cuttings, which ſhould be taken off in July when the plants have for ſome time been expoſed to the open air; planted in ſmall pots filled with light loamy earth, and plunged into a hot-bed of a very gentle warmth; ſhaded from the heat of the ſun, and occaſionally refreſhed with a ſmall quantity of water. In about ſix weeks they may be gradually inured to the open air, and ſoon after ſhould be tranſplanted into freſh pots: when they have taken root, they may remain in a ſheltered ſituation till the middle of October, and ſhould then be removed into the green-houſe. The firſt ſort is hardier than the other. The ſeeds of *ſpinoſum* and *aquaticum* may be ſown on open borders, either in the beginning of April, or, which is better, in Autumn, and will require no other care. The *maritimum* is eaſily propagated by ſlips during the ſummer ſeaſon, and requires the ſame treatment as the firſt and ſecond, but will thrive better in a common frame, ſcreened from froſt, than in a green-houſe. The *ſalicifolium*, *grandiflorum*, and *helianthoides*, may be propagated by parting the roots towards the end of October.

Buphthalmum *canarienſe leucanthemum*, Pluk. See Chrysanthemum *fruteſcens*.

Buphthalmum *lanuginoſum*, C. Bauh. See Anacyclus *valentinus*.

Buphthalmum *cotulæ folio*, and *flore luteo*, 2. 3. C. Bauh.; *tenuifolium*, J. Bauh.; *creticum*, Breyn.; *alterum penæ*, Dalch.; *flore purpuraſcente*, Cam.; and *narbonenſe*, Œus. See Anthemis *valentina*.

Buphthalmum, Linn. Hort. Clif. 414. Flor. Suec. 698. *alpinum triumf.* See Anthemis *tinctoria*.

Buphthalmum, Linn. Hort. Clif. 415. See Amellus *lychnitis*.

Buphthalmum, Linn. Sp. Pl. Ed. 2. See Oedera *prolifera*.

Buphthalmum *hirſutum*, Brown Jam. 321. See Silphium *trilobatum*.

BUPLEURARIA, in *Entomology*, a ſpecies of Phalena, (Geometra.) The wings are dentated, green, with a white ſtreak, and a ſmaller one of the ſame colour; margin dotted with brown. Fabr.

This inhabits Europe. Knock deſcribes it under the name of *Phalæna ſeſquiſtriata*.

BUPLEURIFOLIA, in *Botany*, Pluk. See Corymbium *ſcabrum*.

BUPLEURIOIDES, Walth. See Phyllis *nobla*.

BUPLEURUM, (from βους and πλευρον, bovis coſta, the rib or ſide of an ox, alluding, as explained by profeſſor Martyn, to a ſuppoſed ill quality of burſting kine that feed upon it; but this explanation is better ſuited to the etymology of βουπρηστις, from βους and πρηθω, to inflame, a name given by the Greeks, not only to an inſect of the cantharis kind, but alſo to a plant noxious to cattle, which has been ſuppoſed to be the ſame with the bupleurum of Nicander, Pliny, and other ancient writers. Ventenat, with greater probability, is of opinion, that the name bupleurum alludes to the ſtiffneſs, (roideur) of the leaves of ſeveral ſpecies of this genus. The ſame derivation was intimated long ago by Dodonæus, who, ſpeaking of the probable identity of the plant, now called bupleurum, with the ancient one, ſays, "nec peſſime quadrare nomenclaturæ et effigiaturæ videtur: foliis namque longis—multis ſtriis liriſve rigidis, quaſi coſtas in foliis ſingulis effigiantibus, et laterum modo incluſis, ut de heptapleuro loquitur Plinius.)" Linn. gen. 328, Schr. 460. Gært. 144. Juſſ. 224. Willd. 523.

Gen. Ch. *Cal.* Umbel univerſal, with fewer than ten rays; partial with ſcarcely ten, erect-expanding. *Involucre* univerſal, either of many leaves, or from three to five, or none; partial of ſeveral broad leaves, either diſtinct or all united at the bottom; *perianth* proper, obſolete. *Cor.* univerſal, uniform; florets all fertile, proper, petals five, involute, entire, very ſhort. *Stam.* five, ſimple, anthers roundiſh. *Piſt. Germ* inferior. *Styles* two, reflexed, ſmall; *ſtigmas* very ſmall. *Peric.* none. *Fruit* roundiſh, compreſſed, ſplitting in two. *Seeds* two, ovate-oblong, convex on one ſide, flat on the other. *Obſ.* In moſt of the ſpecies, the partial involucres are ſpecious, often longer than the corolla.

Eſſen. Char. *Leaves* of the partial involucre broad, ſpreading. *Fruit* ovate, gibbous, ſmall, not crowned at the top.

Spec. * *Herbaceous.* 1. B. *rotundifolium.* Linn. Hudſ. 111. With. 267. Smith 124. (Perfoliata C. Bauh. &c.) Gært. Tab. 22. f. 7. La Marck, Illuſt. Pl. 189. Eng. Bot. 99. Thorough-wax. "Univerſal involucres none, leaves perfoliate." Linn. *Root* annual, ſmall, and fibrous; whole plant rigid and ſmooth. *Stem* erect, alternately branched, round, leafy, perfoliate. *Leaves* alternate, ovate, acute, very entire, ſomewhat glaucous, nerved. *Umbels* axillary and terminal, ſolitary, on long peduncles, ſix or ſeven rayed, entirely deſtitute of an univerſal involucre; little umbels of about eight flowers; partial involucres of five, ovate, acute, unequal leaves, longer than the flower. *Flowers* yellow, on ſhort peduncles. Dr. Smith, and La-Marck. *Fruit* ſmall, ovate, ſtriated, gibbous, black. *Seeds* ovate-oblong, gibbous, terminated at the top by a very narrow, reddiſh brown diſc; marked on the convex ſide with thirteen elevated, linear ſtriæ or ſtreaks; on the flat ſide with a ſimple furrow. Gært. It derives its Engliſh name from its perfoliate leaves, or, as profeſſor Martyn accurately expreſſes it, from the ſingular circumſtance of the ſtalk *waxing* or growing *through* the leaf, by which it may be diſtinguiſhed from all our other indigenous plants. Like the ſanicle, it has the reputation of being a vulnerary; but this, ſays Dr. Smith, (Eng. Bot.) is a quality which no medicine can have, any otherwiſe than as a tonic, ſtrengthening the conſtitution; nor can any external application be ſpecifically healing or conſolidating, or be uſeful in any other way than as a defence from the air. La Marck ſpeaks of it as an aſtringent, and ſays that it is uſed as a cataplaſm in umbilical ruptures; but in this caſe, its operation can be only mechanical. A native of moſt parts of Europe, chiefly on a calcareous ſoil, but not very common in England. Martyn intimates, that it is peculiar to the ſouthern counties, and ſays, that he has never obſerved it, except among wheat. We have occaſionally found it in the neighbourhood of Leeds, but always among beans. 2. B. *ſtellatum.*

Linn. (Tourn. 310. Ital. Helv. 77. Tab. 18.) " Leaves of the partial involucres united ; univerſal involucre of three leaves." *Root* perennial. *Stem* about a foot high, round, almoſt naked, often ſimple. *Root-leaves* very long, ſmooth and graſs like. *Univerſal umbel* looſe, of five or ſix rays. *Univerſal involucre* of one, two, or three lanceolate leaves. *Partial involucre* of one leaf, ſlightly cut at the edge into eight or nine ſegments, ſurrounding the flowers in the form of a cup, or baſin. La Marck and Martyn. A native of the Alps of Switzerland, and Dauphiné, introduced into England in 1775 by Dr. Pitcairn and Dr. Fothergill. 3. B. *petræum*, Linn. and Willd. " Partial involucres united ; univerſal involucre of five leaves." Linn. " Little involucres of about five united leaves ; univerſal involucre of five leaves ; ſtem leaves heart-ſhaped-lanceolate, embracing the ſtem ; radical leaves linear." Willd. Radical leaves linear, ſeſſile. *Leaves* of the univerſal involucre five, equal, rather broad ; of the partial involucres five, united as far as the middle, Linn. A native of the Alps of Switzerland. According to Villars this is only a variety of the preceding. 4. B. *graminifolium*, Willd. (B. petræum, Jacq. Collec. 1. p. 209. Icon. rar. 1. t. 56. Vill. delph. 2. p. 576. t. 14. Allion. Auct. p. 24. La Marck, Flor. Franc. 990. 10. Encyc. vol. i. 517. Martyn in Miller; deſcription but not the ſpecific character nor all the ſynonyms. Sedum petræum bupleuri folio, Pon. bald. 247. B. alpinum, Seguier Veron. 2. p. 15. 3. p. 221.) " Root-leaves long, very narrow, graſs-like ; partial involucres diſtinct, general one of about five leaves." La Marck. *Root* perennial, long, thick toward the top. *Root-leaves* numerous, five or ſix inches long. *Stem* about eight inches high, round, ſimple and leafleſs, or having a ſingle branch near the top, with one leaf at the baſe, and an umbel of flowers at the end, ſmaller than that which terminates the ſtem. *Umbel* looſe, of ſix or ſeven rays. *Univerſal involucre* of three or five leaves ; *partial involucre* of five, ſix or ſeven ſmall, lanceolate, nerved, very diſtinct leaves. A native of the mountains of Dauphiny, Provence, and Switzerland. 5. B. *anguloſum*, Linn. (B. ranunculoides & La Marck.) " Partial involucre five-leaved, orbiculate, general involucre three-leaved, ovate : leaves embracing the ſtem, heart-ſhaped-lanceolate." Nearly allied to B. ſtellatum, but the leaves of the partial involucre are always diſtinct : it varies in having its leaves very narrow and ſtriated, or lanceolate, and not ſtriated. Linn. The former variety is a native of Switzerland, the latter, of the Pyrenées. 6. B. *pyrenaicum*, Willd. (B. pyrenæum, Gouan and La Marck.) " Partial involucres roundiſh, emarginate, united ; univerſal three-leaved, cut at the baſe ; leaves lanceolate, heart-ſhaped, embracing the ſtem." Willd. It differs from B. anguloſum in having much broader, lanceolate, acute leaves, the radical ones narrowed at the baſe ; and in the rays of the umbel being ſhorter and fewer ; as well as in the peculiar ſhape of the general and partial involucres expreſſed in the ſpecific character : from B. ſtellatum which it reſembles in habit, in its broader leaves, thoſe of the ſtem being more numerous and heart-ſhaped at the baſe ; and in the number of the diviſions of the partial involucres. Willd. A native of the Pyreneés. 7. B. *longifolium*, Linn. " Partial involucres five-leaved, ovate ; general one of about five leaves ; leaves embracing the ſtem." *Root* perennial. *Root-leaves* narrowed into a petiole at their baſe, and broad towards their ſummit. *Stem-leaves* ovate, acuminate. *Umbel* terminal, compoſed of from ſix to nine rays. It reſembles B. rotundifolium, but differs in its perennial root and longer leaves. Native of mountains in Germany, Switzerland, &c. 8. B. *falcatum*, Linn. Hare's-ear. " Partial involucres five-leaved, acute ; general, commonly five-leaved ; leaves lanceolate ; ſtem zig zag." *Root* perennial. *Stem* upright, about a foot high ; ſlender, round, ſlightly zigzag, much branched, ſometimes tinged with purple. *Leaves* frequently ſickle ſhaped ; thoſe next the root narrowed at their baſe into petioles, ovate-lanceolate, bright green, ſmooth, a little nerved ; the others almoſt linear. *Univerſal umbel* looſe, ſmall, terminal, of about ſeven rays ; *partial*, of ten or twelve. *Univerſal involucre* of from two to five, very unequal, lanceolate, ſharp leaves ; *partial*, of five lanceolate, regular leaves, the length of the partial umbel. A native of dry rocky ſoil in the ſouth of Europe. It has the character of being a vulnerary and febrifuge. La Marck and Martyn. 9. B. *caricifolium*, Willd. (B. graminium, Villars) " Partial involucres, five-leaved, ſharp pointed ; univerſal one-leaved, lanceolate ; leaves linear, attenuated at the baſe." *Root* perennial. *Radical leaves* very long, acute ; *ſtem-leaves*, the lower ones a little attenuated, the reſt ſeſſile. *Umbel* of five or ſix unequal rays longer than the involucre. *Partial involucre* five-leaved, lanceolate, ſharp-pointed. Willd. From a dried ſpecimen. A native of the ſouth of France and Switzerland. 10. B. *odontides*, Linn. " Partial involucres, five-leaved, acute ; univerſal, three-leaved ; the central floret higher ; branches divaricated." Linn. " Both involucres five-leaved, ſtellate ; leaflets lanceolate, three-nerved ; rays of the umbel very unequal." La Marck. *Root* annual. *Stem* from three to eight inches high, ſomewhat angular, much branched. *Leaves* linear-lanceolate, narrow, ſmooth, ſeſſile. *Involucres* awned, concealing the umbels. La Marck and Martyn. *Seeds* only a quarter the ſize of thoſe of B. rotundifolium, not ſtriated, either ſlightly wrinkled or entirely plain, ovate-cylindrical, brown or blackiſh. Gærtner. A native of the ſouth of Europe. 11. B. *ſemicompoſitum* Linn. " Umbels both compound and ſimple." *Root* annual. *Stem* ſix inches high, furniſhed from its baſe with alternate, rather divaricated branches. *Leaves* oblong, narrowed into petioles at their baſe, broad and obtuſe at their ſummit, and ending in a particular ſmall point. *Simple umbels* peduncled ; *compound*, almoſt ſeſſile. Allied to the preceding, but differing from it conſtantly in ſuch remarkable characters, that it ought to be regarded as more than a variety. La Marck. A native of the ſouth of Europe. 12 B. *ranunculoides*, Linn. " Partial involucres, five-leaved, longer ; univerſal, three-leaved ; ſtem-leaves lanceolate." *Root* perennial, creeping. *Stem* about eight inches high, ſimple. *Leaves* graſs-like, ſtiff. *Umbel* unequal. *Univerſal involucre* ovate, acute, ſhort ; *partial*, equal, obovate, acute. *Partial umbels* ſmall, the length of the involucre. La Marck follows Haller in uniting this ſpecies with the anguloſum. Gouan adds the petræum, to which Villars objects as far as the ſedum petræum bupleuri folio, gathered by Pona on Mount Baldo is concerned, the graminifolium of Vake and this dictionary ; but Villars himſelf ſuſpects that the anguloſum, and his graminium, which is Willdenow's and our caricifolium, may be only varieties of ranunculoides. A native of Switzerland and the Pyrenées. 13. B. *rigidum*, Linn. " Stem dichotomous, almoſt naked ; involucres very ſmall, acute." Linn. " Stem much branched, panicled, almoſt naked ; lower leaves petioled, nerved, rigid ; umbels generally of three rays." La Marck. *Root* perennial. *Stem* ſlender, nearly two feet high. *Lower leaves* lanceolate-elliptic, with ſtrong white nerves ; *upper-leaves* very ſmall and diſtant. *Umbels* terminal, of two, three, or four rays. *Univerſal involucre* of three awl-ſhaped, very ſhort leaves ; *partial*, of five. Linn. and La Marck. A native of the ſouth of France. 14. B. *tenuiſſimum*, Linn. " Slender thorough-wax, or leaſt hare's-ear." (Eng. Bot. 478.)

" Umbels ſimple, alternate, generally three-flowered; involucres of five awl-ſhaped leaves." D. Smith. " Terminal umbels compound; lateral, ſimple, with few flowers; involucres univerſal and partial, ſhort." La Marck. *Root* annual, tapering, but little branched. *Stem* about a foot high, zig-zag, ſlender, ſtiff, ſmooth, erect, with ſeveral alternate branches. *Leaves* alternate, lanceolate, narrow, pointed, entire, tapering at the baſe. *Umbels* axillary, nearly ſeſſile, ſolitary, generally three flowered; involucres awl ſhaped, longer than the flowers. Dr. Smith. *Terminating umbels* compound, of from three to five rays; with a general involucre of from three to five ſhort, pointed leaves; *lateral*, ſimple, and extremely ſmall. La Marck. Haller remarks that the umbels can ſcarcely be ſaid to be really compound. *Fruit* ſmall, ovate-oblong, tranſverſely thicker, rounded on each ſide, ſomewhat emarginate. *Seeds* pentagonal-priſmatic, marked on the convex ſide with three acute-angled and diſtant ribs; the intervals a little wrinkled, of a pale or aſh colour. A native of Germany, France, Italy, and England. It is found plentifully in ſalt water ditches on the coaſts of Norfolk, Suſſex, &c. and, as is aſſerted by Hudſon, more ſparingly inland, about Cambridge and Huntingdon; but profeſſor Martyn obſerves, that it has probably been overlooked in many other places; being a plant of little appearance and almoſt loſt among the graſs. 15. B. *baldenſe*, Willd. " Stem erect, branched; leaves linear; univerſal involucres of about four unequal leaves, ſhorter than the umbel; partial involucres five-leaved." *Root* perennial. *Radical leaves* linear, broader at the baſe. *Univerſal involucre* of three or four leaves, two larger than the others. A native of Croatia, Carniola, and mount Baldo. 16. B. *Gerardi*, Murray Syſt. 274. (B. junceum, Mœnch. Roth. Pollich. junceum and La Marck.) Ger. Prov. 233. Tab. 9. good. " Stem erect, much branched; leaves linear, acuminate; univerſal involucre five-leaved; partial, five-leaved, linear-awl-ſhaped, longer than the umbel." *Root* annual. *Stem* from ſix to nine inches high, ſlender, ſmooth, with ſtraight filiform branches. *Leaves* linear, graſs-like, claſping the ſtem, ending in a very ſhort point, marked with three fine nerves. *Umbels* on long peduncles, lateral and terminating. *Univerſal involucre* four or five-leaved, linear, awl-ſhaped, very unequal; *partial*, four or five-leaved, linear-ſetaceous, unequal, longer than the flowers. *Flowers* nearly ſeſſile. *Seeds* oblong, ſtriated, appearing as if cut off at the tip. A native of Provence and Auſtria. 17. B. *junceum*, Linn. β La Marck. " Stem erect, panicled; leaves linear; univerſal involucre three-leaved; partial, five-leaved." *Root* annual. *Stem* from two to three feet high, ſtraight, round, hollow within, branched in the upper part. *Umbels* ſmall; lateral ones ſimple, of one or two flowers; terminating ones compound, of two or three ſhort rays. *Univerſal involucre* of two or three leaves, awl-ſhaped and unequal; *partial*, of about four linear-awl-ſhaped leaves. A native of the ſouth of France, of Switzerland, Germany, and Italy. 18. B. *nudum*, Aiton. Kew. " Stem branched, without leaves; root-leaves decompound, plain, gaſhed; involucres univerſal and partial lanceolate-oblong." *Root* perennial. A native of the Cape of Good Hope. Introduced in 1778, by Dr. P. Ruſſel.

** Shrubby.*

19. B. *fruticoſum*, Linn. " Leaves lanceolate-obovate, very entire, ſeſſile." Willd. " Rather obtuſe." La Marck. An ever-green ſhrub, four or five feet high. *Stems* ſtraight, branched, buſhy; bark of the trunk greyiſh, of the branches, brown or purpliſh. *Leaves* alternate, oval-oblong, rather obtuſe, with a very ſmall point, coriaceous, ſmooth, of a glaucous colour. *Umbels* terminal. A native of the ſouth of France, Italy, and the Levant. 20. B. *arboreſcens*, Willd. " Leaves oblong, very entire, petioled." Thunb. Prod. 50. It differs from the preceding in having petioled leaves, very acutely, not bluntly, pointed at their ſummit; and umbels only half as large, on ſhort peduncles. 21. B. *coriaceum*, Martyn and Willd. Ait. Kew. l'Heret. Stirp. nov. (arboreſcens Jacq. Ic. Rar. 2. tab. 351. obliquum Vahl. Symb. gibraltericum, La Marck Encyc.) " Leaves lanceolate, attenuated on both ſides, very entire, ſeſſile. Willd. " Leaves lanceolate, coriaceous, oblique." Hort. Kew. *Root* perennial. *Stems* from three to four feet high, upright, ſparingly branched, round, annulated with the ſcars left by the fallen leaves. *Branches* alternate, upright, marked with lines, fiſtulous. *Leaves* alternate, approximating, long, acuminate, a little coriaceous, half embracing the ſtem, with a ſharp, reflexed point, and one whitiſh nerve, glaucous, permanent, five inches long and near an inch broad. *Umbels* of about fifteen rays, alternate; on a common peduncle terminating each branch, with a few leaves on its lower part, a foot and a half long, and not half the thickneſs of the branch from which it ſprings. *Univerſal involucre* of about eight, oblong, acuminate, ſlightly convex, reflexed leaves, partial, five-leaved, ſmaller, ovate. *Seeds* oblong, rounded on one ſide with five wings, flat on the other. The whole plant is very fragrant when rubbed. La Marck and Martyn from l'Heretier. A native of Spain near Gibraltar; found by Maſſon, and introduced in 1784. 22. B. *fruticeſcens*, Linn. " Leaves linear; involucres univerſal and partial." An under ſhrub, about a foot and a half high. *Stem* woody, divided into ſeveral knotty, twiſted ramifications, with ſlender, herbaceous twigs. *Leaves* alternate, linear, glaucous. *Umbels* ſmall, of from three to five rays. *Univerſal involucre* of three, ſhort, pointed leaves. La Marck. A native of Spain. 23. B. *ſpinoſum*, Linn. jun. Supp. " Old branches of the panicle naked, thorny; leaves linear." *Root* perennial. *Stem* low, irregular, with divaricated branches. *Leaves* acuminate, three-nerved. *Univerſal umbel* terminal, generally of three rays, which change into ſpines after the fructification is completed; *partial*, of five rays. *Involucres* of very ſmall leaves, equal in number to the rays. Linn. jun. and La Marck. A native of Spain. 24. B. *difforme*, Linn. " Spring leaves decompound, flat, gaſhed; ſummer leaves filiform, angular, trifid." *Stem* from five to ſix feet high, ſtraight, a little twiſted, branched. In winter, and the beginning of ſpring, it bears two ſorts of leaves; the firſt ſmall, petioled, compoſed of three, flat, trifid, gaſhed leaflets reſembling thoſe of parſley; the others longer, ſlender, filiform, angular, divided half way down into three filiform ſegments, the middle one the longeſt, and each terminated by a very ſmall point. In ſummer the former kind fall off. La Marck. *Univerſal involucre* of many awl-ſhaped, ſhrivelling leaves, connected at the baſe; partial, of five leaves. *Umbels* ſome ſimple, others compound. Linn. A native of the Cape of Good Hope.

Propagation and Culture. The bupleurums in general are cultivated only in botanic gardens. The ſeed ſhould be ſown in autumn, where the plants are deſigned to remain, for they are injured by tranſplanting. The fruticoſum, called by our gardeners ſhrubby Ethiopian Hartwort, will thrive in the open air, and is propagated by cuttings planted in pots filled with freſh loamy earth, and ſheltered in winter under a hot-bed frame; they will take root in ſpring, ſhould be placed in a ſhady ſituation in ſummer, and will not be fit to tranſplant till the autumn. The fruticeſcens may be treated in the ſame manner, but is not ſo hardy. The difforme may alſo be propagated by cuttings, which readily take root if planted in April, in pots filled with light earth, and plunged into a moderate hot-bed. They ſhould afterwards be enured to the open air by degrees, be tranſplanted into ſeparate pots, placed with other exotics in a ſheltered ſituation till autumn, and then removed into the green-houſe or dry ſtove. If propagated from ſeeds, they ſhould be ſown in autumn, ſheltered under a frame in winter, removed to a very gentle hot bed in ſpring, and finally treated like thoſe raiſed from cuttings. The ſpinoſum, nudum and coriaceum may all be propagated by cuttings, and treated as the difforme. They will probably bear the open air in mild ſeaſons, but are not yet ſufficiently common to run that hazard. Martyn's Miller.

Bupleurum *villoſum.* Linn. Sp. Pl. and Syſt. Nat. See Hermas *Depauperata.*

BUPORTHMUS, in *Ancient Geography,* a mountain at the extremity of the peninſula formed by the Argolide, S.E. of Peloponneſus. Upon this mountain were two temples, one of Ceres and Proſerpine, and another of Minerva. Pauſanias.

BUPRASIUM, a town of Achaia at a ſmall diſtance north of the river Peneus and of the town of Elis, which gave name to a fruitful country in which it was ſituated. It did not exiſt in the time of Strabo.—Alſo, a river of Peloponneſus, in the country of Elis. Steph. Byz.

BUPRESTIS, in *Entomology,* a genus of coleopterous inſects, diſtinguiſhed in a peculiar manner for the uncommon brilliancy and highly metallic ſplendour of their colours, which emulate the fineſt and moſt beautifully poliſhed metals. The inſects of this kind have the antennæ ſerrated, and as long as the thorax; feelers four, which are alſo filiform, with the laſt joint obtuſe, or truncated; head partly retracted within the thorax.

Linnæus, Fabricius, and Gmelin deſcribe the following ſpecies: unidentata, bicolor, gigantea, vittata, faſtuoſa, punctatiſſima, berolinenſis, corruſca, decora, lurida, obſcura, punctata, faſciata, rauca, ſtriata, ritulans, octoguttata, ignita, lineata, ocellata, aeroſa, maculata, maculoſa, ſtricta, ſternicornis, chryſis, violacea, aegypatica, mariana, farinoſa, fulminans, cyanipes, modeſta, blanda, aurata, tripunctata, elegans, chryſoſtigma, dorſata, impreſſa, ornata, taeniata, cayennenſis, cylindrica, ſcabra, trochilus, decaſtigma, ruſtica, canaliculata, acuminata, plebeja, tranquebarica, lugubris, carioſa, undata, auſtriaca, ſibirica, ſplendens, fuſca, aurulenta, tenebrionis, faſcicularis, variolaris, onopordi, hirta, rubi, deaurata, nitidula, læta, ſalicis, cyanea, diſcoidea, bimaculata, quadrimaculata, novem-maculata, triſtis, aenea, cuprea, nobilis, barbarica, umbellatarum, quadripunctata, cruciata, manca, pygmæa, minuta, meditabunda, viridis, biguttata, atra, elata, ruficollis, feſtiva, linearis, granularis, depreſſa, calcarata, fuliginoſa, hæmorrhoidalis, quercus, hirſuta, 11-maculata, ſexmaculata, varicornis, acuta, nævia, picta, inaurata, tatarica, virginica, nana, marginata, nigra, roſacea, ungarica, nebuloſa, bruttia, ſtephanelli, rugoſa, and coccinea.

A monographia of the bupreſtis tribe is expected from the pen of Dr. Schreiber of Vienna, which, in all probability, will contain a greater number of ſpecies than thoſe enumerated above. Several entirely new ſpecies are alſo deſcribed by Mr. Donovan in his recent elucidation of the entomological productions of New Holland; the moſt remarkable of which are bupreſtis grandis, macularia, limbata, ſuturalis, guttata, and ſeveral varieties of variabilis, and imperialis, the laſt of which is mentioned by Fabricius. Syſt. Eleuth.

Some writers affirm that the larvæ of the bupreſtes live in the ſolid wood, or in the trunks of decayed trees; but this is rather uncertain, ſince they do not appear to be exactly known in that ſtate. The conjecture is, however, plauſible, the perfect inſects being almoſt conſtantly found upon trees, or plants, and flowers. Few ſpecies of this beautiful tribe of inſects are found in Europe; the largeſt and moſt brilliant of thoſe hitherto diſcovered, are from the Braſils, and other hot climates.

BUPRESTOIDES, a ſpecies of Attelabus (Spondylis), the colour of which is black; ſhells nervous; thorax ſomewhat globular. Gmel. Fabr. &c. Deſcribed as *Bupreſtis ater* by Linn. Cerambyx maxilloſus, &c. Degeer. Scarabæus, &c. Friſch.

Buprestoides, a ſpecies of Carabus, of a black colour; antennæ and feelers ferruginous; legs piceous. Inhabits the ſouth of Europe. Gmel. &c.

BUQUOI, in *Geography,* a town of France, in the department of the Straits of Calais, and diſtrict of Arras; 5 miles W. of Bapaume. N. lat. 50° 12'. E. long. 2° 40'.

BUR-*Parſley,* in *Botany.* See Caucalis.

Bur *weed.* See Sparganium.

BURA, in *Ancient Geography,* a town of the Peloponneſus, ſeated on the ridge of a mountain, weſt of the river Crathis. It ſuffered much from an earthquake in the year 373 B. C. Pauſanias mentions ſeveral fine ſtatues of this city; and particularly thoſe of Ceres, Venus, Bacchus, and Lucina. Venus had a temple, in which was placed her marble ſtatue, made by Euclid, an Athenian ſtatuary.

Bura, in *Geography,* one of the ſmaller Orkney iſlands, between Pomona and Ronaldſha.

BURACO *de velta,* in *Ichthyology,* the name of a fiſh caught on the ſhores of the Braſils, and more uſually known among authors by its Braſilian name, Guaibi *coara.*

BURAGRAG, in *Geography,* a river on the coaſt of Barbary, which riſes in mount Atlas, and falls into the Atlantic ocean at the town of Sallee.

BURAMOS, an idolatrous people of Africa, in Nigritia, on the borders of the river St. Domingo. Their country extends to the mouth of the Rio-Grande.

BURANELLO, in *Biography.* See Galuppi.

BURATTI, or Burats, in *Geography,* the name of a barbarous and idolatrous nation, which occupies part of Siberia. They are called *Bratſki* by the Ruſſians, and among themſelves *Barga Buratt.* About the time of the Mongolian monarchy, or perhaps at an earlier period, they ſeem to have taken refuge in the wild mountainous region on the north ſide of the Baikal, which they ſtill inhabit. The Ruſſians found this nation in Siberia, when they conquered that country; and from the year 1644 they have peaceably ſubmitted to the Ruſſian ſupremacy. The whole Burat nation is at preſent, in conſequence of the border treaty, under the dominion of Ruſſia, and comprizes numerous heatheniſh people in the government of Irkutſk, where it inhabits the region from the Yeniſſey, along the Mongole-Chineſe borders, on the Angara, Tunguſka, and the Upper Lena, about the ſouthern Baikal, on the Selenga, the Argoon, and its rivers. Several years ago this government was computed to contain 32,000 tributary Burats; but their preſent number is probably four times as large. They are divided into a great number of tribes, called "Kolboudas," which are ſubdivided into caſts, or "Aimaks," and each Aimak is compoſed of a certain number of "Chottons," or villages, containing 10 or 20 families. The oldeſt of the Chottons governs it, and ſix of theſe Chottons are ſubject to a "Schulenga," or judge, choſen from among their chiefs, and confirmed in his office by the governor of the province. Twenty-four Schulengas form a tribe or Kolbonda, which is commanded by a common chief, ſelected from among the families of their ancient princes. It is his province to watch the obſervance of the laws, to decide diſputes, to diminiſh or augment the tribes, and to aſſemble and command the proportion of recruits, which are furniſhed by the nation in time of war, till they are united to the main body of the army. Catharine II. with a view of annexing dignity to this chief, gave orders that he ſhould wear a girdle ornamented with ſilver, on which is inſcribed the name of the caſt he commands; and the Buratt has become proud of this decoration, though it is merely a mark of his ſlavery. According to the accounts taken in 1782, this nation forms 65 caſts, containing 33.000 bows or heads of families; and as they ſpeak the Mongol language, profeſs the religion of the Kalmuks, lead a ſimilar kind of life, and manage their flocks in the ſame manner with the Barſchkirians, it will be ſufficient to refer for an account of ſeveral particulars relating to them to the articles Bashkirs, Kalmuks, and Mongols. They have, however, ſome cuſtoms peculiar to themſelves. They are allowed to marry as many wives as they can afford to purchaſe; and the price of a bride is paid in cattle of different kinds. A young girl, according to her beauty and character, may, among the rich, receive 100 horſes, 20 camels, 50 horned cattle, 200 ſheep, and 30 goats. When the cattle are delivered, the nuptials are celebrated. For this purpoſe they erect a "Jurte," of felt, entirely new, of a white colour, and very neat. The three firſt days are ſpent in feaſting, ſinging, and dancing; and on theſe occaſions the muſical inſtrument is a guitar with two ſtrings, reſembling that which the Ruſſians call "Balalaika." At the expiration of theſe three days, the marriage is conſummated. When a huſband dies and leaves ſeveral wives, ſhe who has borne him children, or the eldeſt of ſuch as have had children, becomes the miſtreſs of the Jurte. Thoſe who have had no children, return to their relations on fine horſes, and carry with them the clothes and preſents which they received from the huſband. If they have no place of retirement, they continue in the Jurte, ſubordinate to the wife mother, and are entitled to the tenth of the cattle left by the huſband. The Buratti reſemble the Kalmuks in outward form, with ſome ſlight variations. Their countenance is ſallow, and though they are tall, their bodily ſtructure is feeble, and they ſeldom attain to an advanced age. They formerly ſuffered much from the ſmall-pox, but ſince an inoculation hoſpital has been inſtituted at Irkutſk, the mortality ſeems to have been much diminiſhed. They now frequently inoculate their own children. They are much ſubject to the itch, from their manner of living, food, and clothing. In chronical diſeaſes they uſe the warm baths on the eaſt ſide of the Baikal. Their phyſicians are the Schamanes, who pretend to heal them more by ſacrifices, incantations, and ſpells, than by natural means. They ſubſiſt by the chace and by their flocks. A Burat is known to poſſeſs a thouſand ſheep, beſides horſes, and other cattle. Their habitations are hexagonal cabins, conſtructed with beams laid over one another, to the height of about 3 feet, with an opening formed at the top by ſtakes for the diſcharge of the ſmoke. The Burats are a principal branch of the Kalmuks, and differ from the Tunguſes only in their language, which is Mongolian. Tooke's View of the Ruſſian Empire, vol. i. and ii. Chantreau's Travels in Ruſſia, vol. ii. Eng. ed.

BURAZ, a town of Aſiatic Turkey, in the province of Natolia; 28 miles S.E. of Degnizlu.

BURBACH, a town of Hungary, celebrated for its wine; 8 miles E. of Eiſenſtadt.

BURBARUS, in *Ichthyology*, the name given by Paul Jovius, and ſome other writers on fiſhes, to the common carp. *Cyprinus carpio*.

BURBAS, in *Commerce*, a ſmall coin at Algiers, with the arms of the dey ſtruck on both ſides, worth half an aſper.

BURBER, an Egyptian piece of money. It is a thick piece of copper, about as broad as a ſixpence; 12 of theſe make a *medine* there.

BURBIDA, in *Ancient Geography*, a town of Spain, between Tuda and Turoqua. Anton. Itin.

BURBOT, in *Ichthyology*, the Engliſh name of *gadus lota*, a fiſh common in the Trent, and ſome few other of our rivers. It is alſo known by the appellation of the eel-pout. This is *muſtela fluviatilis* of two or three old Latin writers.

BURCA, among the Turks, the name of the rich covering of the door of the houſe at Mecca; it is ten feet long, and five wide; and there are ſeveral figures and Arabic letters on it, very richly embroidered in gold, on a ground of red and green. This is carried about in their ſolemn proceſſions, and is often made to ſtop, that the people may touch it.

Burca, in *Ancient Geography*, a town of Africa, in Mauritania Cæſarienſis. Ptolemy.

BURCARDIA, in *Botany*, (from J. H. Burckhard, M. D. who publiſhed Charac. Plant. 1702), a genus formed by Scopoli, and adopted by Schreber, for a plant deſcribed by Aublet in his account of the plants of Guiana, and called by him Piriqueta, which has been referred by Willdenow and Boſc to the genus Turnera. See Turnera *rugoſa*.

BURCHANA, or Burchanis, in *Ancient Geography*, an iſland placed by Pliny between the Rhine and the Cimbric promontory. It was reduced by Druſus, who employed for this purpoſe all the Roman forces in thoſe parts.

BURCHARDIA, in *Botany*. See Callicarpa *Americana*.

BURCHAUSEN. See Burkhausen.

BURCHEIM. See Burkeim.

BURCHIELLO, in *Biography*, an Italian poet, whoſe family name was *Domenico*, was a native of Florence, where he exerciſed the trade of a barber, and where his ſhop was the uſual rendezvous of the men of letters in that city. He died at Rome in 1448. His poems, which were a ſingular kind of burleſque, abounded with ludicrous expreſſions, old proverbs, and various extravagancies, often unintelligible, and frequently low and indecent, but intermixed with flaſhes of wit and vivacity, that became very popular, and eſtabliſhed a kind of ſtyle, called the "Burchellieſque," which had ſeveral imitators. The pieces of this poet are chiefly ſonnets, of which the firſt edition appeared at Bologna in 1475; and another edition, with a comment, no leſs hard to be underſtood than the original, was given at Venice in 1553. The Junti at Florence publiſhed all his poems in 1552 and 1568. Whatever amuſement performances of this kind might afford in a rude age, and in the infancy of poetry, they have ſunk into obſcurity by the prevalence of good taſte and decorum. Mr. Roſcoe, in his "Life of Lorenzo de Medici," informs us, that a ſatire of Burchiello in *terza rima*, after the manner of Dante, exiſts in MS. in the library of the duke of Tuſcany.

BURCKERSDORF, in *Geography*, a town of Germany, in the circle of Upper Saxony, and territory of Newſtadt; 2 miles N.W. of Weyda.

BURCUS, in *Ancient Geography*, a river of Aſiatic Sarmatia, on the banks of which was built the city of Cucunda, according to Ptolemy.

BURDA, in *Geography*, a river of Hindooſtan, which runs into the Godavery, 60 miles E. of Neermul.

Burda, in ſome *Middle Age Writers*, denotes a garment made of ruſhes.

BURDACK, an Egyptian veſſel, which ſheep uſually drink out of at Cairo. They are made of a peculiar ſort of earth, which is ſuppoſed to cool the water, and are always ſet out to the north, to keep the cooler, and covered with a ſtrainer, to prevent any thing falling into the water; they are of ſo porous a ſtructure, that the water put into them will get through them in a few days.

BURDAH, in *Geography*, a town of Africa, near the river Gambia, in the kingdom of Tomani.

BURDALO, a river of Spain, in Eſtremadura de Leon, which riſes in the vicinity of Truxillo, and diſcharges itſelf into the Guadiana.

BURDEGALA, or Burdigala, in *Ancient Geography*, now *Bourdeaux*, a trading port town of Gaul, in the ſecond Aquitania, the capital of the Bituriges Viviſci, ſeated on the Garumna. Strabo is the moſt ancient author who mentions it, and by his deſcription he intimates, that the ſea water formed a marſh in its vicinity. The poet Auſonius leads us to conclude, that the Druids had a ſchool in this city; it was the place of his nativity, and he had been a profeſſor in its ſchool. He has given a poetical deſcription of this city. See Bourdeaux.

BURDEN, properly ſignifies a heavy weight or load.

Ringelberg recommends the bearing burdens as the beſt ſort of exerciſe; eſpecially to ſtrengthen men of ſtudy. To this end, he had a gown lined with plates of lead, which he could juſt lift with both his hands. This load he bore ſix or ſeven days together, either increaſing or diminiſhing it as he found occaſion; by which means he could both write and exerciſe at the ſame time.

Burden alſo denotes a fixed quantity of certain commodities. A burden of gad-ſteel, is two ſcore, or 120 pounds.

Burden, or Burthen, the weight of a ſhip when not overloaded to go to ſea, and is uſually expreſſed in *tons*, and ſometimes in *laſts*. The common method employed by ſhip-builders to find the tonnage of a ſhip, is to multiply the length of the keel by the extreme breadth, and the product by half the extreme breadth; then, this laſt being divided by 94, the quotient is the burden in tons. If the ſhip is afloat, and the tonnage required, the length of the keel cannot be aſcertained; in this caſe, therefore, ſhip-builders uſe the following rule. From the extreme length ſubtract three-fifths of the extreme breadth, the remainder is the aſſumed length of the keel. Now the length of the keel thus found being multiplied by the extreme breadth, and that product by half the breadth, which laſt product being divided by 94, will give the tonnage for merchants' ſhips; but for ſhips of war the diviſor is 100.

According to an act as ſettled by the 13 Geo. III. chap. lxxiv. the burden or tonnage of a ſhip is to be found as follows. Meaſure the length from the after part of the main ſtern-poſt along the rabbet of the keel to a line perpendicular thereto, from the fore part of the main ſtem under the bowſprit; from which ſubtract three-fifths of the extreme breadth, excluſive of any doubling, and the remainder is to be eſteemed the length of the keel for aſcertaining the tonnage; which, being multiplied by the breadth and half-breadth, and divided by 94, as formerly, will give the tonnage. When it becomes neceſſary to aſcertain the burden of a ſhip which is afloat, the following method is to be obſerved. Meaſure the neareſt diſtance, at the load water mark, between the after part of the ſtern-poſt, and a plumb-line ſuſpended from the ſtern; which, deducted from the length meaſured from the point on the ſtern where the plumb-line was ſuſpended to a point perpendicularly above the load water mark at the fore part of the ſtern, the remainder is the extreme length of the ſhip: from which ſubtract three-fifths of the extreme breadth meaſured from outſide to outſide of the plank, excluſive of doubling or ſheathing, and alſo one-fourth of the depth of the load water line abaft, and the remainder will be the length of the keel for tonnage; which, being multiplied by the breadth, and by the half-breadth, and the product divided by 94, will give the burthen in tons.

In Dr. Mackay's treatiſe on "Navigation," a rule, adapted to logarithms, is given to find the tonnage of a ſhip; and in his treatiſe on "the deſcription and uſe of the ſliding rule," is contained the method of aſcertaining the tonnage by that means.

From the ſlighteſt reflection it will be evident the abovementioned rules, although ſanctioned by practice and by the legiſlature, cannot give the true burthen of a ſhip. Neither is the depth taken into the account; and although the length, extreme breadth and depth are taken into conſideration, yet the form of the bottom, and the dimenſions of the ſhip at various other parts are neglected; and hence, full built, deep ſhips will carry conſiderably more than according to the rule; and ſharp low built ſhips will be greatly over-rated. Since, therefore, the ſeveral duties on ſhipping increaſe with the tonnage, ſhips are generally made deeper than their other dimenſions require, which has the tendency of making them crank. For a more accurate method of aſcertaining the burthen of a ſhip, ſee the article Ton.

Burden, *ſhips of*, denote thoſe of a larger and heavier ſort, carrying 500 tons, or upwards.

Burden, or Burthen, from *Bourdon*, Fr. a drone. Hence, in *Muſic*, a baſe of only one note, *a pedale*, and the drone of a bagpipe, is called a *drone-baſe*. And hence, that part of a ſong which is repeated at the end of every verſe or ſtanza, is called the *burden of the ſong*.

> "At every cloſe ſhe made, th' attending throng
> Replied, and bore the burden of the ſong."
> Dryden.

Pope writes burthen:

> "Sacred to ridicule, his whole life long,
> And the ſad burthen of ſome merry ſong."

Burden alſo denotes the pipe, or ſtring by which ſuch a ſound is given.

Matth. Paris will have the name *burden* to have been originally given this pipe, on account of its reſemblance to a pilgrim's ſtaff, anciently called alſo *burdo*.

BURDO, in *Phyſiology*, a mongrel beaſt of burden, produced by a horſe and ſhe-aſs, by which it is diſtinguiſhed from the mule, which is that produced of a male aſs by a mare.

Burdo, or Burdon, in *Middle Age Writers*, denotes a pilgrim's long ſtaff, as doing the office on that occaſion of a mule, or other vehicle.

BURDOA, or Burdova, in *Ancient Geography*, a town of Hiſpania, in Luſitania. Ptolemy.

BURDOCK, in *Botany*. See Arctium *Lappa*, and Xanthium *Strumarium*.

BURDONARII, an appellation ſometimes given to pilgrims, or thoſe who went out of devotion to the holy land.

The word is formed from Burdo, an appellation given to the ſtaff wherewith they travelled.

BURDUGNO, in *Geography*, a ſmall town of the Morea, ſeated on the Vaſilipotamo, between the mouth of this river and the town of Miſiſtra.

BURDWAN, or Burwah, a town of Hindooſtan, in the country of Bengal; 50 miles N. W. of Calcutta. N. lat. 23° 10'. E. long. 84° 30'.

BURE, William-Francis de, in *Biography*, a bookſeller of Paris, eminently ſkilled in bibliography, publiſhed a ſtandard work on this ſubject, entitled, "Bibliographie Inſtructive, ou Traité des Livres Rares et Singulières," Paris, 1763, &c. 7 vols. 8vo. He alſo publiſhed a "Catalogue of the Library of M. de la Valiere," 1767, 2 vols. 8vo.; and "Muſeum Typographicum," 1775, 12mo. His accounts of different editions are very exact. He died in July 1782, reſpected for integrity as well as ſkill in his profeſſion. Nouv. Dict. Hiſt.

BUREBA, in *Geography*, a country of Spain, in Old Caſtile, which was formerly a part of Navarre: its principal town is Birvieſca.

BUREDGIAT, *El*, a town of Egypt, on the weſt ſide of the Nile, 10 miles W. of Menuf.

BUREIL, a town of Aſiatic Turkey, in the province of Caramania; 10 miles S. of Yurcup.

BURELLE', in *Heraldry*, a term uſed by the French heralds for emblazoning barry; the ſame as the Engliſh call barrulet.

Burelle, or *Civitate Borelle*, in *Geography*, a ſmall epiſcopal town of Naples, in the province of Abruzzo Citra, on the eaſt ſide of the river Sangro. N. lat. 41° 56'. E. long. 15° 5'.

BUREN, a town of Germany, in the circle of Weſtphalia, and biſhopric of Paderborn, ſeated on the Alme; 13 miles S. S. W. of Paderborn. N. lat. 51° 35'. E. long. 8° 25'.

Buren, a town of the United Provinces, in the duchy of Gueldres, and capital of a fine corn country, belonging, before the late revolution, to the houſe of Orange, to which it deſcended in 1551, by the marriage of prince William I. with Anne heireſs to Maximilian count of Egmond; 5 leagues N. of Bois-le-Duc, and 6 S. E. of Utrecht. Without the town is a good caſtle, walled and ſurrounded by a double moat. N. lat. 52°. E long. 5° 22'.

Buren, a town of Swiſſerland, in that diſtrict of the canton of Berne, called the Upper Argow, ſeated on the eaſt ſide of the Aar, over which it has a bridge; 9 miles S. W. of Soleure. N. lat. 47° 6'. E. long. 7° 11'.

BURETRAS, the name of a village of Sweden, in Weſt Bothnia.

BURETTE, Pierre-Jean, in *Biography*, born at Paris in 1665, was the ſon of a ſurgeon, who, not being very proſperous in his practice, had recourſe for his ſupport to muſic, which he had learned of his mother, an excellent performer on the harp and harpſichord. He firſt performed, profeſſionally, at Lyons, and afterwards went to Paris and played on the harp to Louis XIV., who was much pleaſed with his performance.

His ſon, Peter John, was ſo ſickly and feeble during infancy, that he paſſed almoſt his whole youth in amuſing himſelf on the ſpinet, and in the ſtudy of muſic; but he had ſo ſtrong a paſſion for this inſtrument that he had ſcarcely arrived at his ninth year when he was heard at court, accompanied by his father on the harp. Two years after, the king heard him again, when he performed a duet with his father on the harp; and at eleven years of age, he aſſiſted him in giving leſſons to his ſcholars.

It is not generally known that the learned academician, Burette, who had written ſo copiouſly on the ſubject of ancient muſic, was ſo well acquainted with the modern; which muſt have rendered his opinions more valid, and given weight to his reaſoning on muſical ſubjects in general, which a mere man of letters ſeldom obtains. His taſte for muſic, however, did not extinguiſh his paſſion for other ſciences. He taught himſelf Latin and Greek with little aſſiſtance from others; and the ſtudy of theſe languages inclined him to medical inquiries. At eighteen years old he attended for the firſt time the public ſchools, went through a courſe of philoſophy, and took leſſons in the ſchools of medicine. And even during this time he learned Hebrew, Syriac, Arabic, Italian, Spaniſh, German, and Engliſh, ſufficiently to underſtand them in books.

He was at length admitted of the faculty at Paris, and practiſed with reputation during thirty-three years, having for his diſciples almoſt all his brethren who have ſince enjoyed the higheſt reputation in that capital.

In 1705, he was received into the Academie de Belles Lettres; and in 1706, he had a conſiderable ſhare in the publication of the "Journal des Sçavans," at which he laboured more than thirty years. In 1718, he had an appointment in the Bibliotheque du Roi.

The public are obliged to the abbé Fraguier for the learned diſſertation which M. Burette produced on the muſic of the ancients. This learned abbé, ſuppoſing that the Greeks applied the ſame ſenſe to the word *harmony*, as is given to it by the moderns, and that, conſequently, they knew counterpoint, or muſic in parts, Burette proved that he was miſtaken, and that the ancients meant no more by the term *harmony*, than we do by proportion. He demonſtrated, that the Greeks practiſed no other ſimultaneous conſonances than uniſons and octaves.

This learned and indefatigable inquirer after the muſic of the ancient Greeks, was ſeized, in 1745, with a paralytic affection, and after languiſhing during the whole year 1746, he died in 1747, at 82. His library, conſiſting of 15,000 volumes, was compoſed of the moſt curious and well-choſen books that could be procured in all languages.

He has ſupplied the memoires of the Acad. des Inſcrip. et Belles Lettres with diſſertations on the dancing of the ancients, on play or gaming on ſingle combat, and on horſe-racing. He enriched theſe memoirs with a tranſlation of Plutarch's treatiſe on muſic, with notes and remarks, which are diſperſed through many volumes of the memoirs of that learned ſociety. And this writer muſt be allowed, on every ſubject concerning ancient muſic, the merit of great diligence and learning; but he does not ſeem always to have been poſſeſſed of an equal ſhare of ſagacity, or with courage ſufficient to confeſs himſelf unable to explain inexplicable paſſages in his author. He never ſees a difficulty; he explains all. Hence, amidſt great erudition, and knowledge of antiquity, there are a thouſand unintelligible explanations in his notes upon Plutarch. "En ecrivant," ſaid Fontenelle, "j'ai toujours taché de m'entendre."—An admirable rule! which every writer ought to adopt.

Thus much is ſaid, not with a view to depreciate the merit of M. Burette, to whom almoſt all late writers on muſic have had great obligations, and whoſe labours have been of ſingular ſervice to ourſelves, among the reſt; but to ſhew how few authors are to be always followed implicitly, or read without precaution. But though we have frequently differed from him, we have adopted this opinion when we thought it well founded; and there has been no ſubſequent writer on ancient muſic, who has not frequently availed himſelf of his labours.

BURFORD, in *Geography*, an ancient town of Oxfordſhire, in England, is ſuppoſed by ſome writers to be one of the oldeſt towns of the Mercian kingdom. It is remarkable in the page of hiſtory, and in the annals of ſporting. Near this town was the ſcene of that deciſive engagement between the Weſt Saxons and Mercians, which liberated the former from the tyranny of the latter. In the year 752, a pitched battle was fought here between Cuthred, king of Weſſex, and Ethelbald, king of Mercia, "two princes of high ſpirit and ambitious ſchemes." The conflict was violent, and the latter monarch was compelled to fly for ſafety; yet, during the engagement, the banner of Mercia, a golden dragon, was ſeized and torn by Edelhun. The ſcene of this conflict is ſtill pointed out by the name of a field a little weſtward of the town called Battle-edge; and the memory of the event is preſerved by an annual proceſſion on the eve of Midſummer day. At the concluſion of the ſeventh century, an eccleſiaſtical ſynod was held here to determine the time when Eaſter ſhould be held. It was then decreed that Aldhelm, abbot of Malmſbury, ſhould announce to the Britiſh church a ſtated and proper period for the celebration of this feſtival in future. The horſe races of Burford are frequent, and much frequented by the ſtudents from Oxford, and the neighbouring gentry, &c. Here are manufactories for duffels and for rugs. The town is ſeated in a low, narrow valley on the banks of the river Windruſh. The high grounds are moſtly appropriated to corn, in conſequence of which, the markets at this place and at Whitney are abundantly ſupplied with that neceſſary article. The church is a ſpacious and intereſting pile of building; diſplaying ſome curious ſpecimens of ancient eccleſiaſtical architecture. Its weſtern door is formed with a ſemicircular arch, ornamented with birds' heads, &c. and the ſouth porch diſplays a highly decorated exterior. Near this town is an ancient manor-houſe, which was a religious foundation belonging to the abbey of Keynſham in Somerſetſhire. This belongs to John Leuthal, eſq. a deſcendant from the famous ſpeaker to the long parliament. Burford had a charter from Henry II. and is governed by two bailiffs, burgeſſes, &c. It is diſtant 72 miles N. W. from London, contains 304 houſes, and 1516 inhabitants. Here are a market on Saturdays, and two annual fairs. Plott's Hiſtory of Oxfordſhire. Magna Britannia, vol. iv. 4to.

Burford *Saddle.* See Saddle.

BURG. See Borg.

Burg, a bailiwick and caſtle of Germany, in the circle of Upper Saxony, and county of Reuſs; 4 miles S. W. of Schleitz.—Alſo, a town in the circle of Lower Saxony, and duchy of Magdeburg, ſeated on the Ihle, in which are woollen manufactures; 14 miles N. E. of Magdeburg.—Alſo, a town of the United Netherlands, in the county of Zutphen, ſeated on the Old Iſſel, between Anholt and Deutikem. N. lat. 52°. E. long. 6° 12′.

Burg, or Bourg, a town of Germany, in the circle of Weſtphalia, and duchy of Berg, ſeated on the Wippe; 6 miles S. of Solingen,

Burg-*Bernheim, Mark,* a town of Germany, in the circle of Franconia, and principality of Culmbach; 14 miles N. N. W. of Anſpach.

Burg-*Lengenfeld,* a town of Germany, in the circle of Bavaria, and principality of Neuburg, on the Nab; 15 miles N. of Ratiſbon.

Burg *Scheidungen,* an ancient fortified town, but now a church-village of Germany, in the circle of Thuringia; 3 miles S. E. of Nebra.

Burg *Schwalbach,* a town of Germany, in the circle of the Upper Rhine, and county of Naſſau-Saarbruck, and in a prefecturate of the ſame name.

Burg-*upon the ſands,* a place lying at a ſmall diſtance weſt of Carliſle, in the county of Cumberland, and remarkable for the monument erected there in honour of Edward I. who died there in 1307, on his return from a ſucceſsful expedition againſt the Scots.

BURGAGE, in *Law,* a tenure proper to boroughs and towns, whereby the inhabitants hold their lands and tenements of the king, or other lord, at a certain yearly rate.

This tenure is deſcribed by Glanvil (l. vii. c. 3.), and is expreſsly ſaid by Littleton (§ 162.) to be but tenure in ſocage. It is indeed only a kind of town ſocage; as common ſocage, by which other lands are holden, is uſually of a rural nature. A borough (ſee Borough) is uſually diſtinguiſhed from other towns by the right of ſending members to parliament; and where the right of election is by burgage tenure, that alone is a proof of the antiquity of the borough. Tenure in burgage, therefore, or burgage tenure, is where houſes, or lands which were formerly the ſcite of houſes, in an ancient borough, are held by ſome lord in common ſocage, by a certain eſtabliſhed rent. The free ſocage in which theſe tenements are held, ſeems to be plainly a remnant of Saxon liberty; and this may account for the great variety of cuſtoms, affecting many of theſe tenements ſo held in ancient burgage; the principal and moſt remarkable of which is that called Borough-*Engliſh*; which ſee. There are alſo other ſpecial cuſtoms in different burgage tenures as in ſome, that the wife ſhall be endowed of all her huſband's tenements (Litt. § 166.), and not of the third part only, as at the common law; and in others, that a man might diſpoſe of his tenements by will (Litt. § 167.), which in general was not permitted after the conqueſt, till the reign of Henry VIII; though in the Saxon times it was allowable. A pregnant proof, ſays judge Blackſtone (Com. vol. ii. p. 84.), that theſe liberties of ſocage tenure were fragments of Saxon liberty.

Burgage is ſometimes uſed to denote the rent, or quit-rent paid to the chief lord for the houſes and tenements in a town or burough.

Burgage *free, Burgagium liberum,* denotes a tenure, whereby the tenants after having paid their rent to the ſuperior lord, were exempted from the ſervice.

BURGANET, in *Armoury,* a ſteel-cap formerly worn by ſoldiers in battle. It has alſo been uſed in armorial bearings.

BURGAS, in *Geography.* See Bergase.

BURGAU, a town and caſtle in the margraviate of the ſame name, in Auſtrian Swabia, ſeated on the river Mindel; 5 leagues N. of Augſburg.

Burgau, a conſiderable village of Germany, in the circle of Upper Saxony, and principality of Eiſenach; 3 miles S. of Iena.

Burgau, in *Natural Hiſtory,* the name of a large ſpecies of Top-ſhell or Trochus. It is very beautifully lined with a coat, of the nature of the mother of pearl; and the artificers take this out, to uſe under the name of mother of pearl, though ſome call it after the name of the ſhell they take it from, *burgaudine.* Some other ſhells, however, appear pearly, when diveſted of their external covering. Among the modern French, *Burgau* is a trivial name for ſeveral different kinds of ſhells of the Turbo genus.

BURGAUDINE, the name given by the French artificers to what we call mother of pearl. In their works, they do not uſe the common nacre ſhell for this, but the lining of the American bergau. Hence ſome call the mother of pearl *burgaudine,* and others the *burgaudine* mother of pearl.

BURGDORF, in *Geography,* a town of Swiſſerland, in the canton of Berne, and chief place of a bailiwick, ſeated on the river Emme; about a league from the town are ſulphureous fountains and baths, which are ſaid to be beneficial in paralytic and nervous complaints; 8 miles N. E. of Berne and 12 S. S. E. of Soleure. N. lat. 47° 2′. E. long. 7° 29′.

Burgdorf, a town of Germany, in the circle of Lower Saxony, and principality of Luneburg-Zell, ſeated on the Aue: it is walled and moated, and has a caſtle; 14 miles E.N.E. of Hanover, and 9 S. of Zell.

BURGE-LES-BAINS, a town of France, in the department of the Allier, and chief place of a canton, in the diſtrict of Moulins. The town contains 2,542, and the canton 10,104 inhabitants; the territory includes 342½ kilometres, and ten communes.

BURGE-MASTER of Greenland, in *Ornithology*. See Procellaria Glacialis. The ſame name is given by Ray to the wagel gull, *larus nævius;* it is alſo called Burgomaſter, and Burgermeiſter. In Martin's Spitzb. *Larus glaucus*, the glaucous gull, is termed Burgermeiſter.

BURGEIN, in *Geography*, a town of Egypt, on the weſt ſide of the Nile; 17 miles N. of Achmounain.

BURGEL, a town of Germany, in the circle of Upper Saxony, and margraviate of Meiſſen, ſeated on the Sala; 6 miles S. E. of Dornburg.

Burgel, *Birgel*, or *Mark Burgel*, a very ancient town of Germany, in the circle of Franconia, and principality of Culmbach, ſeated on a high mountain near the river; 13 miles N. N. W. of Anſpach.

BURGEO, a ſmall iſland near the ſouth coaſt of Newfoundland; 22 leagues N.W. of Miquelon. N. lat. 47° 35'. W. long. 57° 31'.

BURGEON, in *Botany*, as the term is uſed by Engliſh gardeners, is only another name for a gem or bud. The French botaniſts diſtinguiſh three ſtages of its growth, by three different names. At its firſt appearance in ſpring it is an eye, *œil;* about the ſolſtice it becomes a bud, *bouton*, which continues to increaſe during the autumn; and in the following ſpring is a burgeon, *bourgeon*.

BURGESS, an inhabitant of a borough or a walled town, or one who poſſeſſes a tenement therein. In other countries, burgeſs and citizen are confounded together; but with us they are diſtinguiſhed. Stat. 5 R. II. c. 4. See Borough. The word is alſo applied to the magiſtrates of corporate towns.

Anciently, burgeſſes were held in great contempt, being reputed ſervile, baſe, and unfit for war; ſo that the gentry were not allowed to intermarry in their families, or fight with them; but, in lieu thereof, were to appoint champions. A burgeſs's ſon was reputed of age when he could diſtinctly count money, meaſure cloth, &c. Spelm. Gloſſ. Glanvil. lib. vii. cap. 9.

Burgess, *king's*, *Burgenſis regis*, was he who though reſiding in another's juriſdiction, was exempt therefrom, and only ſubject to the juriſdiction of the king, unleſs the lord alſo enjoyed royal juriſdiction.

In ſtatute 5 Rich. II. c. 4. where the ſeveral claſſes of perſons in the commonwealth are enumerated, we meet with count, baron, banneret, *chivaleer de countee, citizein de citie,* and *burgeſs de bourg*.

Burgess is now ordinarily uſed for the repreſentative of a borough town in parliament. See Borough.

Burgeſſes are ſuppoſed to repreſent the mercantile part or trading intereſt of the nation. They were formerly allowed by a rate eſtabliſhed in the reign of Edw. III. two ſhillings a day as wages. It is much to be regretted, that the members for boroughs bear above a quadruple proportion to thoſe for counties. The Univerſities were, in general, not empowered to ſend burgeſſes to parliament: though once, in 28 Edw. I. when a parliament was ſummoned to conſider of the king's right to Scotland, writs were iſſued, requiring the Univerſity of Oxford to ſend up four or five, and that of Cambridge two or three of their moſt diſcreet and learned lawyers for that purpoſe. But king James I. indulged them with the permanent privilege of ſending conſtantly two of their own body, to ſerve for thoſe ſtudents, who, though uſeful members of the community were neither concerned in the landed nor the trading intereſt; and to protect in the legiſlature the rights of the republic of letters. The right of election of burgeſſes depends on ſeveral local charters and cuſtoms, which have occaſioned infinite diſputes; though, by 2 Geo. II. c. 24 the right, for the future, ſhall be allowed according to the laſt determination of the houſe of commons concerning it: and by 3 Geo. III. c. 15. no freeman, except ſuch as claim by birth, ſervitude, or marriage, ſhall be entitled to vote, unleſs he hath been admitted to his freedom twelve calendar months before. No perſon is eligible as a burgeſs, who hath not a clear eſtate of 300l. a year. Stat. 9 Ann. c. 7. See Parliament.

Burg-Gemunde, in *Geography*, a town of Germany, in the circle of the Upper Rhine, and principality of Upper Heſſe; 14 miles S. E. of Marburg.

BURGGRAVE, properly denotes the hereditary governor of a caſtle, or fortified town, chiefly in Germany.

The word is compounded of *bourg, town,* and *graf,* or *grave, count.*

The burggraves were originally the ſame with what we otherwiſe call *caſtellans*, or *comites caſtellani;* but their dignity was conſiderably advanced under Rudolph of Hapſburg; before this time they were ranked only as counts, and below the princes, but under him began to be eſteemed on a footing with princes. In ſome parts the dignity is much degenerated, eſpecially in the Palatinate. There were formerly, according to Leti, fifteen families who enjoyed the title of burggraves, thirteen of which are now extinct. But this is differently repreſented by others. In Bohemia, the title burggrave is given to the chief officer, or to him that commands in quality of viceroy. In Pruſſia, the burggrave is one of the four chief officers of the province. In Guelderland, the burggrave of Nimeguen is preſident of the ſtates of the province.

Burggrave, John-Philip, M. D. in *Biography*, practiſed phyſic ſeveral years, firſt at Darmſtadt, and afterwards at Frankfort, and was author of ſeveral intereſting works, "Libitina ovans Fatis Hygiææ, ſeu de Medicæ Artis æque ac Medicorum præcipuis Fatis," Frank. 1701, 8vo.; in which he recounts the principal occurrences in the lives of the moſt celebrated phyſicians from the time of Hippocrates. This was again printed in the year 1706, with ſome alterations, under the title of "Iatrice Hominum Lethique Curioſa. De Exiſtentia Spirituum nervoſorum, eorumque vera Origine, Indole, Motu, Effectibus, &c. in Corpore Humano vivo," &c. 1725. 4to. Dr. Goelicke wrote an anſwer to this under the title of "Spiritus Animalis ex Foro Medico relegatus;" which produced, from our author, "Spiritus Nervoſus reſtitutus," 4to. 1729: ſo this unmeaning controverſy ended. His next work, which gave him much credit with his countrymen, was, "De Aere, Aquis, et Locis Urbis Francofurtanæ Commentatio," 1751, 8vo. He alſo publiſhed an edition of "Herman Conringius, de Habitûs Corporum Germanicorum Antiqui et Novi Cauſis," with a commentary, 1727, 8vo. Eloy. Dict. Hiſt.

BURGH, James, an eſteemed moral and political writer, was born in 1714, at Madderty, in Perthſhire, and educated at the Univerſity of St. Andrew's, with a view to the miniſtry, which was his father's profeſſion; but, obliged to decline it on account of his health, he embarked in the linen buſineſs, and loſt his whole property. This misfortune reduced him to the neceſſity of ſeeking a ſubſiſtence in London, where he was firſt employed in correcting the preſs and making indexes, and afterwards as uſher in a ſchool. Whilſt he occupied this ſituation at Great Marlow, in the county of Bucks, he publiſhed, without his name, in 1745, a pamphlet, entitled "Britain's Remembrancer," which paſſed through five editions. In 1747 he became maſter of an academy, which he removed from Stoke-Newington to Newingtonington-green, and which he ſupported with great reputation to himſelf and benefit to his ſcholars for 19 years. Independently of the attention which he devoted to his ſchool, he compoſed and publiſhed ſeveral valuable works; of which the principal appeared in 1754, under the title of "The Dignity of Human Nature; or a brief Account of the certain and eſtabliſhed Means for attaining the true end of our Exiſtence," 4to. reprinted in 2 vols. 8vo. In 1762 he publiſhed "The Art of Speaking," containing rules for elocution, and leſſons ſelected from ancient and modern writers, in which the emphatical words were diſtinguiſhed by Italics. The firſt volume of his "Crito, or Eſſays on various Subjects, political, moral, and metaphyſical," was publiſhed in 1766, and a ſecond volume in 1767. In diſcuſſing the queſtion concerning the origin of evil, he aſcribes it to the machinations of powerful malignant ſpiritual beings, from which Chriſtianity was deſigned to deliver us. In 1771 he gave up the charge of his ſchool, and, though he ſuffered excruciating pain from the ſtone, purſued with great vigour of mind the compoſition of a work, for which he had collected a maſs of materials, entitled "Political Diſquiſitions." The firſt two volumes of this work, comprehending a vaſt variety of political ſubjects, appeared in 1774, and the third in 1775; and they were well received by thoſe who were zealous in the cauſe of public reform. Whilſt he was proſecuting this work, the painful diſeaſe, which he had long ſuſtained with patience and reſignation, terminated his life in 1775. Thoſe who were in habits of intimate acquaintance and frequent intercourſe with him, highly eſteemed him for his piety and integrity, his ſocial cheerful temper, and the benevolent ardour with which he devoted himſelf to the promotion of the public good. If he was ſanguine in his projects, they were ſuch as tended, according to his judgment, to the general improvement of ſociety and of mankind: and though his compoſitions are diſtinguiſhed more by the variety of their ſubjects than by accurate arrangement, and by energy rather than eloquence of language, many of them will be read with ſatisfaction and advantage. Beſides the treatiſes already mentioned, he publiſhed, at different times, "Thoughts on Education;" "An Hymn to the Creator of the World;" "A Warning to Dram-drinkers," 12mo. written at the requeſt of Dr. Stephen Hales, and Dr. Hayter, biſhop of Norwich; "Directions, Prudential, Moral, Religious, and Scientific," printed for the uſe of his ſcholars, and ſince pirated by bookſellers, and ſold under the title of "Youth's friendly Monitor;" and ſeveral periodical Eſſays on the topics of the times, in the news-papers. Biog. Brit.

BURGH, the ſame with borough, which ſee.

BURGH-*bote*, from *burg*, *caſtellum*, and *bote*, *compenſatio*, is chiefly uſed for an aid or contribution levied for the repairing of a town or caſtle.

By the law of king Athelſtan, the caſtles and walls of towns were to be repaired, and burgh-bote levied every year, within a fortnight after Rogation days. No perſon whatever was exempt from this ſervice; the king himſelf could not releaſe a man from burgh-bote: yet, in after-times, exemptions appear to have been frequently granted; inſomuch that, according to Cowel, the word burgh-bote came to be chiefly uſed to denote, not the ſervice, but the liberty or exemption from it.

BURGH-*breche*, or *brech*, a fine impoſed on the community of a town, or burgh, for the breach of peace among them.

BURGH-*mails*, were yearly payments to the crown of Scotland, introduced by Malcolm III. and reſembling the FEE-*farm* rents of burghs in England. See MAIL.

BURGH-*maſter*, an officer in the tin mines, who directs and lays out the meers for the workmen, &c. otherwiſe denominated bailiff and bar-maſter, which ſee.

BURGH *ſand buoy*, in *Sea Language*, lies on the coaſt of Holland, W. by S. from the beacons on Voogel ſand. On the Texel iſland are four churches, of which Burgh is the moſt northerly, except Oogh, which has no ſteeple.

BURGHAUN, or BURGHHAUN, in *Geography*, a ſmall town and citadel of Germany, in a bailiwick of the ſame name, in the circle of the Upper Rhine, and biſhopric of Fulda, ſeated on the river Haun, and having two churches, one for the Lutherans, and another for the Catholics; 8 miles N.N.E. of Fulda.

BURGHERMASTERS, BOURGERMESTERS, BURGMESTERS, or BURGOMASTERS, chief magiſtrates in the cities of Germany, Holland, and Flanders; to whom belong the giving of orders for the government, adminiſtration of juſtice, policy, and finances of the place: though the authority and office are not every where alike; each city having its particular laws and ſtatutes.

The word is formed from the two Flemiſh works, *borger*, *burgeſs*, or *citizen*; and *meſter*, *maſter*. Some expreſs it in Latin by *conſul*, others by *ſenator*.—M. Bruneau obſerves, that *burghermaſter*, in Holland, anſwers to what is called *alderman* and *ſheriff* in England; *attorney* at Compeigne; *capitoul* at Tholouſe; *conſul* at Languedoc, &c.

BURGHMOTE, a borough-court; or court held for a town or borough. See COURT and MOTE.

The word is alſo written *burgemotus*, *burgimotus*, *burgmotus*, and *burgemote*, from *burgh*, *oppidum*; and *mote* or *gemote*, *conventus*.

The *burghmote*, by the laws of king Edgar, was to be held thrice in the year: by thoſe of Henry I. twelve times. Burghmote is different from *berghmote*, derived from *berg*, a hill, and *mote*, aſſembly, which denotes an aſſembly or court upon a hill, and is held in Derbyſhire for deciding pleas and controverſies among the miners.

BURGEONES, in *Ancient Geography*, the name of a people placed by Ptolemy in European Sarmatia.

BURGLARY, in *Law*, or *nocturnal houſe breaking*, *burgilatrocinium*, called by our ancient law, and now in Scotland *homeſocken*, an unlawful entering into another man's dwelling, wherein ſome perſon is, or into a church in the night-time; in order to commit ſome felony, or to kill ſome perſon, or to ſteal ſomething thence, or do ſome other felonious act; whether the ſame be executed, or not. This crime has been always regarded as very heinous; partly on account of the terror which it occaſions, and partly becauſe it is a forcible invaſion and diſturbance of that right of habitation, which every individual might require even in a ſtate of nature, and againſt which the laws of civil ſociety have particularly guarded. Whilſt they allow the poſſeſſor to kill the aggreſſor, who attempts to break into a houſe in the night time, they alſo protect and avenge him, in caſe the aſſailant ſhould be too powerful. Such regard, indeed, has the law of England to the immunity of a man's houſe, that it ſtiles it his caſtle, and will never ſuffer it to be violated with impunity; agreeing in this reſpect with the ſentiments of ancient Rome, as expreſſed in the words of Tully (Pro Domo, 41) "quid enim ſanctius, quid omni religione munitius, quam domus uniuſcujuſque civium?" For this reaſon no outward doors can in general be broken open to execute any civil proceſs; though, in criminal cauſes, the public ſafety ſuperſedes the private. See ARREST. Hence, alſo, in part, ariſes the animadverſion of the law upon eaves-droppers, nuſancers, and incendiaries; and to this principle it muſt be aſſigned, that a man may aſſemble people together lawfully (at leaſt if they do not exceed eleven) without danger of raiſing a riot, rout, or unlawful aſſembly, in order to protect and defend his houſe; which he is not permitted to do in any other caſe. 1 Hal. P. C. 547.

The definition of a burglar, as given by ſir Edward Coke (3 Inſt. 63.) is, "he that by night breaketh and entereth into a manſion-houſe, with intent to commit a felony." In this definition, ſays Judge Blackſtone (Comment. vol. iv. p. 224.) there are four things to be conſidered; the *time*, the *place*, the *manner*, and the *intent*.

1. The *time* muſt be by night, and not by day; for in the day time there is no burglary. In conſidering what is reckoned night, the day was anciently accounted to begin at ſun-riſing and to end immediately upon ſun-ſet: but the better opinion ſeems to be, that if there be daylight or twilight ſufficient, begun or left, for diſcerning a man's face, it is no burglary. *3 Inſt. 63.* 1 Hal. P. C. 350. 1 Hawk. P. C. 101. But this does not extend to moon-light: for then many midnight burglaries would go unpuniſhed; and beſides, the malignity of the offence does not ſo properly ariſe from its being done in the dark, as at the dead of night; when the whole creation, except beaſts of prey, is at reſt; when ſleep has diſarmed the owner, and rendered his caſtle defenceleſs.

2. As to the *place*. It muſt be by the definition a manſion-houſe; and, therefore, in order to account for the reaſon why breaking open a church is burglary, as it undoubtedly is, ſir Edward Coke quaintly obſerves, that it is "domus manſionalis Dei." But it is not neceſſary that it ſhould in all caſes be a manſion houſe; for it may be committed by breaking the gates or walls of a town in the night. Accordingly Spelman defines burglary to be "Nocturna diruptio alicujus habitaculi, vel eccleſiæ, etiam murorum portarumve burgi, ad feloniam perpetrandam." No diſtant barn, warehouſe, or the like, has the ſame privileges as a manſion or dwelling-houſe, nor is regarded as a man's caſtle of defence: nor is a breaking open of houſes in which no man reſides, and which, therefore, for the time being are not manſion-houſes, attended with the ſame circumſtances of midnight terror. A houſe, however, in which a man ſometimes reſides, and which the owner hath only left for a ſhort ſeaſon, *animo revertendi*, is the object of a burglary, though no one be in it at the time when the fact is committed. 1 Hal. P. C. 566. Foſt. 77. If a barn, ſtable, or warehouſe be parcel of the manſion-houſe, and within the ſame common fence, though not under the ſame roof, or contiguous, a burglary may be committed in it; for the capital houſe protects and privileges all its branches and appurtenants, if within the curtilage or homeſtall. 1 Hal. P.C. 558. 1 Hawk. P. C. 104. A chamber in a college or an inn of court, where each inhabitant has a diſtinct property, is, to all other purpoſes as well as to this, the manſion-houſe of the owner. 1 Hal. P. C. 556. A room, or lodging, in any private houſe, is alſo the manſion for the time being of the lodger; if the owner doth not himſelf dwell in the houſe, or if he and the lodger enter by different outward doors. But, if the owner himſelf lies in the houſe, and hath only one outward door at which he and his lodger enter, ſuch lodgers ſeem only to be inmates, and all their apartments to be parcel of the one dwelling-houſe of the owner. Kel. 84. 1 Hal. P. C. 556. Thus alſo the houſe of a corporation, inhabited in ſeparate apartments by the officers of the body corporate, is the manſion-houſe of the corporation, and not of the reſpective officers. Foſter, 38, 39. If I hire a ſhop, parcel of another man's houſe, and work or trade in it, but never lie there, it is no dwelling-houſe, nor can burglary be committed in it; but if I or my ſervant, uſually or often lodge in the ſhop at night, it then becomes a manſion-houſe and the object of burglary. If the ſhop-keeper ſleep in any part of the building, however diſtinct that part is from the ſhop, it may be alleged to be his manſion-houſe; provided the owner does not ſleep under the ſame roof alſo. Leach's Hawk. P. C. 1. c. 38, § 16. By 13 Geo. III. c. 38. burglary in the workſhops of the plate-glaſs manufactory, with intent to ſteal the ſtock or utenſils, is declared to be ſingle felony, and puniſhed with tranſportation for ſeven years. No burglary can be committed in a tent or booth, erected in a market or fair, though the owner may lodge in it. 1 Hawk. P. C. 104; but by Stat. 5 and 6 Ed. VI. c. 9. clergy is taken from this offence.

3. As to the *manner* of committing burglary; there muſt be both a breaking and an entry to complete this offence. But they need not be done at once: for, if a hole be broken one night, and the ſame breakers enter the next night through the ſame, they are burglars. 1 Hal. P. C. 551. There muſt in general be an actual breaking, ſo that it may be regarded as a ſubſtantial and forcible irruption. Such are breaking, or taking out the glaſs of, or otherwiſe opening, a window, and taking out goods; picking a lock, or opening it with a key; and lifting up the latch of a door, or looſing any other faſtenings which the owner has provided. But if a perſon leaves his doors or windows of his houſe open, and a man enters by them, or with a hook or by any other means draws out ſome of the goods of the owner, it is no burglary; but if, having entered, he afterwards unlocks an inner or chamber door, or if he comes down a chimney, he is deemed a burglar. If a perſon enters by the open door of a houſe, and breaks open a cheſt and ſteals goods, this is no burglary by the common law, becauſe the cheſt is no part of the houſe; though this is felony ouſted of clergy by Stat. 3 W. and M. c. 9; but if one break open a cupboard or counter, fixed to a houſe, it is burglary. 1 Hal. P. C. 552, 553, 554. 1 Hawk. P. C. 102. So alſo to knock at the door, and upon its being open to ruſh in with a felonious intent; or under pretence of taking lodgings, to fall upon the landlord and rob him; or to procure a conſtable to gain admittance, in order to ſearch for traitors, and then to bind the conſtable and rob the houſe; are all deemed burglarious acts, aggravated by the evaſions that attend any of them. 1 Hawk. P. C. 102. And alſo, if a ſervant opens and enters his maſter's chamber-door with a felonious deſign; or if any other perſon lodging in the ſame houſe, or in a public inn, opens and enters another's door with ſuch evil intent; it is burglary. Nay, if a ſervant conſpires with a robber, and lets him into the houſe by night, this is burglary in both (Stra. 881. 1 Hal. P. C. 553. 1 Hawk. P.C. 103); for the ſervant is doing an unlawful act, and the opportunity afforded him of doing it with greater eaſe rather aggravates than extenuates the guilt. As for the entry, any the leaſt degree of it, with any part of the body, or with an inſtrument held in the hand, is ſufficient; as, to ſtep over the threſhold, to put a hand or a hook in at a window to draw out goods, or a piſtol to demand one's money, are all of them burglarious entries. 1 Hal. P. C. 535. 1 Hawk. P. C. 103. Foſt. 108. When ſeveral come with a deſign to commit burglary, and one does it while the reſt watch near the houſe, the act of one is, by interpretation, the act of all of them. The entry may be before the breaking as well as after; for by Statute 12 Ann. c. 7. if a perſon enters into the dwelling-houſe of another, without breaking in, either by day or by night, with intent to commit felony, or being in ſuch houſe, ſhall commit any felony; and ſhall in the

might break out of the ſame, this is declared to be burglary, although before this act different opinions were held concerning it; Lord Bacon (Elem. 65) holding the affirmative, and Sir Matthew Hale (1 Hal. P. C. 554) the negative. But it is univerſally agreed, that there muſt be both a breaking, either in fact or by implication, and alſo an entry, in order to complete the burglary.

4. As to the *intent:* it is clear, that ſuch breaking and entry muſt be with a felonious intent, otherwiſe it is only a treſpaſs. And it is the ſame, whether ſuch intention be actually carried into execution, or only demonſtrated by ſome attempt or overt act, of which the jury is to judge. And therefore ſuch a breach and entry of a houſe as has been before deſcribed, by night, with intent to commit a robbery, a murder, a rape, or any other felony, are burglary; whether the crime be actually perpetrated or not. Nor does it make any difference, whether the offence were felony at common law, or only created ſuch by ſtatute. 1 Hawk. P. C. 105.

Burglary, as above deſcribed, is a felony at common law, but within the benefit of clergy. The ſtatutes, however, of 1 Edw. VI. c. 12. and 18 Eliz. c. 7. take away clergy from the principals, and that of 3 and 4 W. and M. c. 9. from all abettors and acceſſaries before the fact. And, in like manner, the laws of Athens, which puniſhed no ſimple theft with death, made burglary a capital crime. Pott. Antiq. b. 1. c. 26. For encouraging the proſecution of offenders, it is enacted by ſtatute 10 and 11 W. III. c. 23, that any perſon who ſhall convict a burglar ſhall be exempted from pariſh and ward offices, where the offence was committed. To this, the ſtatutes 5 Ann. c. 31. and 6 Geo. I. c. 23. have ſuperadded a reward of 40l. And if an accomplice, being out of priſon, ſhall convict two or more offenders, he is entitled to a pardon of the felonies enumerated in the act. Moreover, the ſtatutes 25 Geo. II. c. 36, 27 Geo. II. c. 3, and 18 Geo. III. c. 19, provide, that the charges of proſecuting and convicting a burglar ſhall be paid by the treaſurer of the county where the burglary was committed, to the proſecutor and poor witneſſes. The ſtatute 10 Geo. III. c. 48, provides, for preventing the frequent commiſſion of burglaries, that buyers or receivers of ſtolen jewels, gold, or ſilver plate, where the ſtealing ſhall have been accompanied by burglary (or robbery), may be tried and tranſported for 14 years, before the conviction of the principal. And the ſtatute 23 Geo. III. c. 88. enacts, that any perſon apprehended, having upon him any pick-lock key, &c. or other implement, with intent to commit a burglary, ſhall be deemed a rogue and a vagabond, within ſtatute 17 Geo. II. c. 5.

BURGLE, an article of diet of univerſal uſe in the eaſtern cookery. It conſiſts of wheat, prepared by firſt ſoftening the grain in hot water, and then breaking and unhuſking it by means of a hand-mill; it is afterwards dried in the ſun, and thus preſerved for uſe. This food is ſometimes, like rice, made into a "pilaw" (which ſee); but more commonly, being beat up with minced meat, ſuet, and ſpiceries, is formed into large balls, and either boiled or fried. Ruſſell's Aleppo, vol. i. p. 117.

BURGLEN, in *Geography*, a lordſhip of Swiſſerland, which had formerly its own counts, afterwards barons, to both of whom it gave title, but purchaſed, in 1579, by the town of St. Gall. To this lordſhip belongs a parochial village and ſeat of the ſame name, once forming a town, but laid in aſhes by the Appenzellers and the town of St. Gall.

BURGO DE OSMA, a ſmall town of Spain, in Old Caſtile, ſeated on a ſmall river that ſoon after runs into the Duero, near the town of Oſma; 40 miles S. E. of Burgos.

BURGO SAND, lies on the larboard ſide of the channel at the entrance into Liverpool, which ſee.

BURGOMASTER *of Greenland*, in *Ornithology*. See BURGE-*maſter*.

BURGOO, or BURGOUT, a ſea-faring diſh, made of whole oatmeal, or groats, boiled in water, till they burſt; then mixed with butter. It is made in Scotland and in Wales, by mixing oatmeal and water, and boiling it into a moderate conſiſtence. It is a cheap and ſtrengthening diet.

Burgoo, otherwiſe called *loblolly*, is held by Cockburn very proper to correct that thickneſs of humours and coſtiveneſs to which the other diet of ſailors much diſpoſes them. Yet the burgoo victualling is the leaſt liked of all their proviſions, becauſe of the ſcanty allowance of butter to it. The ſame author thinks it might be worth the conſideration of thoſe to whom the care of the ſeamen is committed, to contrive to render this food more agreeable to them.

BURGOS, in *Geography*, a large old city of Spain, the capital of Old Caſtile, and of a province of the ſame name, forming a kind of ſemicircle round a hill, on which is a caſtle, and extending itſelf along the plain to the ſmall rapid river of Arlançon, or Arlanza, over which it has a bridge, and along the bank of which is a handſome paved walk. It is the ſee of an archbiſhop, erected in 1574. The city is irregular, moſt of its ſtreets being narrow and crooked, and its houſes high. It has, however, many fine ſquares adorned with fountains and ſtatues, public buildings, and noblemen's houſes; and preſents, at a diſtance, by its numerous ſteeples and edifices, and particularly the epiſcopal palace, ſituate without the town, a pleaſing view. The cathedral is one of the moſt beautiful and beſt preſerved Gothic ſtructures in Spain; and the chapel, belonging to the convent of the Auguſtines, is magnificent, and famous for its crucifix, to which extraordinary devotion is paid. Bega, one of its ſuburbs, has many convents and hoſpitals; and, among others, a very large one for pilgrims. One of the nunneries is ſaid to contain 150 nuns, moſt of them being of noble extraction; and the royal hoſpital is richly endowed. This city was built in the 9th or 10th century, on the ruins of the ancient Auca. Its ſituation, as it is ſurrounded by mountains, renders the air extremely cold for nine months in the year, and for the other three months very hot. The inhabitants of Burgos are ſaid to ſpeak the beſt Caſtilian, or pureſt Spaniſh, of any in the kingdom. N. lat. 42° 17'. W. long. 3° 42'.

BURGSTADT, or BURGSTADTEL, a ſmall town of Germany, in the circle of Upper Saxony, and lordſhip of Schonberg, in which are ſome ſtuff-manufactures; 3 miles E. of Penig.

BURGSTALL, a town of Germany, in the archduchy of Auſtria, ſeated on the river Erlaph; 12 miles S. E. of Ips.

BURGUETTA, or ELBURQUETTA, a town of Spain, in Navarre, ſituate in the valley of Ronceval, where the rear-guard of Charlemagne, on his return to Spain, was defeated by the Saracens, and Roland, his nephew, ſlain, in the year 778: 8 leagues E.N.E. of Pampeluna.

BURGUI, a town of Spain, in Navarre, ſeated on the Eſca.

BURGUILLER, a town of Spain in Andaluſia, 3 leagues from Seville.

BURGUNDIAN CROSS, in *Heraldry*. Knights of this order were inſtituted on St. Mary Magdalen's day, in 1535, by Charles V. emperor of Germany and king of Spain, after he had reſtored Mulleaſſes, king of Tunis, who was driven out of his kingdom by the noted pirate Barbaroſſa. The emperor being deſirous to gain the love of all thoſe who had valiantly ſignalized themſelves in that war, did, as a reward for their ſervices, confer on them this honour of knighthood, on the day he made his public entry into Tunis; having on the coat he wore in battle, embroidered with a Burgundian croſs, to which was added a ſteel ſtriking ſparks of fire out of a flint, with this inſcription, BARBARIA, which badge was pendant from a gold collar.

BURGUNDIANS, BURGUNDIONES, in *Hiſtory*, were a warlike and numerous people, who, upon the decline of the Roman empire, obtained a permanent ſeat and dominion in the provinces of Gaul. According to Ammianus Marcellinus (l. 28.), and Oroſius (l. 7. c. 19.), they were originally deſcended from the Romans. The latter writer ſays, that Druſus Nero, and his brother Tiberius, the adopted ſons of Cæſar Auguſtus, having ſubdued the interior parts of Germany, left ſeveral camps in the country, and part of their army to keep the neighbouring people in ſubjection: from the Roman ſoldiers, who were on this occaſion left to guard the Roman camps, are deſcended the Burgundians. The caſtles and ſtrong holds, built for the defence of a country, are called by the Germans "burgts;" and hence the Romans, who guarded them, and their deſcendants, were named "Burgundians." As they embraced the Catholic faith, the eccleſiaſtics, whoſe ſpiritual juriſdiction they acknowledged, have deſcribed them as mild and tractable in their diſpoſition; for in the countries where they ſettled, they treated the natives, not as ſtrangers whom they had ſubdued, but as Chriſtian brethren. Pliny the elder (l. iv. c. 16.) ſuppoſes them to be a German nation, deſcended from the Vindili, ſuppoſed to be the ſame people with the Vandals. Valeſius (Rer. Franc. p. 48.) diſtinguiſhes the Burgundians of Germany from thoſe of the ſame name, who dwelt more to the eaſt, on the banks of the Danube. The Burgundians of Germany were ſometimes in alliance, and ſometimes at war, with the empire; and they are repreſented by contemporary writers as inferior in bravery to the other Germans, and as dwelling in caſtles and fortified places, whereas the other German nations ſcorned any fence beſides their arms. See Socrat. Hiſt. Eccleſ. l. vii. c. 30. Moſt of them were mechanics, and, before they ſettled in Gaul, reſorted in great numbers to that country, to earn a ſubſiſtence by their reſpective profeſſions. As to their form of government, they were divided into ſeveral tribes, each of which had its reſpective chief or king, whoſe authority was ſo far from being hereditary, that it was not continued during life. If the events of the war accuſed the courage or conduct of the king or general, called "Hendinos," he was immediately depoſed; and the injuſtice of his ſubjects made him reſponſible for the fertility of the earth, and the regularity of the ſeaſons, which ſeemed to fall more properly within the ſacerdotal department. The perſon of the prieſt, denominated "Siniſtus," was ſacred, and his dignity perpetual. The kings of the Burgundians did not think themſelves degraded by ſerving in the Roman armies, by executing ſome of the chief offices of the empire, and by receiving, from the emperors, ſuch dignities as they uſually conferred upon their ſubjects. To the Burgundians is aſcribed the firſt introduction into Gaul of legal duels, or duels ordered by the magiſtrates or judges, eſtabliſhed in order to diſcover, from the event, the truth of conteſted facts. Gundebald is ſaid to have been the firſt who eſtabliſhed by law this maxim, that the beſt champion is the beſt man, and ought to be believed; a maxim, indeed, which has often proved fatal to innocence. This unjuſt and ſanguinary law was formally iſſued at Lyons, the 27th of June, Abienus being conſul, that is, in 501.

In the hiſtory of the Burgundians nothing particularly worthy of notice occurs till the year 275, the firſt of the emperor Tacitus's reign, when, in conjunction with other barbarians, they croſſed the Rhine, overran all Gaul, and made themſelves maſters of more than 70 cities in that country. But they were ſoon after defeated, and compelled to ſue for peace, by Probus, the ſucceſſor of Tacitus. In 287 they made another irruption into Gaul, together with the Alemanni; but were defeated by Maximian. See ALEMANNI. In the year 370, the 7th of Valentinian I. an army of 80,000 Burgundians appeared on the banks of the Rhine, impatiently expecting the ſupport and ſubſidies promiſed by Valentinian; but after long and fruitleſs expectation, they were compelled to retire. In the year 407, they followed the Vandals, Sueves, and Alans, who had entered Gaul the laſt day of the preceding year, in order to partake in the ſpoils of theſe wealthy provinces; but they did not ſettle in that country till the year 413, when, as it is ſaid, they obtained that part of Gaul which borders on the Rhine, or the preſent Alſace, and the remaining part of Germania Prima, which were ceded to them by Honorius. Thus commenced the kingdom of the Burgundians in Gaul, under Gundicar their firſt king. They afterwards, viz. in 435, in conjunction with the Heruli, the Huns, and the Franks, entered Belgic Gaul, committing dreadful ravages wherever they came; though, upon their firſt ſettling in Gaul, they had promiſed to aſſiſt the Romans, and ſerve in their armies as ſubjects of the empire. Aetius, having defeated their army, reduced them to the neceſſity of ſuing for peace, which, however, was of no long continuance. About this time they embraced Chriſtianity. Having continued on the banks of the Rhine till the year 438, they were removed by Aetius to the preſent duchy of Savoy. During their reſidence here, they made themſelves maſters of ſeveral cities and places in Gaul; ſuch as Lyons, Dié, Vienne, Auvergne, &c. Before the year 490, the Burgundians were maſters of the whole of Lugdunenſis Prima, ſtyled by Sidonius Germania Lugdunenſis; and in the years 514 and 528, it appears, from the acts of the councils of Agde and Epaune, that they were maſters of above 28 cities; and, among others, of Lyons, Vienne, Beſançon, and Embrun. In the year 490, Gundebald, or Gondebaud, conducted them into Italy, where they committed unparalleled ravages in Liguria. At this time the kingdom of the Burgundians was defined by the courſe of the rivers Saone and Rhone, and extended from the foreſt of Voſges to the Alps and the ſea of Marſeilles. Gondebaud, who died in 509, was ſucceeded by his ſon Sigiſmund, who diſpatched an account of his acceſſion to the emperor Anaſtaſius at Conſtantinople, and acknowledged himſelf a ſubject of the empire. Sigiſmund, by the inhuman aſſaſſination of his ſon Sigeric, though he has acquired the honours of a ſaint and martyr, greatly irritated the Oſtrogoths and their king Theodoric, and occaſioned a war between the Franks and Burgundians. In a battle that took place A. D. 523, Sigiſmund was defeated and taken priſoner; and afterwards put to death, being buried alive in a deep well at Orleans; and the greater part of the country ſubmitted to the Franks. The Burgundians, however, ſoon revolted, and proclaimed Gondemar, brother of Sigiſmund, their king, who, after a ſevere conflict with the Franks, concluded a peace with them, on condition that they ſhould reſtore to him all the countries which they had ſeized during the war. This peace laſted 8 years; but in 532 a war broke out between theſe two nations; and Childebert and Clotharius, entering the territories of the Burgundians, laid ſiege to Auguſtodunum, now Autun, and obliged Gondemar to ſave himſelf by flight, and made themſelves maſters of his kingdom, which agreed to ſerve in their wars, and to pay them an annual tribute. But they continued, by agreement with their conquerors, to be governed by their own laws; till the reign of Louis-le-Debonnaire. Anc. Un. Hiſt. vol. 17. Gibbon's Hiſt. Decl. and Fall of the Roman Empire, vol. iv, v, vi.

Burgundians, the denomination of a political party, which, together with the Armagnacs, divided the whole kingdom of France, about the commencement of the 15th century. See Armagnac.

BURGUNDY, in *Geography*, derives its name from the Burgundians (ſee the preceding article), and, before the revolution, was a very conſiderable province of France; bounded on the eaſt by Franche-Comté, on the ſouth by Lyonnois, on the weſt by Bourbonnois and Nivernois, and on the north by Champagne. The government or province of Burgundy contained, beſides the duchy of the ſame name, La Breſſe, of which le Bugey and le Valromey form a part, and the county of Gex. Its extent from north to ſouth is about 60 French leagues, and from weſt to eaſt about 30 leagues. Burgundy is divided lengthways by a chain of mountains, extending from Dijon to Lyons; the eaſtern part of the province is an immenſe rich plain, which terminates in the mountains of Franche-Comté and Savoy, and which is watered by the Saone and other rivers that flow into it; the other part of the province is mountainous, and in many places dry and uncultivated. The principal rivers that water it, beſides the Saone, are the Seine, the Armançon, the Yonne, the Serain, the Ouche, the Deune, which runs into the Saone near Verdun, the Arroux, the Bourbonince, the Rhone, the Loire, and the Doubs. The mineral waters of this duchy are thoſe of Apoigni near Seignelay, Premeau near Nuits, Vevelay, Sainte-Reine, and Bourbon-l'Ancy. The province is fertile in various kinds of grain and fruit, tobacco, hemp, and flax; and among its wines, which are excellent, we may reckon thoſe of Nuits, Beaune, Dijon, Vollenay, Pomard, Chaſſagne, Meurſault, Voſne, Savignè, Mercy, Chambolle, Givri, Mercurey, Romaneé, la Tache, Richebourg, Saint-George, and Chamberlin. The mountains furniſh excellent paſture for cattle and horſes. Its mines afford ores of various metals, particularly iron, different ſorts of ſtones, marble, granite, and alſo coal, and ochre for dyeing. Its foreſts ſupply abundance of wood. It has alſo various manufactures of iron, wool, linen, and cotton. Its corn, wine, iron, wood, wool, and cattle, furniſh the principal articles of commerce. The diſtrict of Breſſe has ſubterraneous lakes; and the cave of Arcy, as well as the ſalt ſpring of Vezelay, are worthy of notice. The principal towns of Burgundy are Dijon, the capital, Beaune, Chatillon-ſur-Seine, Auxerre, Autun, Chalon, Maçon, Bourg, Belley, Gex, &c. Since the revolution, Burgundy is diſtributed into the departments of the Yonne, Côte d'Or, the Saone and Loire, and the Ain.

The ancient kingdom of Burgundy formed three provinces in the 5th and 10th centuries. The firſt was that of Provence, which ſome authors have called the kingdom of Burgundy Cis-Jurana, in reference to mount Jura, now called Mont St. Claud. This was eſtabliſhed in 855, in favour of Charles, third ſon of the emperor Lothario I., and comprehended Provence, properly ſo called, i. e. the country contained between the Durance, the Alps, the Mediterranean, and the Rhone, together with the duchy of Lyons. The ſecond was formed in 888 on the other ſide of mount Jura, and called Burgundy Trans-Jurana. It comprehended little beſides Switzerland, the Valais, the Geneveſe and Chablais. The third kingdom was that of Arles, founded in 930, by the re-union of the kingdoms of Provence and Burgundy Trans-Jurana, in favour of Rodolphus II., who was before king of Burgundy Trans-Jurana only. The kings of France poſſeſſed themſelves ſucceſſively of this ſtate: but the duchy of Burgundy, part of the late government of Burgundy, was never comprehended within the kingdom of Burgundy Cis-Jurana, or in that of Burgundy Trans-Jurana. It formed a diſtinct ſtate, which continued ſubject to the kings of France. In the partition which took place in 843 between the ſons of Louis le Debonnaire, Charles-le-Chauve had the part of the kingdom which was ſituated to the weſt of the Saone; and it was governed by dukes. But the power of theſe dukes gradually advanced to ſuch a height, that one of them, named Rodolphus, in the time of Charles the Simple, was elected king of France. This dutchy paſſed afterwards to Hugh the Great, duke of France, who proved a troubleſome neighbour to Rodolph; and his ſon, Hugh Capet, ſeated himſelf and family on the throne of France. His ſon and ſucceſſor, Robert, having inherited Burgundy, gave it to Henry, his eldeſt ſon, who ſucceeding to the throne of France, aſſigned it in 1032 to Robert I., his younger ſon, who was the head of the firſt ducal race of Burgundy. This ſubſiſted for 330 years, and became extinct in 1361 in the perſon of Philip I., who died without iſſue. King John, being ſon to a princeſs of Burgundy, in 1361 united this duchy with the crown, and in 1363 conferred it on his ſon Philip the Bold, in whom the ſecond ducal line commenced. With his great grandſon Charles the Warlike, who loſt his life before Nancy in 1477, the ſecond line terminated. Although he left a daughter, Mary, who married Maximilian, archduke of Auſtria, and John, prince of Burgundy, count of Nevers and Rethel, who did not die till 1491; Lewis XI. ſeized upon the duchy, and united it to his crown, which has ſince retained it, notwithſtanding the repeated claims and endeavours of the houſe of Auſtria to recover it. The various poſſeſſions of the dukes of Burgundy rendered them the moſt conſiderable power in Europe; and in 1433 a decree of Bayle aſſigned to Philip the Good the firſt rank after kings, and named him the firſt duke of the Chriſtian world. The dukes of Burgundy were the firſt ancient peers of France. At the king's coronation they bore the crown, and girded on him the ſword.

Burgundy, *Circle of*, a circle of the German empire, made a part of it in 1512 under the emperor Maximilian. It took its name from the province of Burgundy, now diſmembered from the empire, and belonging to France, and has long ſince ceaſed to be reckoned among the circles of the empire. It was formerly under the directorſhip and ſovereignty of the king of Spain, and comprehended not only Higher Burgundy, or Franche Comté, but likewiſe the 17 provinces of the Low Countries, which in the reign of Charles V. were received as members of the empire.

Burgundy *Pitch*, ſee Pitch.

Burgundy *Pitch*, plaſter of. See Plaster.

BURGWARD, *Burgwardus*, or *Burgwardium*, in *Middle Age Writers*, the ſame with Bulwark. The name is alſo extended to the town, and even the country about ſuch a fortreſs. It is formed from the Teutonic *burg*, *town*, and *ward*, *cuſtody*, *keeping*.

BURHANPOUR, in *Geography*, a city of Hindooſtan, and capital of the Candeiſh country, and at one period, of the Deccan alſo. It is a fine flouriſhing city, and is ſituated in the midſt of a delightful country. This was one of the earlieſt conqueſts in the Deccan; and it is now in the hands of the Poonah, or weſtern Mahrattas. About 20 miles to the

the N. E. of it is a very ſtrong fortreſs, named Aſeer, or Aſeergur. It has a conſiderable trade in fine cottons, white and painted, plain, and mixed with gold and ſilver, for veils, ſhawls, handkerchiefs, &c.; 135 miles N. of Aurungabad, and 625 S. of Delhi. N. lat. 21° 19′. E. long. 76° 22′.

Burhanpour, a town of Hindooſtan, in the country of Bengal; 10 miles S. of Moorſhedabad, and 100 miles N. of Calcutta.

BURIAH, a river of Hindooſtan, which runs into the Jumnah, 20 miles S. of Delhi.

BURIAL. The act of interring a deceaſed perſon.

Of the various modes of burial which have prevailed in the world, it was Cicero's opinion, (De Leg. ii. 22.) that *inhumation* was the oldeſt: and the records of hiſtory undoubtedly corroborate the notion. *Burning*, and incloſing the remains in urns, were perhaps never found expedient, till national animoſities had given riſe to inhuman treatment of the dead.

The common conſent of mankind, from the beginning of time to the preſent moment, has concurred in the propriety and decency of interment: it is a natural act inſpired by humanity; a practice, which has been continually obſerved by enemies in time of war; and but rarely denied in any country, but to thoſe who have violated either the laws of God or nature. The duty of ſepulture, and inſtances of the diſcharge of it, continually occur in Scripture. David paſſes high encomiums on the men of Jabez-Gilead who reſcued the bones of their king and prince from the enemy's walls, and committed them to their family vault. (2 Sam. ii. 5.) It is part of the praiſe of Tobit that he went about burying his murdered countrymen, at the hazard of his life. And Jeremiah threatens it as the greateſt of puniſhments, that the wicked ſhould be deprived of burial, and left on a dunghill: (Jer. viii. 2.) or as it is emphatically expreſſed, buried with the burial of an aſs. Herodotus tells us, (Euterpe, xc.) that in Egypt, if either a native or a foreigner was found either deſtroyed by a crocodile, or drowned in the water, the city neareſt which the body was diſcovered was obliged to embalm it, and pay it every reſpectful attention, and afterwards depoſit it in ſome conſecrated place. Iſæus brings it as a proof that Cleon was not the ſon of Aſtyphylus, becauſe he neither buried him, nor performed his funeral exequies. (Orat. de Hereditate Aſtyphyli.) A law of Athens compelled the burial of a dead body found by accident, and pronounced the refuſer impious. Servius on Virgil (Æn. vi. 176.) ſays, writers on moral duties place the duty of interring the dead among the firſt. It was profanation for a prieſt to look on a dead body, but the height of impiety to leave it unburied. The Athenians carried their attention to the dead beyond the grave: and Solon, by an expreſs law, forbad any reflections on their character. On this law Plutarch thus comments: "Piety ſhould induce us to reverence the dead; juſtice ſhould prevent us from intermeddling with the affairs of thoſe who no longer exiſt; and policy ſhould lead us to prevent the perpetuity of enmity." (Solon, p. 89. E.) Demoſthenes extends the caution ſtill further: not even any provocation from ſurvivors of the family ſhould urge us to any reflections on the dead; (in Leptonein, p. 298.) and every citizen was at liberty to bring an action againſt the abuſive party. (Ulpian in loc. Demoſthenes in Bœotos, p. 588. Suidas.) The Cynics, however, ſeem to have regarded burial with contempt; and Pliny (H. N. l. vii.) ranks concern about it amongſt the weakneſſes peculiar to man.

Among the earlieſt inhabitants of the world, neither the modes nor the appropriate place of burial can now be aſcertained. Nor does it ſeem that the latter, even in the middle periods of Jewiſh hiſtory, was always particularly determined. For we find they had graves and ſepulchres both in the town and country, in fields, upon the highways, in gardens, in their own houſes, and upon mountains: though the general cuſtom ſeems to have been, that the dead ſhould be interred without the city. They appear in many caſes alſo to have thought it a misfortune not to be buried with their fathers. In Geneſis (xv. 15.) when the affliction of Abraham's poſterity was foretold, it was promiſed that he ſhould *go to his fathers in peace*, and *be buried in a good old age*. He afterwards pleads moſt pathetically with the ſons of Heth (xxiii. 3—13.) for the purchaſe of a burial place for Sarah. It was in the cave of the field of Machpelah; and it afterwards received the bodies of himſelf, of Iſaac, and of Jacob.

Joſeph's body, having been embalmed, and put into a coffin, in Egypt, was brought away by the Iſraelites when they quitted the country, and buried in a plot of ground in Shechem, which Jacob had purchaſed of the ſons of Hamor (Gen. l. 25. Joſh. xxiv. 32.) Moſes was ſecretly buried in a valley in the land of Moab, (Deut. xxxiv. 6.) and no man knew of his ſepulchre. Eleazar, the ſon of Aaron, was buried on a hill. (Joſh. xxiv. 33.) Joab, in his own houſe in the wilderneſs. (1 Kings ii. 34.) Manaſſeh and Amon, in the garden of Uzza; (2 Kings xxi. 18. 26.) and Rehoboam, Aſa, Jehoſaphat, Joram, Amaziah, Azariah, Jotham and Ahaz, in the city of David, with their fathers. "Joaſh, too, was buried in the city of David," but not in the ſepulchres of the kings. (2 Chron. xxiv. 25.)

From the profane writers of antiquity we learn the practice among other nations: and not only from *their* authority, but from daily obſervation, we find the high raiſed *Tumulus* continued a mark of reſpect amongſt the living, and a ſignal honour amongſt the dead in every age of which we have any record. *Barrows* are the moſt ancient ſepulchral monuments in the world: and their contents are as various as the different people that occupied the globe, or the different circumſtances by which they were diſtinguiſhed. The pyramids of Egypt are but barrows of a more ſolid material; and the church-yard hillock of the preſent day is but a relic of their univerſal prevalence. Homer is very particular in deſcribing the barrow of Patroclus. It was firſt marked out with a circle; the foundations were then laid round the very ſpot where the funeral pile was ſtill uncooled, and the earth thrown up over them.

> Τορνωσαντο δε σημα, θεμειλια τε προβαλοντο
> Αμφι πυρην· ειθαρ δε χυτην επι γαιαν εχευαν.
> Χευαντες δε το σημα, παλιν κιον. Il. ψ. 255—257.

The remains of the body were collected in a golden urn, but (which is ſingular) were not lodged beneath the barrow.

Among the diſtinguiſhed barrows of Greece may be ranked that of Egyptus in Arcadia, which Pauſanias deſcribes as not very large, and ſurrounded by a margin of ſtone: Της χωμα ȣ μεγα, λιθȣ κρηπιδι εν κυκλω περιεχομενον: (Arcad. c. 16.), and which Homer admired (Il. B 603.), as not having ſeen a finer. That of Icarus was a ſmall one, on a headland where he was caſt away: (Pauſan. Bœot. c. 11.) and that of Achilles in a ſimilar ſituation. (Odyſſ. Ω. 36.) See Barrow.

With the Egyptians, and the ancient Greeks, (ſee Plato, Minoe prope fin.), perſons were occaſionally buried, as we have already mentioned in the caſe of Joab, in their own houſes: while in other inſtances hills and rocks were not only receptacles for the ancient inhabitants of Greece, Sicily and Aſia, but of the *Perſians*, and, to this day, of the Chineſe. The general practice of burial, however, among the ancient Perſians, is thus related by Herodotus, (Clio. cxl.)

“ I will not affirm it to be true, that theſe never are interred till ſome bird or dog has diſcovered a propenſity to prey on them. This, however, is unqueſtionably certain of the Magi, who publicly obſerve this cuſtom. The Perſians firſt encloſe the dead body in wax, and afterwards place it in the ground.” The cuſtom to which Heredotus here particularly alludes as the excluſive privilege of the Magi, was afterwards univerſally adopted: and, in part, ſtill continues. The place of burial of the Guebres, at the diſtance of half a league from Iſpahan, is a round tower made of free ſtone: it is 35 feet high, and 90 in diameter, without gate, or any kind of entrance; they aſcend it by a ladder. In the midſt of the tower is a kind of trench, into which the bones are thrown. The bodies are ranged along the wall in their proper cloaths, upon a ſmall couch, with bottles of wine and victuals. The ravens which fill the cœmetery, devour them (Chardin's Travels.) An exact model of this curious tower is preſerved in the Britiſh Muſeum.

Among the Egyptians, the body having been embalmed by perſons legally appointed to the exerciſe of the profeſſion, was returned to the relations, who encloſed it in a caſe of wood made to reſemble an human figure, and placed it againſt the wall in the repoſitory of their dead. (Herod. Euterpe, lxxxvi.)

The cuſtom of *burning* the dead, to which we have already alluded, is, however, of higher antiquity than we may at firſt ſuppoſe. Saul was burnt at Jabeſh, and his bones afterwards buried; and Aſa was burnt in the bed which he had made for himſelf, filled with ſweet odours, and divers kinds of ſpices; but the practice exiſted, we are aſſured, neither in Perſia nor Egypt: the Perſians thought it profane to feed a divinity with human carcaſes; and the Egyptians abhorred it on another account, being fully perſuaded that fire was a voracious animal, which devoured whatever it could ſeize; and when ſaturated, finally expired with what it had conſumed. The Egyptians alſo held it unlawful to expoſe the bodies of the dead to animals; for which reaſon they embalmed them, fearing leſt after interment, they might become the prey of worms. (Herod. Thalia, xvi.) In Perſia, too, at the time Herodotus wrote, the cuſtom of *burying alive* was common: and he was told that Ameſtris, the wife of Xerxes, when ſhe was of an advanced age, commanded fourteen Perſian children of illuſtrious birth to be interred alive in honour of the deity whom they ſuppoſed to exiſt under the earth. (Polymnia, cxiv.)

Of the ancient *Ethiopian* practice we have a more minute deſcription, related on the tradition of Cambyſes' ſpies. “ After all the moiſture is extracted from the body, by the Egyptian, or ſome other proceſs, they cover it totally with a kind of plaſter, which they decorate with various colours, and make it convey as near a reſemblance as may be of the perſon of the deceaſed. They then incloſe it in a hollow pillar of cryſtal, which is dug up in great abundance, and of a kind that is eaſily worked. The deceaſed is very conſpicuous through the cryſtal, has no diſagreeable ſmell, nor any thing elſe that is offenſive. This coffin the neareſt relations keep for a twelvemonth in their houſes, offering before it different kinds of victims, and the firſt-fruits of their lands. Theſe are afterwards removed, and ſet up round the city.

The funeral ceremonials attending the *Scythian* kings were ſtill more ſingular. They were embalmed, and afterwards tranſported through the different provinces of their kingdom, till they were at laſt brought to the Gerſhi, in the remoteſt parts of Scythia. Here the corpſe was placed upon a couch, (round which, at different diſtances, were fixed daggers; and upon the whole, pieces of wood covered with branches of willow) in a trench, nigh the ſpot where the Boryſthenes begins to be navigable. In ſome other parts of this trench one of the concubines of the deceaſed, who had been previouſly ſtrangled, together with his baker, cook, groom, moſt confidential ſervants, horſes, and choiceſt effects, were buried; and a mound as high as poſſible raiſed above the whole. (Herod. Melpomene, lxxii.) With regard, however, to the Scythians in general, the practice was more ſimple. When any one died, the neighbours placed the body on a carriage, and carried it about to the different acquaintance of the deceaſed; theſe prepared ſome entertainment for thoſe who accompanied the corpſe; placing before the body the ſame as before the reſt. Private perſons, after being thus carried about for the ſpace of forty days, were buried. But the Scythians did not all of them obſerve the ſame cuſtoms with reſpect to their funerals: there were ſome who ſuſpended the dead bodies from a tree, and in that ſtate left them to putrefy. “ Of what conſequence,” ſays Plutarch, “ is it to Theodorus, whether he rots in the earth, or upon it? Such with the Scythians is the moſt honourable funeral.” The cuſtom is alſo mentioned by Silius Italicus:

> “ At gente in Scythicâ ſuffixa cadavera truncis,
> Lenta dies ſepelit, putri liquentia tabo.”

The African Nomades obſerved the ſame ceremonies with the Greeks, but the *Naſamones* buried their deceaſed in a *ſitting attitude;* and were particularly careful as any one approached his end, to prevent his expiring in a reclined poſture. (Herod. Melpomene, cxc.)

From the anecdotes of burial which have already been detailed, it ſhould ſeem, that both among the Jews and Heathens, the place of interment was uſually without the city. Such, alſo, was the caſe with the Athenians, the Smyrnæans, the Sicyonians, the Corinthians, and the Syracuſans. The examples of Numa and Servius Tullus prove, that the Romans depoſited their dead without the city, before the introduction of the twelve tables: and it was a ſpecial privilege granted by the ſenate to particular perſons, that they ſhould be buried within the walls; (Cic. de Leg. ii. 23.) and the Jews, at leaſt in the latter days of their exiſtence as a nation, as we learn from the inſtances of Lazarus, (John xi. 38.) the widow's ſon at Nain, (Luke vii 13) and the dead that were raiſed at the crucifixion, (Matt xxvii 53.) obſerved the ſame place of burial. The *Lacedæmonians,* however, buried within it. It had been a notion univerſally prevalent, that the touch of a dead body conveyed pollution; and Lycurgus, the legiſlator of Sparta, was ambitious to remove the prejudice. He not only introduced the cuſtom of burial within the city, but erected monuments near the temples, that the youth might be trained from their infancy to the view of ſuch objects, nor ſhudder at the ſpectacle of death.

The ancient Greeks and Romans were ſtrongly perſuaded that their ſouls could not be admitted into the Elyſian fields, till their bodies were committed to the earth: and if it happened that they never obtained the rites of burial, they were ſuppoſed to remain in a wandering ſtate, excluded from the happy manſions, for the term of 100 years. For this reaſon it was conſidered as a duty incumbent upon all travellers who ſhould meet with a dead body in their way, to caſt duſt or mould upon it three times; and of theſe three handfuls, one, at leaſt, was caſt upon the head.

Of thoſe who were allowed the rites of burial, ſome were diſtinguiſhed by particular circumſtances of diſgrace attending their interment: perſons killed by lightning were buried apart by themſelves, being thought odious to the gods; (ſee Plin. ii. 54.) thoſe who waſted their patrimony, forfeited the right of being buried in the ſepulchres of their fathers: and thoſe who were guilty of ſelf-murder, were privately depoſited in the ground, without the accuſtomed ſolemnities.

The *Athenian* law mentioned by Ælian, (vii. 19.) obliged them to place the body to the weſt. This was the original poſition of the Athenians, as Solon ſhewed in defence of his countrymen's claims to Salamis; for on opening the graves in that iſland, he proved that the Athenians in it were ſo buried in a regular manner, but the Megarenſian invaders at random, and juſt as it happened. Laertius (Solone) ſays, the Athenians, and the ſcholiaſt on Thucydides, all the Greeks lay buried toward the eaſt; that is, as Kuhnius on Ælian, (loc. cit.) properly explains it, with their faces looking to the eaſt, and their heads to the weſt. This practice among Chriſtians has been ſuppoſed to have a reference to the general reſurrection. The motive for it among the Heathens has not been aſſigned.

The Athenian practice, however, with regard to thoſe who died in the defence of their country, was at once ſo patriotic and affectionate, that it cannot but deſerve particular attention. It affords an elevated idea of that poliſhed people. About three days before the funeral, the bones of the ſlain were placed in a tent raiſed on purpoſe, ſo that every perſon might have an opportunity to frequent them, and pay the laſt tribute of a tear. All ſorts of odoriferous herbs and flowers were ſtrewed around the tent; and each man brought ſome in his hand, that he might conſecrate them to the manes of his favourite friend. On the fourth day a coffin of cypreſs was ſent from every tribe, to carry off the bones of their own members. After which went an empty covered hearſe, in memory of thoſe who could not be found. The proceſſion was carried on with a peculiar decency of ſorrow, whilſt great numbers of inhabitants, both ſtrangers and citizens, aſſiſted in the train of mourners. The parents of the deceaſed attended at the ſepulchre to weep. No eye could refrain from tears; and the melancholy diſtreſs which appeared in the faces of all alike, ſeemed but a true copy of the ſentiments of all. The bones were accompanied in this manner to the public place of burial, ſituated in a pleaſant ſpot without the city, called *Ceramicus*, and committed to the ground. The monument erected to the valour of theſe citizens was adorned with pillars, trophies, and inſcriptions, ſuch as were uſual about the tombs of the moſt honourable perſons, and the ceremony concluded with one ſpeech in praiſe of them all; the main ſcope of which was, to animate the living with reſolution, by commending the courage of the dead; to infuſe a ſpirit of patriotiſm into the minds of their fellow citizens, by celebrating the principle of action which incites the valiant to battle. (Thucyd.)

The ceramicus was the place where the ſlain in battle were always buried, except thoſe who fell at Marathon, whoſe diſtinguiſhed merit entitled them to a monument upon the ſpot.

Among the *Romans*, inhumation, we find, was preferred by Numa, the Cornelian family, and Caius Marius; but both Virgil and Ovid ſpeak of burning as the practice before the foundation of Rome; the former (Æn. xi. 208.) in the inſtance of Pallas; the latter (Faſt. iv. 853.) in that of Remus. Plutarch ſays, Numa forbade it in his own caſe; and the law of the Twelve Tables forbade *burning* as well as *burial* within the city. Tacitus (Ann. xvi. 6.) ſays, Poppæa's corpſe was not burned according to the Roman faſhion. It is a miſapprehenſion of Capitolinus's words to ſuppoſe Antoninus prohibited it. Macrobius (vii. 7.) who lived under Theodoſius the younger, ſpeaks of it as left off in his time. (See Mr. Gough's Sepulchral Mon. of Great Britain.)

The drapery of the dead among the Romans was the *toga*, which was white in all caſes except in that of the poor, who had it black. The magiſtrates and military men were wrapt in their purple robes of honour, or *togæ pretextatæ*; or other precious garments of various colours. Perſons of rank and fortune were buried in their official habits. Mark Anthony gave his own robe to cover the body of Brutus. By the laws of the Twelve Tables crowns were allowed to be worn on theſe occaſions by thoſe who had merited them, and garlands and flowers were caſt on the body as it paſſed. The funerals of great men were conducted at the public expence. But the bodies of the Roman ſlaves were thrown to rot in holes dug perpendicularly, called *puticuli*. (Phil. Tranſ. N° 265.)

Having thus traced the conformity and occaſional variation of practice among the more ancient nations in the article of ſepulture, it may be worth while to deduce its hiſtory in England.

Both cremation and ſimple interment were druidical and ancient Britiſh faſhions. The latter rite, however, was obſerved with the wild addition of whatever was of uſe in this life, under the notion that it would be wanted by the deceaſed in the world below; and in confirmation of this, arms and many ſingular things, of unknown uſe, are to this day diſcovered beneath the places of ancient ſepulture. (Pennant's Tour in Wales, p. 381.) Barrows were their oldeſt tombs. Beneath ſome we find urns; beneath others ſkeletons; and in many inſtances, both. (Gough's Sep. Mon. I. iv.) The kiſt-vaen or coffin, compoſed of rough ſtones ſet edgeways, at the ſides and ends, was another receptacle of the dead anciently uſed in Britain; (Ibid. p. xvi.) theſe are frequent in Wales; but ſeldom found to contain ſkeletons, or remains of bodies in them. See Dr. Stukeley's Abury (p. 13.) of one found in a barrow at Rowldrich; and another (p. 49.) ſimilar, in Monkton field near Abury. Two that were found in Purbeck, on making a turnpike road to Corfe, had ſkeletons in them. Of this earlier kind and date were the rude ſtone cheſts under barrows in Orkney, which contained entire bodies. The Tartarian barrows have abſolute ſtone vaults under them. (Archæol. ii. 222.)

The next and laſt improvement of the ſtone coffin, was by forming it of a ſingle ſtone with mallet and tool; and this Dr. Pegge aſcribed to the Romans; for he apprehended that during the general prevalency of the cuſtoms of cremation and urn-burial among the Romans, they had not always recourſe to the funeral pile, but that bodies were ſometimes interred whole and in their natural ſtate. (Sep. Mon. I. xx.) Inſtances of Roman coffins of ſeveral pieces of ſtone are cited by Mr. Gough in the Sepulchral Monuments (vol. I. p. xxi.); and others, (p. xxvi.) to prove that the Romans uſed brick coffins, or ſarcophagi, in their earlieſt periods. In the celebrated family vault of the freedmen of Auguſtus and Livia, diſcovered by the ſide of the Appian way, about a mile out of Rome, 1725; among a few marble ſarcophagi were two of *baked-earth*, made to contain the body whole. The Romans in Britain buried their warriors near the *via ſtrata* or military ways: and hence we may derive the frequent inſcription of SISTE or ASPICE VIATOR.

Woden enacted a law for burning the dead, which not only the *Saxons* and the *Danes*, but the remote *Sarmatæ*, and all the *Scandinavian nations* regularly obſerved; and tumulated the aſhes, with or without urns, as circumſtances required. The *Danes* diſtinguiſhed by this, and the different funeral ceremonies three ſeveral epochs. (Worm. Mon. Dan. p. 40.) The firſt, which was the ſame with that in queſtion, was called *Roiſold* and *Brentetijde* or the age of burning. The ſecond, was ſtyled *Hoigold*, and *Hoielſetijde*, or the age of tumuli or hillocks. The corpſe at this period was placed entire, with all the ornaments which graced it during life. The bracelets, or arms, and even the horſe of the departed hero were placed behind the heap. Money, and all the rich property of the deceaſed, uſed to be buried with him, from the perſuaſion that the ſoul was immortal (Pomp. Mela, l. iii. c. 2.) and would ſtand in need of theſe things in the other life.

Among the northern nations, when piracy was eſteemed honourable, theſe illuſtrious robbers directed that all their rich plunder ſhould be depoſited with their remains, (Bartholinus Antiq. Dan. 438.) in order to ſtimulate their offſpring to ſupport themſelves, and the glory of their name by deeds of arms. Hence it is we hear of the vaſt riches diſcovered in ſepulchres, and of the frequent violation of the remains of the dead, in expectation of treaſures, even for centuries after this cuſtom had ceaſed. The third age was called *Chriſtendoms-old*, when the introduction of Chriſtianity put a ſtop to the former cuſtoms.

From the remarks of the writers who have been already cited, we learn that the cuſtom of burning, among the ſeveral nations ceaſed with paganiſm. It therefore fell firſt into diſuſe with the Britons; for it was for ſome time retained by the Saxons after their conqueſt of this kingdom; but was left off on their receiving the light of the goſpel. The Danes retained the cuſtom of urn-burial the laſt of any: for of all the northern nations who had any footing in theſe kingdoms, they were the lateſt who embraced the doctrines of Chriſtianity.

With regard to the barrows or tumuli, ſo frequent through the country, we have no good criterion by which a correct judgment may be made of the people to whom the different ſpecies belong: whether they are Britiſh, Roman, Saxon, or Daniſh. Some of them conſiſt of heaps of naked ſtones, ſuch as thoſe in the iſle of Arran; in many parts of Scotland; and in ſome parts of Cornwall. Others are compoſed with ſtones and earth, nicely covered with earth and ſod. And they were ſometimes of earth only. The ſize of the tumulus uſually marked the quality of the perſon: and the earth and ſods, which were ſkimmed and paired from the ſurface round it, were lightly heaped up, and conferred on the deceaſed the laſt good wiſh, *Sit tibi terra levis*. The generality of theſe were round; but others were conical; and ſome, as on the plains of Wiltſhire and at Rollwright, of an oblong form. Finally, other places of ancient ſepulture conſiſted only of a flat area, encompaſſed like the druidical circles, with upright ſtones; and ſuch were thoſe of Ubbo, and of king Harald in Sweden. (Suecia Antiqua and Hodierna, tab. 315.)

The urns are alſo found placed in different manners, with the mouth reſting downwards upon a flat ſtone, ſecured by another above; or with the mouth upwards, guarded in a like way.

Very frequently the urns are diſcovered lodged in a ſquare cell compoſed of flags; and ſometimes more than one of theſe cells are found beneath a *carn* or *tumulus*. Mr. Pennant even met with no fewer than ſeventeen, near Dupplin in Perthſhire, diſpoſed in a regular form. The urns found in theſe cells are uſually ſurrounded with the fragments of bones that had reſiſted the fire; for the friends of the deceaſed were particularly careful to collect every particle; which they placed, with the remains of the charcoal, about the urns, thinking the neglect of it the utmoſt impiety. (Pennant's Tour in Wales, loc. cit.)

The introduction of Chriſtianity made a great alteration in the mode of burying the dead. Cremation ceaſed. The believing Romans betook themſelves to the uſe of ſarcophagi. The Romanized and converted Britons would naturally do the ſame. The Saxons as the ſucceſſors of the Britons inclined from the very firſt to adopt their practices. And after the arrival of St. Auſtin in 596, and the conſequent converſion of the nation, coffins, as well as the mode of placing the body to the eaſt, univerſally took place. The oldeſt inſtance of a coffin that we know of in the Saxon times, was that of Etheldreda in 695 (Sep. Mon. I. xxvii.); and from this time downward, ſtone coffins have been continually diſcovered in every part of England. They may be regularly traced among us from the ninth century to the reign of Henry III.: and in ſome caſes to that of Henry VIII. (Gent. Mag. 1759. p. 66.)

In the Norman times it was the cuſtom to bury monks in the bare ground. Warin, the twentieth abbot of St. Albans, in 1195, ordered that they ſhould be buried in ſtone coffins as more decent. (Matt. Paris, vit. ab. Albani p. 95.)

Among the primitive Chriſtians burying in cities was not allowed for the firſt 300 years, nor in churches for many ages after; the dead bodies being firſt depoſited in the atrium or church-yard, and porches, and porticoes of the church. On the introduction of Chriſtianity into this country, a regular form of diſpoſing of the dead bodies took place. The altar in the firſt Chriſtian baſilic was placed in the eaſt of it, under a window, to receive the firſt advantage of light, or in conformity with what is ſaid of our Lord's aſcenſion. The people for greater regularity in worſhip were taught to look towards the altar; and the dead for a ſimilar reaſon, were buried with their faces the ſame way; except the prieſts who were ordered by the ſame authority to face the congregation. The reaſon alleged by Gregory the Great for burying in churches or in places adjoining to them, was that their relations and friends, remembering thoſe whoſe ſepulchres they beheld, might hereby be led to offer up prayers for them. Hence too that ſtriking and ſolemn addreſs which marked the epitaphs of the monkiſh ages: *Orate pro anima miſerrimi peccatoris*. Gregory's reaſon was afterwards transferred into the body of the canon law. To this ſuperſtition, and the profit ariſing from it, we may aſcribe the original of church-yards. In the eighth century, the people began to be admitted into them, and ſome princes, founders, and biſhops, into the church. The practice, firſt introduced into the Romiſh church by Gregory the Great, was brought over here by Cuthbert, archbiſhop of Canterbury, about the year 750: and the practice of erecting vaults in chancels and under the altars was begun by Lanfranc, archbiſhop of Canterbury, when he had rebuilt the cathedral there, about 1075. From that time the matter ſeems to have been left to the diſcretion of the biſhop.

It was remarked to the writer of the preſent article by a learned antiquary, who is now no more, that in ancient times in this, and perhaps in other countries, then Roman Catholic, interment was never practiſed on the north ſide of the church. An opinion prevails that it was left for malefactors, for the unbaptized, for ſuicides, and for ſuch as had incurred the greater cenſure of the church: and common obſervation will confirm the fact, at the preſent moment, that many more graves occur on the ſouth than on the north ſides of our churches. An extract from a letter of Mr. Samuel Denne (the gentleman above alluded to) affords a curious illuſtration of what has been aſſerted. "There is reaſon to believe that fifty years ago the north ſide of the church-yard of Wilmington (in Kent), might be unoccupied by corpſes; and in 1733, on digging a grave to the north of John Chapman's head-ſtone, for the interment of Richard Harman of Stonehill, not a human bone was found, nor were there any marks of the ground's having been before moved. But in 1745 and 1746, when the hoſpital of the regiments of infantry encamped upon Dartford-heath, was in the manſion houſe formerly belonging to the Langworth family, 35 ſoldiers who died in the hoſpital were buried in this ſpot.

"On opening the ground for the interment of one of them, midway between the wall of the church, and the fence of the church-yard, and about ten feet to the weſt of Mr. Fowke's tomb, John Woodmanſey, the pariſh clerk, diſcovered an earthen pot containing money, of ſilver. The quantity was not known, nor does any attention ſeem to have been ſhewn to the date of the pieces laſt coined. In conſequence of this omiſſion there is an ignorance of one circumſtance that might nearly have aſcertained in which national commotion this treaſure was concealed. It is, however, an obvious remark that the owner of it thought this quarter of the church-yard a very ſecure place, which adds weight to the opinion, I have already hinted, that the pariſhioners of that age had an inſuperable objection to the burying of their relations and friends behind the church."

In regard to the rites of burial as they are practiſed in the more diſtant quarters of the globe, our obſervations will be few. In *Japan*, *Peru*, *Pegu*, *Mexico*, *Tartary*, *Siam*, and the *Great Mogul's dominions*, the dead are burned: and for people of ſuperior conſideration the fires are made with aromatic woods, gums, balſams, and oils. In *China*, we are told it was formerly the cuſtom to bury ſlaves with emperors and princes, and ſometimes alſo their concubines alive; but this cruel practice has given way, in modern times, to the more harmleſs one of burning repreſentations of their domeſtics in tin foil, cut into the ſhape of human beings, and of placing their ſtatues in wood or ſtone upon their graves; this ſeems to be the remain of the Scythian cuſtom which has been already quoted from Herodotus. The laſt remains of a relation are interred with all the honours that the family can afford. (Barrow's Travels in China, p. 483.)

Among the *Birmans* the deceaſed is burnt, unleſs he is a pauper, in which caſe he is either buried or caſt into the river, as the ceremony of burning is very expenſive. When the pile has been reduced to aſhes, the bones are gathered and depoſited in a grave. Symes's Ava, p. 314.

With every different tribe among the *Hottentots*, we are aſſured, the funeral ceremonies are alike. The deceaſed is thruſt either naked, or with his peliſſe on, into a hole in the earth or ſubterraneous paſſage, where the body uſually becomes the prey of ſome wild beaſt: though the relations generally thruſt bruſh-wood or buſhes into the aperture of the hole or paſſage. (Sparrman's Voyage to the Cape of Good Hope, i. 358.) Another cuſtom of a more horrid nature is likewiſe related on the ſame authority; Sparrman ſays, that it is a common practice, in caſe of the mother's death, to inter children at the breaſt alive. In *New South Wales*, the dead are burned, afterwards depoſited in the ground, and a funeral hillock raiſed upon the aſhes. (Hunter's Voyage to New South Wales, p. 64.) Laſtly, we ſhall mention, the cuſtom of burial among the *South Sea Iſlands*. At Otaheite the inhabitants bury none in the Morai, but thoſe offered in ſacrifice, or ſlain in battle, or the children of chiefs which have been ſtrangled at the birth: An act of atrocious inhumanity too common. When a perſon of eminence dies, even if a child of the ſuperior claſs, he is preſerved and not buried, unleſs he died of ſome contagious or offenſive diſeaſe. They take out the viſcera, and dry the body with cloth, anointing it within and without with the perfumed oil, and this is frequently repeated. The relations and friends, who are abſent, perform their part of the funeral rites at their arrival, each female preſenting a piece of cloth to the corpſe; and they continue to dreſs and decorate the body as if alive, and to furniſh it with proviſions, ſuppoſing that the ſoul which hovers round receives ſatisfaction from ſuch marks of attention; they therefore not only take care of it thus, but repeat before it ſome of the tender ſcenes which happened during its life time. While any offenſive ſmell remains they anoint the corpſe with ſweet-ſcented-oil, and ſurround it with garlands of flowers. A dead chief is uſually carried round the iſland to the different diſtricts where he had property, or where his particular friends reſide; and the funeral ceremony repeated: but after a tour of ſome months, he is brought to reſt at the place of his uſual reſidence. Some bodies are preſerved like dried parchment; others, when the fleſh is mouldered away, are burned. (See the Firſt Miſſionaries Voyage, p. 363, 364.)

By our common law, the granting of burial within the church is the excluſive privilege of the incumbent: except in caſes where a burying place is preſcribed for as belonging to a manor-houſe. (Gibſon, 453.) The church-wardens, by cuſtom, have, however, a fee for every burial there, by reaſon the pariſh is at the expence of repairing the floor. (Watſon's Clergyman's Law, cap. 39.)

By the ſtatute, 30 Car. 2. ſt. 1. c. 3. for the encouragement of the woollen manufactures, and prevention of the exportation of money for the importing of linen, it is enacted, that no corpſe of any perſon ſhall be buried in any ſhirt, ſhift, ſheet, or ſhroud, or any thing whatſoever made or mingled with flax, hemp, ſilk, hair, gold, or ſilver, or in any ſtuff or thing, other than what is made of ſheep's wool only; on pain of 5l. And an affidavit ſhall be made for this purpoſe either to a magiſtrate or the officiating miniſter.

By the canons of the church (Can. 68.), no miniſter ſhall refuſe or delay to bury any corpſe that is brought to the church or church-yard (convenient warning thereof being given him before) except the party deceaſed were denounced excommunicated *majore excommunicatione*, for ſome grievous and notorious crime, and no man able to teſtify of his repentance. There were anciently other cauſes of refuſal, particularly of heretics, againſt whom there was an eſpecial proviſion in the canon law, that if they continued in their hereſy they ſhould not have chriſtian burial: though no inſtances of its enforcement occur ſubſequent to the period of the reformation. They who had not received the holy ſacrament, at leaſt at Eaſter, were excluded from Chriſtian burial by a law of the Lateran council, which became afterwards a law of the Engliſh church. In like manner, perſons killed in duels, tilts, and tournaments. But, at this day, theſe prohibitions are reſtrained to the excommunicate, the unbaptized and ſuicides.

Burial, *Chriſtian*, is often uſed to denote that which is performed in holy ground, and with the uſual ſervice or ceremonies of the church.

Burial is alſo uſed to denote the dues paid for interment, eſpecially to the miniſter. The burial fee paid to the prieſt on opening the grave, was called by our Saxon anceſtors *ſoul-ſcot*. Phil. Tranſ. N° 189.

BURIAL *of an aſs, aſini ſepultura*, an ignominious kind of burial out of holy ground, under the gallows, or in a highway, where ſeveral roads meet, and performed by public hangmen, or the like. Such is that of ſuicides, excommunicated perſons, &c. ſometimes denominated canine burial, or burial of a dog.

In the middle age we alſo find mention of a peculiar kind of burials, called IMBLOCATION, practiſed on the bodies of perſons excommunicated. Du Cange.

BURIAL *of the crucifix, Sepultura crucifixi,* denoted a repreſentation of the burial of Chriſt, anciently performed annually in churches on the day of the Paraſceue. Du-Cange.

BURIALS, in computations of mortality, denote deaths, and ſtand oppoſed to births. In this ſenſe, we have eſtimates of the burials in Brandenburg, in Frankfort, Breſlaw, &c. Phil. Tranſ. N° 261. 229. and 176.

By a ſtatute under king Charles II. a regiſter is to be kept in every pariſh, of all perſons buried within the ſame, or at the common burial-places thereof. Stat. *33* Car. II. c. *3*. See MORTALITY.

BURIAL is alſo uſed for the incloſing of vegetable or mineral bodies in the ground, for divers purpoſes. Lord Bacon gives divers experiments of burying fruits, &c. for preſervation and condenſation, and to give nouriſhment to their reſpective trees. Works, tom. iii. p. 80.

Some commend burials in the earth, others in wheat, to ſeaſon timber when firſt felled, and to make it of more durable uſe. Chemiſts ſometimes bury their cements. The Chineſe are ſaid to bury their porcelain, to give it the greater beauty.

BURIANA, in *Geography*, a town of Italy, in the territory of Sienna, near the lake of Caſtiglione; 16 miles S. of Montieri.

BURIAS, or BURIN, one of the Manillas or Philippine Iſlands, ſouth of Luzon, about five miles in compaſs, inhabited by a few tributary Indians, who are compriſed in the pariſh of Maſbate, which is another larger iſland ſouth of it, and not far diſtant from Ticao. N. lat. 12° 30′. E. long. 122° 0′.

BURICH. See BUDERICH.

BURICH, is alſo a town of Germany, in the circle of Swabia, and margraviate of Baden-Durlach: five miles from Philipſburg.

BURIDAN, JOHN, in *Biography*, a celebrated ſchoolman of the 14th century, was a native of Bethune, and became profeſſor in the univerſity of Paris, and, as ſome ſay, regent in 1320. Aventine relates, that he was a diſciple of Ockam, and being attached to the ſect of the Nominals, was obliged by the prevalence of that of the Realiſts to quit Paris, and to remove to Germany, where he founded the univerſity of Vienna. He wrote "Commentaries on Ariſtotle's Logic, Ethics, and Metaphyſics;" but he has been principally remarkable on account of the ſophiſm or argument, commonly called "Buridan's Aſs." This ſeems to have been introduced for the purpoſe of illuſtrating the doctrine of that neceſſity of yielding to impreſſions of the ſenſes under which beaſts are placed, and in which they are ſuppoſed to differ from man, who poſſeſſes free-will, or an internal ſelf-determining power. With this view, Buridan feigned an hungry aſs, placed between two meaſures of oats, in ſuch a manner, that each made exactly the ſame impreſſion on his ſenſes; in which caſe, for want of a power of chuſing one rather than another, he muſt die of hunger. The term "Buridan's Aſs," has been ſince proverbially uſed to denote difficulty and heſitation in determining between two objects. Gen. Dict.

BURIE, in *Geography*, a town of France, in the Lower Charente, and chief place of a canton, in the diſtrict of Saintes; the place contains 1510, and the canton 10,288 inhabitants; the territory comprehends 127½ kiliometres, and 11 communes.

BURIGNY, N. LEVESQUE DE, in *Biography*, an eſtimable man of letters, was born at Rheims in 1691, and devoting himſelf to literary purſuits, acquired univerſal reſpect for the mildneſs and ſimplicity of his character. He was a member of the Pariſian academy of belles lettres; and prolonged his life, with the exerciſe of his faculties, to his 94th year. His works are "A Treatiſe on the Authority of the Popes." 1720, 4 vols. 12mo. "Hiſtory of Pagan Philoſophy," 1724, 12mo., and 1754; "General Hiſtory of Sicily," 1745, 2 vols. 4to.; "A Tranſlation of Porphyry on Abſtinence from Fleſh," 1747, 12mo.; "Hiſtory of the Revolutions of Conſtantinople," 1750, 3 vols. 12mo.; "The Life of Grotius," 1754, 2 vols. 12mo.; "of Eraſmus," 1757, 4 vols. 12mo.; "of Boſſuet," 1761, 12mo.; "of Cardinal du Perron," 1768, 12mo.; all in French. His works, which in their general character are correct, but diffuſe and languid, are eſteemed as valuable collections of authentic facts. Nouv. Dict. Hiſt.

BURIS, in *Surgery*, a name given by Avicenna, and ſome other old authors, to a ſcirrhous hernia, cauſed by a hard abſceſs.

BURKA, in *Geography*, lies in the iſland of Angra, in the gulf of Baſſora, and has a ſpacious harbour, with plenty of water. See ANGRA-*iſland.*

BURKE, EDMUND, in *Biography*, was born in Dublin, on the firſt of January, 1730. His father was an attorney of the Proteſtant perſuaſion. The ſon was placed, during the early part of his education, under the care of Abraham Shackleton, a Quaker ſchoolmaſter of conſiderable merit, for whom his illuſtrious pupil entertained ſo large a ſhare of affection through life, as never to omit paying him an annual viſit of gratitude and reſpect, during a period of forty years. From Ballytore near Carlow, the reſidence of Shackleton, Mr. Burke was removed, at the age of ſixteen, to Trinity College, Dublin. It is underſtood that he was more attentive to the inſtructions of his country ſchool-maſter, from whom he early derived much of his multifarious knowledge, than to the more regular diſcipline of tuition, inſtituted by the univerſity. He gained no prize; but he obtained his ſcholarſhip, during the ſecond year of his reſidence, which proves him at leaſt not to have been deficient in claſſical attainments; for of ſuch are that honour and emolument the reward. He was contemporary with Goldſmith; but it does not appear that any friendſhip commenced between theſe two great men, till after the poem of the "Traveller" had eſtabliſhed Goldſmith's reputation. There is no foundation whatever for the opinion, that Burke was bred a Catholic; and it ſeems now generally agreed, that he did not finiſh his ſtudies at St. Omer's. He was a candidate for the profeſſorſhip of logic at Glaſgow, but was too late in his application. On this diſappointment, he repaired to London in 1749, after having taken his bachelor's degree, and entered himſelf a member of the Temple, with a view of being called to the bar.

At this time, the narrowneſs of his finances reduced him to the neceſſity of writing for the periodical papers; to which, he contributed eſſays on literary and political topics: but though the ſphere in which he moved was not that of pleaſure and faſhion, he procured an introduction to the celebrated Mrs. Woffington, the actreſs, in whoſe ſociety he paſſed many of his leiſure hours. The ſeverity with which he applied himſelf both to compoſition and ſtudy, having conſiderably affected his health, Dr. Nugent was called in, who removed him from the inadequate accommodations of the Temple to the comforts of his own houſe. The attention of the family, and the particular kindneſs of Miſs Nugent, led to a matrimonial connection, in which Mr. Burke's expectations of domeſtic happineſs were fully anſwered.

Mr. Burke's firſt acknowledged publication was, "A Vindication of natural Society; or a View of the Miſeries and Evils ariſing to Mankind, from every Species of artificial Society;" written in imitation of lord Bolingbroke, for the purpoſe of attacking ironically that writer's philoſophy, and expoſing its injurious conſequences. It did not meet with the reception which has ſince been thought to have been juſtly due to its merit as a compoſition.

He was not however diſcouraged by this failure from publiſhing his "Eſſay on the Sublime and Beautiful," which had been compoſed prior to the "Vindication," but reſerved for the advantage of making a firſt appearance under cover of a well-known and admired character. Both theſe works came out in 1756.

Though there was no name to the "Inquiry," the firſt edition was ſold within the year, and a ſecond publiſhed in 1757, with an "Introductory Diſcourſe concerning Taſte." The applauſe which attended this performance was not temporary, nor the connections conſequent on it without permanent advantage. It procured him relief from his pecuniary embarraſſments, and an eaſy introduction to the circles of the firſt rank and abilities. Among the firſt who ſought his acquaintance, were Dr. Johnſon and ſir Joſhua Reynolds, to whom he has been ſuppoſed to have furniſhed the compoſition of the "Diſcourſe to the Royal Academy." Much has been ſaid on the ſubject; but there ſeems no reaſon for depriving the late illuſtrious preſident of the fame attached to an excellent writer, as well as an original and accompliſhed artiſt.

It was Mr. Burke's intention to have controverted the theories of Berkeley and Hume: he then thought of rivalling the hiſtoric labours of the latter in "Memoirs of his own Times;" for this purpoſe, he had made himſelf maſter of Engliſh hiſtory, eſpecially ſince the revolution; and the project ended in the eſtabliſhment of Dodſley's "Annual Regiſter," a very valuable work, of which he had the principal direction from 1758 to 1789.

In 1761, he accompanied "Single-ſpeech Hamilton" to Ireland. This latter gentleman made one very excellent ſpeech in the Engliſh, and one more in the Iriſh houſe of commons; and Mr. Burke has been ſaid to have been the compoſer of both theſe ſpeeches, but probably with as little reaſon as in the caſe of ſir Joſhua's diſcourſes. On Mr. Burke's return from Ireland, with a penſion of 300l. per annum, it was no longer neceſſary to write for periodical publications. He, however, contributed occaſionally to the "Public Advertiſer," where the excellence of his writings introduced him to the notice of the marquis of Rockingham, while Mrs. Woffington recommended him to the duke of Newcaſtle. He accordingly became private ſecretary to the marquis, at the inſtance of Mr. Fitzherbert, and member for Wendover on lord Verney's intereſt, and thus commenced his political career.

In February 1764, was founded that club, which afterwards became diſtinguiſhed by the title of the *Literary Club.* Sir Joſhua Reynolds was the firſt propoſer, and Johnſon acceded to the plan, in the hope of enlarging his circle, and recovering the opportunities for converſation, which he had loſt by the diſſolution of the meeting in Ivy-Lane. The original members of the literary club were, beſides the two founders, Mr. Burke, Dr. Nugent, Mr. Beauclerk, Mr. Langton, Mr. Chamier, ſir John Hawkins, and Goldſmith. They met at the Turk's Head, in Gerrard ſtreet, Soho, on every Monday evening through the year.

About the time of Mr. Burke's entrance on public life, men's minds were equally agitated by the meaſures of government reſpecting Mr. Wilkes, and the growing diſcontents in America. Of the two parties in oppoſition, that of Mr. Pitt having inſiſted on very peremptory conditions, reſpecting court favourites and ſecret adviſers, the duke of Newcaſtle, of whoſe party, on account of his age and infirmities, the marquis of Rockingham was conſidered as the leader, cloſed with the terms on which a new adminiſtration was propoſed. Mr. Burke now, with a facility to which he was too prone, ſeceded from his old friendſhip with Mr. Hamilton; but he is ſaid, at the ſame time, to have reſigned the penſion procured through that gentleman's intereſt. From this time he became a profeſſed party-man; a bondage to which he was in ſome meaſure compelled, by laying himſelf under pecuniary obligations to the marquis of Rockingham. The nature and extent of the favour he received have been variouſly repreſented; but it is certain, that a conſiderable part, if not the whole of the purchaſe money for his villa at Beaconsfield, of which he now took poſſeſſion, was promiſed either as a loan or a gift by the marquis.

On his entrance into parliament, he took infinite pains to qualify himſelf for the diſcharge of his new duty. Among other ſources of improvement, he diſdained neither the writings of the fathers, the ſubtleties of the ſchool divines, the peruſal of precedents and records, nor the oratorical conteſts of the Robin-Hood ſociety. His principal opponent at the Robin-Hood was a baker, of whom Goldſmith ſaid, that "Nature intended him to have preſided in the court of chancery." He procured his ſeat in 1765, and his firſt ſpeech was on the ſtamp act. It attracted the notice, and obtained the applauſe of Mr. Pitt: Mr. Burke was principally conſulted by the Rockingham adminiſtration on the affairs of America, and the middle courſe was adopted in conformity with his advice. The weakneſs of the party, and the feebleneſs of their policy, ſoon brought the miniſtry to a cloſe; and its diſſolution was haſtened by Mr. Burke's project of a Canadian conſtitution, which lord Northington condemned in the moſt angry and contemptuous language. Mr. Pitt then made his own terms, as he thought, with the court. Mr. Burke had ſcarcely time to defend the conduct of his friends in print, before their ſucceſſors reſigned, and the parliament was diſſolved. Mr. Burke was re-elected for Wendover, the Grafton miniſtry came into power, and Mr. Burke was the principal orator of oppoſition. He was adverſe to the expulſion of Wilkes, and made an able ſpeech to prove his ſubſequent eligibility, though he diſliked the general character of the man. About this time, the letters of Junius began to appear; and on this occaſion, the public have not loſt ſight of their propenſity to attribute all able compoſition to Mr. Burke. There ſeems to be not the leaſt foundation for ſuppoſing him to have been their author. He, however, gave his opinions and principles at conſiderable length, in his "Thoughts on the Cauſes of the preſent Diſcontents." The leading features of this pamphlet were, a pointed invective againſt inner cabinets and ſecret influence, and a picture of what a houſe of commons ought to be. Thoſe who ſeek in this work for proofs of political apoſtacy in later life, will not find the evidence ſo deciſive as they expect. The remedies propoſed were not thoſe of democracy, but of a fellow-feeling to be eſtabliſhed between the ariſtocracy and the people. As a proof that the views of the author did not even then riſe up to the expectations of the whig-party in general, he was attacked by Mrs. Macaulay, as well as by the friends of the court.

While lord North was miniſter, the impetuoſity of ſyſtematic oppoſition ſeems to have carried Mr. Burke's vindication of freedom further than was compatible with that fondneſs for ancient eſtabliſhments, which always exiſted in his mind, and became ſo much ſtronger in the latter part of life. He took a diſtinguiſhed part in the debates on the liberty of the preſs. During the whole of the American war, he uniformly oppoſed the miniſter with zeal and ability, and defended the people with warmth and energy. His habits during this period were thoſe of ſobriety and literary induſtry, as well as of parliamentary vigilance and exertion.

It is to the credit of both parties that political differences made no breach between Burke and Johnſon. The latter, on taking leave of his hoſt at Beaconsfield, wiſhed him all the ſucceſs on his canvas at Briſtol, which "could poſſibly be wiſhed him by an honeſt man."

The famous Briſtol election took place in 1774, when Burke and Cruger, an American merchant, turned out lord Clare and Mr. Brickdale, the former repreſentatives. So little aſſiſtance did Mr. Burke derive from Mr. Cruger's eloquence on the huſtings, that the conſtant and only ſpeech of the latter was, "I ſay ditto to Mr. Burke! I ſay ditto to Mr. Burke!"

It would exceed the limits of this article to detail Mr. Burke's controverſy with Dean Tucker, on the part which he took on every great political queſtion. It is neceſſary, however, to mention, that on the queſtion of parliamentary reform, the Rockingham branch of oppoſition oppoſed the meaſure; and the duke of Richmond, lords Shelburne, Chatham, and Camden, Mr. Dunning, and Mr. Fox defended it.

The leading features of Mr. Burke's political conduct, while pay-maſter general in the Rockingham and Fox adminiſtration, was the adoption of the plan for economical reform, which had been rejected by the houſe of commons in 1780. It however underwent ſeveral modifications. The political convulſions which enſued on lord Rockingham's death are well remembered. The coalition, and the India bill were ſuggeſted and puſhed forward with much ardour by Mr. Burke, and principally, if not entirely, produced that decline of popularity, which both himſelf and his friends experienced.

The event in which Mr. Burke ſtood moſt prominent before the public, in the interval between the formation of Mr. Pitt's miniſtry, and the French revolution, was the impeachment of Mr. Haſtings. His ſpeeches on this occaſion were among the moſt ſplendid triumphs of his eloquence, though not among the moſt ſolid atteſtations of his judgment. They were marked by intemperance and exaggeration, apparently produced rather by the ambition of rivalling Tully in his eloquent and claſſical abuſe, than ariſing from a ſober examination of facts, or a ſerious conviction of guilt. The charges of avarice and malice have never been adequately ſupported, and can only be mentioned to be denied in grave and impartial biography.

Mr. Burke had never been remarkable for an even temper in the diſcuſſion of political queſtions: his irritability increaſed with his years, and his conduct became intemperate and violent. He injured the cauſe, and incurred the diſpleaſure of his aſſociates on the queſtion of the regency, and burſt aſunder all the ties of friendſhip, as well as political connection, on the breaking out of the French revolution. That event, together with the conduct and opinions of Mr. Burke relating to it, is ſo recent, that it will be ſufficient barely to enumerate his publications on the ſubject, with the ſingle obſervation, that he ſeems from this time forward to have cheriſhed his ariſtocratical principles into the moſt inveterate bigotry, and to have negatived in turn every maxim of practical freedom, which he had formerly enforced. Still, however, it is to be hoped, that his meaſures, as a public man, may candidly be attributed to impetuoſity of character, and ductility of imagination, rather than to any worſe motives.

The celebrated "Reflexions" were publiſhed in October 1790, which were firſt anſwered by Dr. Prieſtley, in vindication of his friend Dr. Price, and afterwards by Thomas Paine in his "Rights of Man."

The next publication of Mr. Burke was his "Second Letter to a Member of the National Aſſembly;" and the third, his "Appeal from the new to the old Whigs," in conſequence of the publication from the whig club, declaring Mr. Fox to have maintained the pure doctrines of Engliſh whiggiſm.

In 1791, Mackintoſh's "Vindiciæ Gallicæ" appeared, and Mr. Burke's principal publications afterwards were, his "Letter to Lord Fitzwilliam," and "Thoughts on a regicide Peace."

On the cloſe of Mr. Haſtings's trial, Mr. Burke retired from parliament; but his domeſtic comfort was irretrievably impaired, and his life probably ſhortened by the death of his ſon, in the year 1794. The father ſurvived three years, which were principally employed in acts and ſchemes of benevolence to the French emigrants and their families. He retained his faculties in perfection to the laſt, and died without bodily ſtruggle, or diſcompoſure of mind, on the 8th of July, 1797.

The qualities of Mr. Burke's mind will be beſt exemplified by a few of his opinions on literary ſubjects. Virgil and Lucretius were his favourite Latin poets. He preferred the ſatires and epiſtles of Horace to the odes. He eſteemed the Greek hiſtorians and orators more highly than the Latin. The delineation of ancient manners and characters in Homer delighted him; and he read the Odyſſey more frequently than the Iliad. Among the dramatic writers, he gave the preference to Euripides over Sophocles. The modern authors with whom he was moſt pleaſed, were Bacon, Shakſpear, Addiſon, Le Sage, and Fielding. He thought Richardſon far inferior to the latter: he did not like Swift, and had a very poor opinion of Gay; particularly of his "Beggar's Opera."

He paid much attention to farming, and diſplayed taſte in his improvements at Beaconsfield. He was one of the moſt ſucceſsful gentlemen farmers, and conſtantly ſupplied his family in town from the produce of his own eſtate. He was particularly hoſpitable, and indulged in the pleaſures of the table, but never to exceſs. He was liberal to common beggars; and aſcribed the ordinary principle of diſcouraging them, rather to avarice than policy.

As a ſpeaker, Mr. Burke was characteriſed by a ſuperfluity of ideas and images, often too abundant to be applied with propriety, or ſelected and arranged with judgment. Early in life, he was remarkably careful of his language, and reviſed his ſpeeches with attention. Latterly, he became blameably diffuſe and extravagant, though his ingenuity never failed. He was particularly ambitious of excellence in the management of his voice and action; yet, after all, the former was but harſh, and the latter forcible, but ſtrained.

His "Eſſay on the Sublime and Beautiful" has placed him in the higheſt claſs of writers on ſubjects of taſte and criticiſm; nor can his whole character be ſummed up with ſo much ſtrength, conciſeneſs, and truth, as in the memorable words of Johnſon: "Burke is one, with whom, if you were to take ſhelter from a ſhower under a gate-way, you would ſay you had been in company with the moſt extraordinary man you had ever ſeen."

Burke, in *Geography*, a county of America, in Morgan diſtrict, North Carolina, containing 9799 inhabitants, of whom 776 are ſlaves. It is about 80 miles long, and 40 wide. The lands between the mountains, and on the rivers, are very fertile. Its capital is Morgan-town.

Burke is alſo a county in the lower diſtrict of Georgia, containing 9506 inhabitants, of whom 2967 are ſlaves. Its chief towns are Louiſville and Wayneſborough.

Burke is alſo a townſhip of Caledonia county, in the ſtate of Vermont; about 15 miles weſt of Upper Amonooſock river.

BURKEN, a town of Germany, in the circle of the Lower Rhine and electorate of Mentz; 27 miles E. of Heidelberg.

BURKERSDORF, a royal town, with a citadel, of Auſtria, in the circle below the foreſt of Vienna, lying on the rivulet of Wien.

BURKHAUSEN, a well-built town of Germany, in the circle of Upper Bavaria, ſeated on the Salza, with a caſtle on a hill, the capital of a regency, and having four churches, and a Jeſuits' college; 26 miles N. N. W. of Saltzburg.

BURKHEIM, or Purkheim, a town of Germany, in the circle of Bavaria, and duchy of Neuburg; 7 miles W.S.W. of Neuburg.

BURKI, a town of Poland, in the palatinate of Kiov. N. lat. 48° 50'. E. long. 32° 6'.

BURKITT, William, in *Biography*, was born at Hitcham, in Northamptonſhire, in 1650, and, after a previous grammatical education, was admitted, at the age of 14 years, into Pembroke-hall in the univerſity of Cambridge. Upon taking his degree, he quitted the univerſity, and became chaplain in a gentleman's family. His firſt ſettlement, after his ordination by biſhop Reynolds, was at Milden in Suffolk, where he continued to officiate for 21 years, firſt as curate, and afterwards as rector, and where he was much eſteemed as a plain, practical, affectionate preacher. In 1692 he exchanged this ſituation for the vicarage of Dedham in Eſſex, where he died in 1703. His character was diſtinguiſhed for piety and charity. He was active in making collections for the relief of the French proteſtants in 1687, &c. and in procuring the ſettlement of a worthy miniſter in Carolina: and by his laſt will he provided for the accommodation of a lecturer at Dedham. He has been principally known as a writer by his "Commentary on the New Teſtament."

BURKUNSTADT, in *Geography*, a town of Germany, in the circle of Franconia, and biſhopric of Bamberg, ſeated on the White-Mayn.

BURLAMAQUI, John-James, in *Biography*, an eminent civilian, was deſcended of a noble family, originally from Lucca, and born at Geneva in 1694; where he became honorary profeſſor of juriſprudence in 1720. After travelling into France, Holland, and England, he commenced the exerciſe of his functions, and rendered his ſchool famous and flouriſhing. One of his pupils was prince Frederic of Heſſe-Caſſel, who, in 1734, took him to his reſidence, and detained him there for ſome time. Upon his return to Geneva, he ſurrendered his profeſſorſhip; and in 1740 entered into the grand council; and, as a member of this illuſtrious body, he continued to ſerve his fellow-citizens till his death, in 1750. As a writer, he was diſtinguiſhed leſs by his originality than by his clear and accurate method of detailing and illuſtrating the principles of others; among whom are Grotius, Puffendorf, and Barbeyrac. His works are, "Principles of Natural Law," 4to. Geneva, 1747, often reprinted, tranſlated into various languages, and long uſed as a text-book in the univerſity of Cambridge; and "Political Law," 4to. Gen. 1751; a poſthumous work, compiled from the notes of his pupils. Burlamaqui was much eſteemed in private life; and reſpected as a lover of the fine arts, and a patron of artiſts. He had a valuable collection of pictures and prints; and a medal of him was executed by Daſſier in a ſtyle of ſuperior excellency. Nouv. Dict. Hiſt.

BURLATS, in *Geography*, a town of France, in the department of the Tarn, and diſtrict of Caſtres, 4 miles eaſt of it.

BURLAW, or Byrlaw, *burlawa*, in *Middle Age Writers*, denotes country laws, or the laws concerning country affairs. Du-Cange. See Bye-Law.

BURLEIGH, in *Biography*. See Cecil.

BURLESQUE, a jocoſe kind of poetry, chiefly uſed in the way of drollery, either to excite laughter merely, or to provoke deriſion and ridicule. Of the former kind is "Virgil traveſtie," which degrades a grave ſubject, by a certain colouring, ſo as to be riſible; and of the latter, the "Lutrin" of Boileau, which lays hold of a low and trifling incident to expoſe the luxury, indolence, and litigious temper of a ſet of monks. This kind of burleſque produces effect by elevating the ſtyle far above the ſubject, and yet affecting to conſider it as of the utmoſt dignity and importance. In a burleſque poem, ſuch as the Lutrin, the Diſpenſary, and Hudibras, machinery may be employed with greater advantage than in any other ſpecies of poetry; and the more extravagant the machinery in a ludicrous poem, the greater is the entertainment which it affords. "Burleſque," ſays Mr. Shenſtone, (Works, vol. ii. p. 182. 3d edit.) "may, perhaps, be divided into ſuch as turns chiefly upon the thought, and ſuch as depends more upon the expreſſion; or we may add a third kind, conſiſting in thoughts ridiculouſly dreſſed in language much above or below their dignity. The Splendid Shilling of Mr. Philips, and the Hudibras of Butler, are the moſt obvious inſtances. Butler, however, depended much upon the ludicrous effect of his double rhymes." Dr. Johnſon, in his life of Butler (Lives of the Poets), after obſerving, that "burleſque conſiſts in a diſproportion between the ſtyle and the ſentiments, or between the adventitious ſentiments and the fundamental ſubject," adds, that this, "like all bodies compounded of heterogeneous parts, contains in it a principle of corruption. All diſproportion is unnatural: and from what is unnatural, we can derive only the pleaſure which novelty produces. We admire it a-while as a ſtrange thing; but, when it is no longer ſtrange, we perceive its deformity. It is a kind of artifice, which by frequent repetition detects itſelf; and the reader, learning in time what he is to expect, lays down his book, as the ſpectator turns away from a ſecond exhibition of thoſe tricks, of which the only uſe is to ſhew that they can be played."

F. Vavaſſor maintains, in his book "De Ludicra Dictione," that burleſque was abſolutely unknown to the ancients; againſt the opinion of ſome others, that one Raintovius, in the time of Ptolemy Lagus, turned the ſerious ſubjects of tragedy into ridicule; which, perhaps, is a better plea for the antiquity of farce than of burleſque.

The Italians ſeem to have the juſteſt claim to the invention of burleſque. The firſt author in this kind was Bernia; he was followed by Lalli, Caporalli, &c. From Italy it paſſed into France, and became there ſo much the mode, that in 1649 appeared a book under the title of "The Paſſion of our Saviour, in Burleſque Verſe." Thence it came into England; but the good ſenſe of the Engliſh never adopted nor owned it, notwithſtanding one or two have excelled in it.

BURLETTA, Ital. from *burlare*, to jeſt, be jocular, deride, turn to ridicule, in *Muſic*. It is extraordinary that the term burletta, ſo common in ſpeaking of comic operas, appears in no muſical dictionary. Comic operas began by an *intermezzo*, a ſingle act or ſcene, as an act tune between any two acts of a drama. See Opera Buffa.

BURLING *of Cloth*. See Cloth.

Burling *Iron*, an inſtrument uſed by the manufacturers of cloth, and borne in the arms of the company of weavers at Exeter.

Burlings' *Rocks*, in *Geography*, lie on the coaſt of Portugal, 14 leagues about N.N.W. from cape Rocque, commonly called the rock of Liſbon, and 18 leagues S.W. from cape Montage. Behind the Burlings are a good road and anchorage, under the great iſland before the Hermitage, and 10 fathoms water. N. lat. 39° 20′. W. long. 9° 37′.

BURLINGTON. See Bridlington.

Burlington, a county of America, in New Jerſey, extending acroſs from the Atlantic ocean on the S.E. to Delaware river, and part of Huntingdon county on the N.W., in length about 60 miles, in breadth about 80. A great part of it is barren; but about three-eighths of it are under cultivation, generally level, and well-watered. It has 21,521 inhabitants, including 188 ſlaves.—Alſo, a city, the capital of the above county, under the government of a mayor, aldermen, and common council. The extent of the townſhip is 3 miles along the Delaware, and a mile back; being about 18 miles N.E. of Philadelphia, and 11 S.W. from Trenton. The iſland, which is the moſt populous part, is about a mile each way; and included in 1803 282 houſes, and 2256 inhabitants. The ſtreets are commodiouſly ſpacious, and moſtly ornamented with rows of trees. The town is oppoſite to Briſtol in Pennſylvania, where the river is about a mile wide. Under the ſhelter of Mittinicunk and Burlington iſlands is a ſafe harbour, conveniently adapted for trade, but too near to Philadelphia to allow of much foreign commerce. Burlington was firſt ſettled in 1677, and has an academy and a free-ſchool. Mittinicunk iſland belongs to the latter, and yields a yearly profit of 180l. This town has places of worſhip for the Friends, the Epiſcopalians, the Methodiſts, and Baptiſts. It has a market-houſe, a work-houſe, a free-ſchool, and a gaol. Here are likewiſe a nail manufactory, and a brewery. N. lat. 40° 8′. W. long. 74°.

Burlington, a townſhip of America, in Otſego county, New York, divided by an act of the legiſlature in 1797 into two towns.—Alſo, a pleaſant townſhip, the chief in Chittenden county, Vermont, ſituate on the ſouth ſide of Onion river, on the eaſt bank of lake Champlain, and containing 815 inhabitants. The governor and patrons of the college of Vermont have ſelected this healthy and agreeable ſituation for a ſeminary, conſtituted for the education of young perſons of all denominations. Burlington is 22 miles diſtant northerly from Vergennes, 122 from Bennington, and 332 from the city of New York. N. lat. 44° 30′.—Alſo, a new townſhip in Middleſex county, Maſſachuſetts, incorporated in 1799; about 12 miles N. of Boſton.

Burlington, or *Ouineſkea Bay*, lies on the eaſt ſide of lake Champlain, about 34 miles N. by E. from Crown point, 69 S.E. from lake St. Francis in St. Lawrence river, and 70 ſoutherly from St. John's. N. lat. 44° 22′.

BURLO, a town of Germany, in the circle of Weſtphalia, and biſhopric of Munſter; 4 miles N.N.W. of Borchen.

BURMAH. See Birman *Empire*.

BURMANN, Francis, in *Biography*, a famous theological profeſſor, was born in 1628 at Leyden, where he received his education; and after having for ſome time officiated as miniſter at Hanau, and as agent of the college at his native place, he was invited to the chair of theology at Utrecht. In this ſtation he diſtinguiſhed himſelf by his lectures and writings. He died in 1679. His publications are "Commentaries on the Pentateuch and Hiſtorical Books of the Old Teſtament," written in Dutch, and printed at different times: "An Abridgment of Theology," 2 vols. 4to. in Latin; "Exercitationes Academicæ," 2 vols. 4to., and ſome controverſial pieces. Moreri. Gen. Biog.

Burmann, Peter, an eminent philologiſt, was the ſon of the preceding, and born in 1668 at Utrecht, where he was educated, and where he attended the lectures of the learned Grævius. Devoting himſelf to the profeſſion of the law, he ſtudied for ſome time at Leyden, and in his 20th year took the degree of doctor of laws. Having gained reputation in the exerciſe of his profeſſion, he was, in 1696, appointed profeſſor of eloquence and hiſtory in his native city, and afterwards of Greek and politics. From this time he devoted himſelf wholly to literature, and became one of the moſt laborious commentators and editors of the age. He publiſhed, with his own notes and thoſe of other critics, Velleius Paterculus, Quintilian, Valerius Flaccus, Virgil, Ovid, Suetonius, Lucan, Phædrus, and Petronius, and alſo a collection of the minor Latin poets, in 2 vols. 4to. He alſo wrote a treatiſe "On the Taxes of the Romans," edited ſeveral learned works, with prefaces and notes, and was the author of various diſſertations, diſcourſes, and pieces of Latin poetry. As a commentator, he was diſtinguiſhed more by his induſtry and erudition than for his genius and taſte; and though he is deficient in the elucidation of obſcure and difficult paſſages, he has accumulated a maſs of materials from which other grammarians and critics may derive great advantage. He was twice rector of the univerſity, and thrice private ſecretary to the academical ſenate; and to his other honours was added the profeſſorſhip of the hiſtory of the United States. He died in 1741. Moreri. Gen. Biog.

Burmann, John, M.D. of a noble and wealthy family, and of no mean literary acquirements, employed much labour and expence in editing various botanical works, particularly thoſe giving accounts of plants procured from the Indies. In 1736 he publiſhed an edition of Weinman's Herbal, to which he added ſeveral plates with African plants. His next publication, in which he had the aſſiſtance of Linnæus, then a young man, was the "Theſaurus Zeylanicus, exhibens Plantas in Inſula Zeylana naſcentes, Iconibus illuſtratus," 4to. 1737, taken from various travellers, with new deſcriptions and plates. The following year he was appointed profeſſor to the botanical garden at Amſterdam, and ſoon after publiſhed "Rariarum Africanaium Plantarum, Decades Decem," 4to. principally from Witſen and Vanderſtell, to which, however, he made ſeveral additions. He tranſlated Rumphius's great work into Latin, which he enriched with valuable notes, and publiſhed under the title of "Everhardi Rumphii Herbarium Amboinenſe, continens plantas in ea, et adjacentibus Inſulis repertas." His laſt labour was procuring engravings to be executed, from the drawings of American plants left by Plumier, to which he added deſcriptions, with the modern, and former names. His ſon,

Burmann, Nicolas Lawrence, following the ſteps of his father, took his degree as doctor of medicine at Leyden, in 1759, and publiſhed, for his inaugural theſis, "Specimen Botanicum de Geraniis," 4to. In 1768, at Amſterdam, "Flora Jndica, accedit ſeries Zoophytorum Jndicorum, nec non prodromus Floræ Cappenſis." Haller. Bib. Botan. Eloy. Dict. Hiſt. Gen. Biog.

BURMANNIA, in *Botany* (in honour of John Burmann M.D. profeſſor of botany at Amſterdam, author of Theſaurus Zeylanicus, &c.). Linn. 397. Schreb. 542. Willd. 606. Juſſ. 50. Claſs and order, *hexandria monogynia*. Nat. Ord. *Coronariæ*, Linn. *Bromelia*, Juſſ.

Gen Ch. *Cal.* perianth long, one-leaved, priſmatic, coloured, with three longitudinal, membranaceous angles; the mouth trifid, ſmall. *Cor.* petals three, ovate, oblong, placed in the mouth of the calyx, very minute. *Stam.* filaments ſix, very ſhort; anthers in the mouth of the calyx, placed two by two, ſeparated by a reflexed joint. *Piſt.* germ ſuperior, cylindrical, half the length of the calyx; ſtyle thread ſhaped, the length of the corolla; ſtigmas three, obtuſe, concave. *Peric.* capſule covered by the calyx, cylindrical, three-cornered, three-celled, three-valved, opening at the angles. *Seeds* numerous, very ſmall.

Eſſ. Ch. *Cal.* priſmatic, coloured, trifid; angles membranaceous. *Petals* three. *Capſules* three-celled, ſtraight. *Seeds* minute.

Obſ. La Marck deſcribes the calyx as having its border divided into ſix ſegments, the three inner ones ſmall, with the ſhape of petals. Juſſieu, in conformity with the principles of his ſyſtem, with reſpect to all monocotyledinous plants, had before adopted the ſame idea. He ſtyles it a very ſingular genus, allied to no other, except perhaps to Hypoxis.

Species, 1. B. *diſticha* Linn. (La Marck. Illuſt. Pl. 225.) "Spike double." *Root* perennial, fibrous, ſmall. *Stem* ſix or ſeven inches high, upright, ſtraight, ſimple. *Root leaves* eight or nine, graſs-like. *Stem leaves* ſhort, acuminate, alternate, ſheathing. *Spikes* divaricated. *Flowers* on ſhort peduncles, in a ſingle row on the upper ſide of each ſpike, erect, blueiſh, permanent; bractes awl-ſhaped. La Marck. Native of Ceylon in watery places. 2. B. *biflora.* "Flowers two." Linn. Smaller than the preceding. *Root* ſtrong and fibrous. *Stem* naked, almoſt capillary. *Root leaves* very ſtraight. *Flowers* one or two at the ſummit of the ſtem, purple. A native of marſhes in Virginia. La Marck.

Both theſe ſpecies were cultivated by Mr. Miller, in 1768, but they are difficult to preſerve in gardens, for as they will not thrive when planted in dry ground, they muſt be planted in pots plunged in troughs of water, ſo as to cover the ſurface of the mould about three inches. The troughs in which the firſt ſort is planted muſt be conſtantly kept in a warm ſtove. The other ſhould be placed in a green-houſe in winter, but in ſummer may be expoſed to the open air. With this management they will ſometimes bear flowers. Martyn's Miller.

BURMANNIANA, in *Entomology*, a ſpecies of PHALÆNA (Tortrix) of a large ſize. This inhabits Surinam. The wings are pale, with four black coſtal ſpots on the anterior pair. *Gmel.* &c.

BURN, in *Surgery*, is a leſion of the animal body, occaſioned by the application of heat in a ſolid form. It differs from a SCALD, only inaſmuch as the latter is produced by the application of heat in a fluid form.

The conſequences of a burn are more or leſs ſerious, in proportion to the extent and depth to which the ignited ſubſtance produces its effects. An extenſive burn in an irritable perſon will ſometimes occaſion death, although the ſubjacent parts be not deeply injured; and a deep burn, of ſmall extent, may likewiſe prove fatal, according to the ſtructure or importance of the part affected.

The firſt effects of a burn are to cauſe pain, and inflammation; preſently afterwards, the exhalent arteries, being excited to action, will effuſe a quantity of ſerum under the ſkin, and raiſe the cuticle like a bliſter: if the burning acts deeply, it will kill and decompoſe the ſubjacent fleſh, ſo as at length to produce an eſchar.

In treating burns, we muſt attend to the exiſting ſymptoms. If the ſkin remains whole, and the accident be recent, we ſhould immediately have recourſe to very cold applications, with the view of diſcuſſing inflammation and abating pain. For this purpoſe, ice-water, lime-water, a ſolution of acetated ceruſſe, or Goulard's extract of lead, properly diluted, may be uſed with great freedom. Spirituous applications, which produce cold on evaporating, have been recommended with the ſame intention. The common people, with good reaſon, adviſe maſhed potatoes, or turnips, to be applied cold, as a poultice. But the above means are only proper in the beginning, and where the ſkin is not removed, ſo as to leave an excoriated or raw ſurface. In conjunction with theſe antiphlogiſtic remedies, we may abate pain and procure reſt by the liberal exhibition of opium; at the ſame time interpoſing laxative medicines, and enjoining abſolute repoſe to the injured part.

The plan, however, muſt be ſomewhat different in caſes of deep and deſtructive burns, where ſuppuration, ulceration, or mortification, are likely to enſue.

In the ſecond ſtage or degree of burns, where the miſchief has penetrated rather deeply, but not below the common integuments, it is uſual to apply to the part a dreſſing of ſoft ointment, which will not irritate or produce pain; ſuch as the ſpermaceti ointment, ſaturnine cerate, elder ointment, or equal quantities of oil, and lime water ſhaken together, and applied ſeveral times a day. The antiphlogiſtic regmen ſhould alſo be obſerved, if the inflammatory ſymptoms run high.

But, when the nature of the caſe is very ſerious, and there is room to expect a gangrenous or ſloughing ulceration, in conſequence of the burn being very extenſive, we muſt be cautious not to puſh the antiphlogiſtic treatment too far; nay, it may even be altogether unappropriate, and a ſtimulating or tonic courſe of remedies may be proper. Mr. Edward Kentiſh, of Newcaſtle, who has had much practice among the workmen in the coal mines, where exploſions often occur, is of opinion that pure alcohol or oil of turpentine is the beſt local application at the beginning, and a cordial diet to ſupport the patient's ſtrength. Our own experience juſtifies that gentleman's plan, and eſpecially in very deep burns, where ſloughing proves inevitable. We ſometimes, however, have found it neceſſary to mix equal parts of olive, or linſeed oil with the turpentine, to prevent its giving unſufferable pain.

It is ſcarcely requiſite to add, that in the event of gunpowder, or any other extraneous ſubſtance, being forced into the burned part, it ſhould be gently waſhed away or removed with all poſſible care. If great tenſion ariſe in the part, we ſhould occaſionally employ warm emollient cataplaſms and anodyne fomentations. When the vitality of a member has been totally deſtroyed, ſo that its uſe is irrecoverable, we may be compelled to amputate the limb. See MOXA, CAUSTIC, CAUTERY, HEAT, SCALD, and AMPUTATION.

BURN-*baking*, or *Beating*, in *Agriculture*, the operation of cutting or paring off the ſurface of turf, and reducing it to aſhes by means of fire. It is principally employed as a method of bringing into cultivation ſuch waſte and other lands as contain much coarſe graſs, or other vegetable productions on the ſurface. Where this is not the caſe, it can ſeldom probably be made uſe of to ſo much advantage. It is in ſome diſtricts termed *Burn-beating*; and alſo *Denſhiring*, from Devonſhire, a county in which it has been long practiſed. See Paring and Burning.

Burn, *heart*. See Cardialgia.

BURNET, Gilbert, in *Biography*, an eminent Engliſh prelate and writer, was born at Edinburgh in 1643. His father was the deſcendant of an ancient family in the ſhire of Aberdeen, educated for the bar, eſteemed for judgment and knowledge in his profeſſion, and diſintereſted in the exerciſe of it. As to his religious principles he was a moderate epiſcopalian; and in the time of Cromwell lived in retirement, but after the reſtoration was appointed one of the lords of Seſſion. His mother was exemplary for virtue and piety, and zealouſly attached to the Preſbyterian diſcipline. Having received the firſt rudiments of education from his father, he proſecuted his ſtudies in the college of Aberdeen, and made ſuch proficiency, that when he was ſcarcely 14 years of age, he took his degree of Maſter of Arts, and became a ſtudent of civil law. But ſoon changing his purpoſe, he devoted himſelf to divinity; and at the age of 18, he was put upon his trial as a probationer, or expectant preacher. Declining, on account of his youth, to accept a good living which was offered him, he finiſhed his education by means of the counſel and converſation of ſome eminent Scots divines, and, in 1663, viſited the two Engliſh Univerſities, where he had an opportunity of intercourſe with the moſt learned perſons of that period. Having again refuſed eccleſiaſtical preferment in Scotland, he travelled into Holland in the following year, and after reſiding for ſome time at Amſterdam, he paſſed through the Netherlands into France, and made ſome ſtay at Paris. On his return to Scotland by way of London, he became a member of the Royal Society; and, in 1665, he received prieſt's orders, and was preſented to the living of Saltown. Here he diſcharged the duties of his office with exemplary aſſiduity, and gained the eſteem of the preſbyterians, though he was the only clergyman in Scotland that uſed the liturgy of the church of England. At this time he incurred the reſentment of the epiſcopal order, by drawing up a memorial of the abuſes of the Scots biſhops, copies of which he circulated among all the prelates of his acquaintance; but this conduct, on the part of a young man at the age of 23 years, gave ſuch offence, that Sharp, archbiſhop of St. Andrew's, propoſed to deprive and excommunicate him. Againſt this attack Burnet made a ſpirited defence, and Sharp proceeded no farther. In 1669 he accepted the office of theological profeſſor in the Univerſity of Glaſgow, and continued for four years and a half to perform the duties of it with ſingular diligence; expoſing himſelf at the ſame time, by his moderation, to the ill-will of the zealots of both the epiſcopalian and preſbyterian parties. His pamphlet, publiſhed this year, and entitled, "A modeſt and free Conference between a Conformiſt and Non-conformiſt," was well received by all candid perſons, though it did not eſcape the cenſure of bigots. Notwithſtanding the time and attention which he devoted to his public lectures, he was employed in arranging the papers of the Hamilton family, and compiling from them his "Memoirs of the Dukes of Hamilton;" and he was thus led to negociate and conclude a reconciliation between the earl of Lauderdale and the duke of Hamilton. During his ſtay in London on this occaſion, he was offered a Scots biſhopric, which he refuſed. On his return to Glaſgow, he married lady Margaret Kennedy, the daughter of the earl of Caſſilis; who was diſtinguiſhed by her piety and knowledge, and though inclined to the party of the preſbyterians, was far from being a zealot, and had given evidence of her loyalty, even at the riſk of her life, during the uſurpation of Cromwell. In 1672, Burnet publiſhed "A Vindication of the Authority, Conſtitution, and Laws of the Church and State of Scotland;" in which he defended the royal prerogatives of the crown of Scotland, and the eſtabliſhment of epiſcopacy in that kingdom, againſt the principles of Buchanan and his followers. This publication drew upon him the cenſures of Dr. Hickes, whoſe calumnies he confuted, and occaſioned ſome ſevere reflections of Dr. Swift, by whom he is charged with having altered his ſentiments concerning the doctrines of paſſive obedience. Whereas the illegality of reſiſtance, merely on account of religion, probably in oppoſition to the violent Scotch covenanters, is the point for which he contends. It ſeems, indeed, always to have been his opinion, that reſiſtance could not be juſtified by ſingle acts of oppreſſion, and that it was not lawful till attempts were made to overturn the very baſis of the conſtitution. In recompence for this acceptible ſervice to the court, he was again offered a biſhopric, with the promiſe of the firſt archbiſhopric that ſhould become vacant; but he declined accepting this dignity. In the following year he viſited London with the oſtenſible deſign of obtaining a licence for the publication of his "Memoirs of the Dukes of Hamilton," and, as it is ſaid, with a ſecret purpoſe of withdrawing himſelf from ſtate concerns, under a perſuaſion that popery was the prevailing intereſt at court. At this time, however, he was a favourite with his Majeſty and the duke of York, and was nominated one of the king's chaplains in ordinary. In an interview with the king, to whom he was introduced by the duke of Lauderdale, he uſed all the freedom which, as he thought, became his profeſſion. But ſuſpecting the deſigns of the court party, he inclined to the oppoſition in the Scots parliament, and thus incurred the enmity of the duke of Lauderdale, who preferred accuſations againſt him, which deprived him of the royal favour. As a meaſure of perſonal ſecurity, he reſigned his profeſſorſhip at Glaſgow, and determined to ſettle in London; but upon his arrival there he was coldly received by the king, and ſtruck out of the liſt of his chaplains. He was now conſidered as a ſufferer for his principles, and, in 1675, having refuſed the living of St. Giles's, Cripplegate, which was offered him, he was appointed, by the recommendation of lord Holles, preacher at the Rolls, and he was ſoon after choſen lecturer of St. Clement's, where he acquired the reputation of a very popular preacher. In the courſe of this year he was repeatedly examined at the bar of the Houſe of Commons with reſpect to the deſigns of Lauderdale, and obliged to communicate ſome particulars that had paſſed between himſelf and the duke in private converſation. The alarm that agitated the country at this time, occaſioned by the progreſs of popery, induced Dr. Burnet to write "The Hiſtory of the Reformation of the church of England;" the firſt volume of which appeared, in folio, in 1679, when the popiſh plot occupied the public attention: the publication of this work was highly acceptable, and the author received the thanks of both houſes of parliament, which was an honour that had no precedent, and he was requeſted to complete it. Accordingly, in 1681, he publiſhed the ſecond volume. The third volume, being a "Supplement" to the two former, appeared in 1714. This work, though it was attacked by many cenſorious critics, has been generally eſteemed the moſt valuable of the author's performances, and contains a correct and ample account of the tranſactions to which it relates. It was well received abroad as well as at home, and very much contributed to advance the reputation of the author. Dr. Birch, in his Life of Archbiſhop Tillotſon (p. 59.) obſerves, that this is one of the moſt valuable hiſtories in our own or any other language, and that the publication of it was of moſt ſeaſonable ſervice to the nation, amidſt the alarms of popery. Dr. Apthorpe alſo ſays (ſee Letters on the Prevalence of Chriſtianity), that Biſhop Burnet, in his immortal hiſtory of the Reformation, has fixed the proteſtant religion in this country, as long as any religion remains amongs us; and the ſame learned writer calls him the Engliſh Euſebius. An incident occurred about this time which led to an interview between Dr. Burnet and the earl of Rocheſter, whoſe character as a perſon of wit and profligacy is well known. Having been requeſted to viſit the unhappy female with whom the earl had had a criminal connection, in a dangerous illneſs, he treated her in a manner which rendered this lord deſirous of forming an acquaintance with him. Accordingly alarmed by his ſituation and proſpects in the cloſing ſcene of life, he invited and encouraged the viſits of Dr. Burnet, and the reſult of many conferences that paſſed between them on religious ſubjects was the earl's converſion to the Chriſtian faith, and his ſincere repentance. Of their mutual intercourſe, and the effects produced by it, we have an intereſting relation in an "Account of the Life and Death of the earl of Rocheſter," publiſhed by Dr. Burnet in 1680; a very popular work, which was peruſed with great ſatisfaction by all the friends of religion. Of this book, Dr. Johnſon ſays (Prefaces, &c. to the Works of the Poets, vol. iv.) that it ought to be read by the "critic for its eloquence, the philoſopher for its arguments, and the ſaint for its piety." During the alarm of the popiſh plot, Dr. Burnet was frequently conſulted by king Charles concerning the ſtate of the nation, and allured to ſupport the court intereſt by the offer of the biſhopric of Chicheſter, which he refuſed; but he availed himſelf of an inducement which attendance at the death-bed of Mrs. Roberts, one of the king's miſtreſſes, ſuggeſted, for writing a letter to his Majeſty, in which he uſed great freedom in reprehending the vices and errors both of his private life and public adminiſtration. When the king had peruſed it twice he threw it into the fire, and ſpoke of the writer with diſpleaſure. Dr. Burnet at this time recommended moderate meaſures; and inſtead of the excluſion of the Duke of York, he propoſed the ſcheme of a prince regent; and yet he maintained a ſteady adherence to his friends, nor did any proſpect of preferment induce him to abandon them. The ſpeech delivered by lord Ruſſel on the ſcaffold, is ſaid to have been penned by Dr. Burnet. In 1682 he publiſhed his "Life of Sir Matthew Hale," and his "Hiſtory of the Rights of Princes in diſpoſing of Eccleſiaſtical Benefices and Church Lands," together with an "Anſwer" to the animadverſions of an anonymous writer on the latter performance. In the following year, perceiving the ſtorm that was gathering, he retired to Paris, where he was well received; and at this time appeared his "Tranſlation and Examination of a Letter, written by the laſt General Aſſembly of the Clergy of France to the Proteſtants inviting them to return to their Communion, &c." and alſo his "Tranſlation of Sir Thos. More's Utopia," with a preface concerning the nature of tranſlations. In 1684, he was ſo much the object of court-reſentment, that he was diſcharged from the office of lecturer at St. Clement's by the king's mandate to the rector; and, by an order tranſmitted from the lord-keeper North to Sir Harbottle Grimſton, Maſter of the Rolls, forbidden to preach any more at the Rolls chapel. In the following year he publiſhed his "Life of Dr. William Bedell, biſhop of Kilmore, in Ireland," Upon the acceſſion of king James, he left the kingdom, and lived in a very retired manner at Paris, that he might incur no ſuſpicion of being concerned in any conſpiracies in favour of the duke of Monmouth; and from Paris he travelled into Italy, and was agreeably received both at Rome and Geneva. At the latter place he remonſtrated againſt the ſubſcriptions to the formulary, commonly called "Conſenſus," a conſent of doctrine, that was impoſed upon thoſe who were admitted into orders; and ſucceeded in releaſing the clergy of Geneva from ſuch ſubſcriptions. After a tour through the ſouthern parts of France, Italy, Switzerland, and many parts of Germany, of which he has given an account in his "Travels," publiſhed in 1687, (in which year alſo, appeared his "Tranſlation of Lactantius, concerning the death of the perſecutors,") he was invited to the Hague by the prince and princeſs of Orange, and had a great ſhare in the councils relating to England. However, to gratify king James, and in compliance with an earneſt requeſt communicated by his ambaſſador at the Hague, he was diſmiſſed from the court, though he ſtill retained his influence. This expreſſion of royal diſpleaſure was followed by a proſecution for high treaſon, inſtituted againſt him both in Scotland and England; and as the States refuſed to deliver him up at the demand of the Engliſh court, deſigns were formed for ſeizing his perſon, and even for deſtroying him. About this time Dr. Burnet married Mrs. Mary Scott, a Dutch lady of large fortune, noble extraction, from a branch of the family of Buccleugh in Scotland, and very diſtinguiſhing accompliſhments.

In the whole conduct of the revolution in 1688, Dr. Burnet took a very active part; and having notified the project at an early period to the houſe of Hanover, he accompanied the prince of Orange in his expedition to England, as his chaplain: upon his landing near Exeter, he drew up the aſſociation for purſuing the ends of the prince's declaration; and as ſoon as king William was advanced to the throne, his attachment and ſervices were recompenſed by promotion to the ſee of Saliſbury, to which he was conſecrated in 1689. Having taken his ſeat in the houſe of lords, he recommended moderate meaſures with regard to the clergy who ſcrupled to take the oaths, and a toleration of the Proteſtant diſſenters; and upon occaſion of ſettling the ſucceſſion of the crown, he was appointed by the king to propoſe in parliament the ducheſs (afterwards electreſs) of Brunſwick, as next in ſucceſſion after the princeſs of Denmark and her iſſue. He was thus engaged in an epiſtolary correſpondence with princeſs Sophia, which laſted till her death. In this year, he addreſſed to the clergy of his dioceſe a "Paſtoral Letter," concerning the oaths of allegiance and ſupremacy to king William and queen Mary, in which he grounded the title of their majeſties to the crown upon the right of "conqueſt;" and in ſo doing, he gave ſuch offence to ſeveral members of parliament, that they procured an order for burning the book by the hands of the common executioner. A ſimilar offence was committed by Charles Blount, eſq. (ſee BLOUNT), and it incurred the ſame cenſure and ignominy. As ſoon as the biſhop was releaſed from his parliamentary duty, he withdrew to his dioceſe, and applied with exemplary diligence to his epiſcopal functions, which he performed in a manner that engaged univerſal reſpect and eſteem. Beſides being indefatigable in preaching, lecturing, catechiſing, confirming and examining for holy orders, he inſtituted at Saliſbury a ſmall nurſery of ten ſtudents in divinity, to each of whom he allowed a ſalary of 30l. a year. But when he found that this inſtitution gave offence, and was conſidered as a kind of tacit cenſure upon the method of education at the univerſities, he laid it aſide. In 1692 he publiſhed his treatiſe, entitled "The Paſtoral Care," illuſtrating and enforcing the duties of the clergy: and in the following year, "Four Diſcourſes to the Clergy of his Dioceſe," on the "Truth of the Chriſtian Religion," the "Divinity and Death of Chriſt," the "Infallibility and Authority of the Church," and the "Obligation to continue in the Communion of the Church." In 1694, he preached the funeral ſermon of archbiſhop Tillotſon, and vindicated his memory from the attacks of his enemies; and, in the following year, he wrote in the higheſt ſtrain of eulogy, an "Eſſay on the Character of Queen Mary, on occaſion of her death." Having loſt his wife in 1698, he ſoon ſupplied the loſs by a marriage with Mrs. Berkley, whom he entruſted with the care of his children, and who ſeems to have been well qualified for undertaking this charge, as ſhe was a lady of diſtinguiſhed benevolence and piety. Her treatiſe, entitled, "A Method of Devotion, or Rules for holy and devout Living, &c." was publiſhed in 8vo. and well received. In the ſame year, biſhop Burnet was appointed preceptor to his highneſs the duke of Glouceſter, and he took great pains in the conduct of his education till his death. In 1699, he publiſhed his "Expoſition of the 39 Articles of the Church of England," which, notwithſtanding the cenſure paſſed upon it by the lower houſe of convocation, and ſeveral private attacks, has been reckoned a learned and judicious performance. It was undertaken at the requeſt of queen Mary, reviſed and corrected by archbiſhop Tillotſon, and peruſed and approved before publication, by the archbiſhops Teniſon and Sharp, and the biſhops Stillingfleet, Patrick, Lloyd, Williams, and More. Biſhop Burnet had the honour of firſt projecting the ſcheme for the augmentation of poor livings, which was ſanctioned in 1704 by act of parliament. See AUGMENTATION. During the remaining years of his life, he was employed in the compoſition and publication of ſeveral treatiſes appropriate to his profeſſion, among which, we may reckon a collection of "Sermons," and "Pamphlets," 3 vols. 4to. 1706; an "Expoſition of the Church Catechiſm," 1710; and "Sermons on ſeveral Occaſions," with an "Eſſay towards a new Book of Homilies," and a "Preface," containing a judicious and elaborate defence of the revolution. He was alſo the author of a great variety of pieces, ſome of which were publiſhed during his life, and others after his death. A catalogue of his works, drawn up by Dr. Flexman, is annexed to the later editions of his "Hiſtory of his own Time." To this catalogue, ſome few publications have been added in the laſt edition of the "Biographia Britannica;" and particularly "Thoughts on Education," printed at London in 1761, from an original MS., drawn up when the author was not quite 25 years of age, and containing a variety of obſervations which indicate much knowledge and reflection. The cloſe of his life, which was terminated by a pleuritic fever on the 17th of March 1715, was ſuitable to the character which he had uniformly maintained, and manifeſted that tranquillity and firmneſs, which his religious principles were adapted to produce and juſtify. His remains were depoſited in the pariſh church of St. James's, Clerkenwell. By his laſt will he left orders, that the "Hiſtory of his own Time" ſhould not be printed till ſix years after his death, and then faithfully, without adding, ſuppreſſing, or altering it in any particular. Accordingly, the firſt volume was printed at London in 1723, and the ſecond in 1734, with an "Account of the Author's Life" annexed to it, in folio, by his ſon, Thomas Burnet, eſq. This work has given riſe to a great number of ſtrictures, and various ſentiments have been entertained concerning it. At its firſt appearance, a general clamour was excited againſt it among the tories and high church-men; and many other perſons were offended by the freedom with which particular characters were drawn, and particular facts repreſented. The wits too combined to expoſe it to ridicule. The real merit of this hiſtory ſeems to be very candidly and impartially appretiated in the laſt edition of the "Biographia Britannica." Allowing for the errors and inaccuracies common to the hiſtorians of that period, for ſome inſtances of party prejudice and credulity, and for that diſpoſition to look on the dark ſide of a character, and to exaggerate the failings and faults of public men, which in ſome caſes may have given a bias to the author's judgment; admitting his integrity, and his deſire to ſtate the truth of facts according to the beſt of his knowledge; and recollecting that when he appeals to the teſtimony of others, he honeſtly refers us to his authorities, and that ſeveral of the facts which occur in his hiſtory, and which were at firſt diſcredited or conſidered as dubious, have, ſince his time, been proved to be true; this hiſtory may be regarded as containing, upon the whole, a faithful and intereſting repreſentation of times and manners. "In ſhort, it is written with a ſpirit of integrity and liberty that cannot fail of recommending it to a judicious reader; and there are few hiſtories in our language which will be found to convey more ſolid and uſeful information. Accordingly, notwithſtanding the various attacks to which it hath been expoſed, it ſeems to be riſing in reputation; and, in our opinion, (Biog. Brit.) it clearly deſerves the encomium which hath lately been beſtowed upon it by a very elegant poet."

> "Yet Burnet's page may laſting glory hope,
> Howe'er inſulted by the ſpleen of POPE.
> Tho' his rough language haſte and warmth denote,
> With ardent honeſty of ſoul he wrote:
> Tho' critic cenſures on his work may ſhower,
> Like faith, his freedom has a ſaving power." –
> Hayley Eſſ. on Hiſt. p. 51.

This teſtimony deſerves the more to be regarded, as the biſhop has ſpoken of poets in terms ſomewhat diſparaging, and thus incurred the obloquy of perſons of taſte. Virgil for his fancy, ſays Burnet, in his "Thoughts on Education," deſerves not the name of a poet, but of an eloquent verſifier. Dryden he repreſents, probably referring to his plays, and not to his perſonal character, as a monſter of immodeſty, and of impurity of all ſorts: and Prior he ſtyles, *one* Prior, though he had long before diſtinguiſhed himſelf by his elegant poetical productions.

As a writer, though the biſhop ought not to be ranked in the firſt claſs of authors, he deſerves the praiſe of perſpicuity, vigour, and variety of knowledge; and we ought therefore to allow for party-prejudice, when we advert to the aſperity with which Dr. Swift has reprobated his ſtyle. What were his ſentiments as a theologian, we may infer from the publications already enumerated, and paticularly from the teſtimony borne to his vindication of the 39 articles by the principal dignitaries of the church. With his attachment to the church, he blended a conſiderable degree of moderation and liberality towards Proteſtant diſſenters, and others who differed from him: and with reſpect to political matters, although he has been reproached as a party-man, he was candid in his judgment of perſons of different connections, and he even exerciſed great kindneſs towards ſome who had engaged in deſigns againſt the government. In his general character, he was pious and devout, condeſcending and communicative, benevolent and charitable; exemplary in the diligence with which he performed all his clerical and epiſcopal functions, diſintereſted as a patriot, and eminently ardent and active in his proſecution of every meaſure, which, in his judgment, tended to the public good. His failings were vanity, credulity, ſelf-importance, over-officiouſneſs, and a kind of goſſiping garrulity. It is natural to imagine, that, conſidering the times in which he lived, and the oſtenſible part which he took in public and political concerns, he would not be likely to eſcape reproach; but notwithſtanding the freedom and ſeverity with which his principles and character have been ſcrutinized and cenſured, his name has deſcended to poſterity with honour, and his public ſervices at an intereſting period in the hiſtory of this country, as well as his private character, will be recognized with veneration by all perſons, who are attached to the intereſts of conſtitutional liberty and the Proteſtant religion.

Biſhop Burnet, by his ſecond wife, Mrs. Mary Scott, had ſeven children, three ſons and four daughters. His three ſons ſurvived him, as well as two of his daughters. *William*, his eldeſt ſon, was educated as a gentleman-commoner in the univerſity of Cambridge, and made choice of the profeſſion of the law. Having been a great ſufferer in the South Sea ſcheme of 1720, he became governor, firſt of New York, and the Jerſeys, and afterwards of the Maſſachuſetts and New Hampſhire. He died at Boſton in 1729; and was the author of a tract, entitled, "A View of Scripture Prophecy."

Gilbert, the biſhop's ſecond ſon, was educated at Leyden, and as a commoner of Merton college, in the univerſity of Oxford, with a view to the church. Having entered into holy orders, he was king's chaplain in 1718 when he could not be 30 years of age, and he is ſaid to have contributed to a periodical paper at Dublin, entitled "Hibernicus's Letters," and alſo to another valuable paper, entitled "The Free-thinker," afterwards publiſhed in 3 vols. 12mo. and now become ſcarce. He was alſo a diſtinguiſhed writer on the ſide of Hoadly in the Bangorian controverſy, and was conſidered by this eminent prelate as one of his beſt defenders. His "Full and Free Examination of ſeveral important Points relating to Church Authority, &c. &c." was printed in 1718, 8vo. and has been reckoned a maſterly performance, diſplaying great liberality of mind. ſtrong powers of reaſoning, and an accurate acquaintance with ſcripture. In 1719, he publiſhed an Abridgment of the third volume of his father's Hiſtory of the Reformation. He died in early life. The Gilbert Burnet who abridged the Boylean lectures was a different perſon. See Boyle's *Lectures.*

Thomas, the biſhop's third ſon, enjoyed the ſame advantages of education with his two elder brothers. He was admitted a commoner of Merton college in the univerſity of Oxford, and having ſtudied two years at Leyden, made a tour from France, through Germany, Swiſſerland, and Italy. Upon his return to England, he devoted himſelf to the profeſſion of the law, and in early life purſued a courſe of diſſipation, which occaſioned great uneaſineſs to his father. At this time, however, viz. in 1712 and 1713, he wrote ſeveral political pamphlets in favour of the Whigs againſt the adminiſtration of the four laſt years of queen Anne. One of theſe pamphlets cauſed his being taken into cuſtody in January 1713: and in another, entitled "Some new Proofs, by which it appears, that the Pretender is truly James the Third," he gives the ſame account, in ſubſtance, of the Pretender's birth, that was afterwards publiſhed in the biſhop's Hiſtory of his own Time. Notwithſtanding theſe literary engagements, he ſtill purſued his wild courſes; but one day, being unuſually grave, his father aſked him what was the ſubject of his meditation: "A greater work," replied the ſon, "than your lordſhip's Hiſtory of the Reformation;" "what is that, Tom?" "My own reformation my lord." "I ſhall be heartily glad to ſee it," ſaid the biſhop, "but almoſt deſpair of it." This, however, was happily accompliſhed after the biſhop's deceaſe; and Mr. Burnet became, not only one of the beſt lawyers of his time, but a very reſpectable character. After the acceſſion of George I. he wrote a letter to the earl of Halifax on the "Neceſſity of impeaching the late Miniſtry," which was followed by "A ſecond Tale of a Tub, &c." being a ſatire on the earl of Oxford and his miniſtry. Soon after his father's death, he publiſhed "A Character of the right reverend Father in God, Gilbert Lord Biſhop of Sarum; with a true Copy of his laſt Will and Teſtament." Mr. Burnet was alſo concerned with others in writing a traveſtie of the firſt book of the Iliad, under the title of "Homerides," which gave occaſion to Mr. Pope for introducing him into the Dunciad, and in a weekly paper called the "Grumbler." About this time he was appointed his Majeſty's conſul at Liſbon, where he remained for ſeveral years. Upon his return, he reſumed the profeſſion of the law, and roſe through ſeveral gradations of preferment, in 1741, to the rank of one of the juſtices of the court of common pleas. He alſo received the honour of knighthood, and became a member of the royal ſociety. In the court of common pleas he continued, with great reputation to his death, which happened on the 5th of January 1753. His character was that of an able, upright judge, a ſincere friend, a ſenſible and agreeable companion, and a munificent benefactor to the poor. A remarkable clauſe in his will, in which he expreſſes the ſentiments of a judicious and candid perſon, who underſtood the true nature of Chriſtianity, and, who, whilſt he gave the preference to the church of England, was perſuaded that no religious eſtabliſhment was entirely free from defects, furniſhed occaſion for ſome ſtrictures in a ſerious and ſenſible pamphlet, entitled "The true Church of Chriſt, *which*, and *where to be found*, &c." Some poetical productions of his youth were publiſhed in 1777, 4to.; the characteriſtic excellence of which is an eaſy negligence and elegant ſimplicity.

Beſides ſir Thomas Burnet, there lived in the laſt century another *Thomas Burnet*, who was an eminent divine, and author of ſeveral valuable publications. He was educated in New College, Oxford; became rector of Weſt Kingſton, Wilts, and prebendary of Sarum; and died in May 1750. His four principal works are, "An Anſwer to Tindal's Chriſtianity as old as the Creation;" a "Treatiſe on Scripture Politics;" a "Courſe of Sermons preached at Mr. Boyle's Lecture;" and an "Eſſay on the Trinity," in which laſt performance he endeavours, with great ingenuity and plauſibility, to unite the rationality claimed by the Unitarians, with the orthodox language of thoſe who admit the Athanaſian doctrine of the Trinity. Gen. Dict. Biog. Brit.

Burnet, Thomas, a learned and ingenious divine, erroneouſly ſuppoſed to be a native of Scotland, was born at Croft, in Yorkſhire, in 1635, entered, in 1651, at Clare-hall, in the Univerſity of Cambridge, under the maſterſhip of Mr. John Tillotſon (afterwards archbiſhop of Canterbury), and upon the removal of Dr. Ralph Cudworth from the maſterſhip of that college to that of Chriſt-college, admitted of that houſe, and choſen fellow in 1653, and in 1661, ſenior proctor of the Univerſity. After his travels, as tutor to the earl of Wiltſhire, and as governor to the duke of Bolton, and the earl of Oſſory, afterwards duke of Ormond, he ſettled at home; and became diſtinguiſhed as an elegant writer and an acute philoſopher. Of his celebrated work, entitled "Telluris Theoria Sacra," &c. the firſt two books were publiſhed in 1680, and the two remaining books in 1689, in 4to. This performance was ſo much admired on its firſt appearance in Latin, that the author publiſhed an Engliſh edition of it, in ſubſtance the ſame with the Latin, but newly compoſed with a variety of additions, in two volumes; the firſt of which was dedicated to king Charles II. and the ſecond to queen Mary. To the ſixth edition, in 1726, is added, the "Author's Defence of the Work from the Exceptions of Mr. Warren, and the examination of Mr. Keil." Of this theory a particular account will be given in a future article. See EARTH. We ſhall here obſerve, that though the principles of it have been demonſtrated to be erroneous, and it can be regarded only as a beautiful philoſophical romance, it was much applauded on its firſt appearance, and many perſons were ſeduced by the invention and ingenuity diſplayed in it, and by the elegance of its compoſition. Among its admirers we may reckon Bayle, who entertained a very high opinion of it, and particularly Mr. Addiſon, who addreſſed to the author an elegant Latin poem, into which he has transfuſed the fancy and ſublimity of the original. The mathematicians, however, were not ſo eaſily ſeduced. Mr. Keil attacked it with ſeverity; and Mr. Flamſtead obſerved concerning it, that "there went more to the making the world than a fine turned period; and that he was able to overthrow it in one ſheet of paper." In 1685 Dr. Burnet was elected, by the intereſt of the duke of Ormond, into the maſterſhip of the Charter-houſe; and ſoon after he entered into holy orders. In his ſituation at the Charter-houſe he reſiſted the illegal attempt of king James II. to introduce one Popham, a papiſt, as a penſioner into that houſe; and his oppoſition to him was ſupported by the other governors, the lord chancellor Jefferies excepted, ſo that the king deſiſted from purſuing the conteſt. After the revolution, Burnet was appointed chaplain to king William, and through the intereſt of Archbiſhop Tillotſon, clerk of the cloſet to that prince. In 1692 he publiſhed his "Archeologiæ Philoſophicæ," in which he not only queſtioned the literal hiſtory of the fall, but imprudently introduced an imaginary dialogue between Eve and the Serpent, which gave great offence. So ſenſible was he of the imprudence of this dialogue, that when a new edition of the "Archeologiæ" was printing in Holland, he deſired that it might be ſuppreſſed, and it was likewiſe omitted in the ſecond edition of the year 1733. To this work was prefixed a dedication to king William, in which the character of that prince is drawn with great ſtrength and elegance. The clergy were ſo offended by the publication of this work, that it is ſaid to have occaſioned his removal from the office of clerk of the cloſet; and though he was favoured by king William, and patronized by archbiſhop Tillotſon, the ſcepticiſm and heterodoxy charged on his writings, prevented his preferment in the church, and particularly his advancement to the epiſcopal bench, and even to the ſee of Canterbury, which is ſaid to have been in contemplation. He died September the 27th 1715, and was buried in the chapel of the Charter-houſe. After his death were publiſhed two poſthumous treatiſes; one entitled "De Fide et Officiis Chriſtianorum," being part of a larger deſign, and a valuable compend of Chriſtian doctrine and duty, written with a liberal ſpirit, but not deemed altogether unexceptionable; and the other, entitled "De Statu Mortuorum et Reſurgentium;" to which is added an appendix, "De Futura Judæorum Reſtauratione." In this work the author has given greater ſcope to his fancy; attacked the doctrine of the eternity of hell torments; and contended for the final ſalvation of the whole human race. But ſo apprehenſive was the author leſt his notions concerning the temporary duration of future puniſhments ſhould be made an ill uſe of by the bulk of mankind, that in a note to this work, he earneſtly proteſted againſt its being tranſlated. Dennis, however, in defiance of the author's proteſtation, not only publiſhed a tranſlation of the treatiſe, but with a fidelity which can hardly be thought a ſufficient excuſe for the effrontery of it, inſerted the note in Engliſh at the bottom of the page. Dr. Burnet was alſo the author of three ſmall tracts in oppoſition to Mr. Locke, to which was publiſhed a reply by Mrs. Cockburne, contained in Dr. Birch's edition of that lady's works. Whatever opinion may be entertained of Dr. Burnet's ſpeculations, philoſophical and theological, his ſtyle, both in Latin and Engliſh, has been univerſally admired for its elegance and perſpicuity. Biog. Brit. Brucker's Hiſt. Philoſ. by Enfield, vol. ii. p. 484.

BURNET, THOMAS, a Scotch phyſician, educated at Edinburgh, where he arrived at the honour of being fellow of the Royal College, and phyſician to the king, was author of "Theſaurus Medicinæ et Practicæ ex præſtantiſſimorum Medicorum Obſervationibus collectus," 4to. London, 1672. It has been frequently reprinted, and contains many curious and uſeful obſervations. Alſo, "Hippocratis Contractus, in quo Hippocratis Opera omnia in brevem Epitomen reducta debentur," 8vo. Edinb. 1685. A convenient compendium, with perpetual references to the Opera Omnia. Haller. Bib. Med.

BURNET, in *Agriculture*, the name of a plant that may be cultivated in ſome caſes with advantage, as a green winter food for different ſorts of animals. As the providing of a large ſupply of green food for live ſtock, eſpecially fattening ſheep, ewes, and lambs, and for milch cows, during the winter and early ſpring months, is an object of the greateſt importance to the farmer, he ſhould not neglect the culture of ſuch plants as promiſe to be beneficial in this way; for as turnips, though well adapted to the purpoſe, cannot be preſerved in ſevere winters, and clover, rye, and other graſſes are not ready ſufficiently early; burnet, in ſuch caſes, ſhould be attended to in this view. It is not, probably, however, ſo agreeable a food for animals as that of ſome other plants, but from its ſtanding ſeveral winters without injury, and being an early plant, it may frequently be found highly uſeful.

It ſucceeds on almoſt any ſorts of ſoil but thoſe of a ſtrong clayey nature, and may be ſown, like other ſeeds, with corn, and covered by means of a ſlight harrowing. The produce is in proportion to the goodneſs of the land. The quantity of ſeed ſown is commonly about a buſhel to an acre. The author of the New Farmer's Calendar thinks it advantageous to mix burnet with ray-graſs and white clover, or with the latter alone, not only with the view of ſecuring a good bottom, but to render the herbage more palatable to cattle in general, which he has been convinced, by ocular proof, have no great reliſh for burnet: they, however, become accuſtomed, he ſays, to its cucumber-flavour in time, and contented with it; no ſmall inducement to which is, that they are commonly fed with it when no other graſs is to be obtained. And Mr. Young obſerves, that it does well mixed with ray-graſs, or cock's-foot, in the proportion of about three pecks of burnet to one of either of the other two. April is recommended as the proper ſeaſon for ſowing burnet with crops of barley or oats, covering it in by two harrowings. It may likewiſe be ſown with buck-wheat in May, with great propriety.

In the raiſing of crops of this ſort much depends upon having good well ripened ſeed of the true kind, which is always the beſt provided by collecting it from the beſt plants by the farmer himſelf.

When deſigned for ſheep paſture, the beſt method of ſowing this crop is probably that of broadcaſt over the ſurface; but in other caſes the drill mode may be employed.

Of the ſalubrity of this plant there is, the firſt of theſe writers thinks, "no queſtion; and even its medicinal virtues are confidently ſpoken of, particularly for ſheep ſuſpected of unſoundneſs. It is excellent winter-food for deer and rabbits. Several reaſons are to be aſſigned for the ill ſucceſs which has attended various attempts to cultivate this graſs, as will appear in the following directions. Its chief uſe is as an early graſs, and whilſt young; and it muſt never be given to cattle when old and ſtalky, nor kept to that ſtate when intended for hay. In fact, burnet ſhould always be reckoned out of ſeaſon when other graſſes can be had. It never ought to be fed but from January to the end of April; and upon lands proper for it, with judicious management, it will afford paſture even in January. It receives leſs injury from froſt than any other herbage, and will even grow in the winter months, provided the weather be not too ſevere. If ſhut up in April, it will mow at Midſummer; after which it muſt be reſerved for feed until January or February, when, if the weather be favourable, it may be cut and carried to the ſtock, as in ſummer, and afterwards fed, but not too cloſe, with ſheep, until the time of ſhutting up again. It will produce upwards of a ton of hay per acre, and may be mowed again for ſeed; but if driven ſo hard, of courſe it will not produce ſo large a quantity of ſpring-feed as when mowed but once. The value of the ſeed upon an acre will be from five to ten pounds." But, "granting the truth of this account of burnet," continues the ſame author, "it would be altogether ſuperfluous to enlarge upon its value to a live-ſtock farmer; but ſuch advantages will ever be looked for in vain upon a cold barren clay, or without the ſeeds being freſh and good, or without culture and manure, even on a proper ſoil. One of the firſt objects is, to be ſure the ſeed be good, which is ſeldom the caſe, burnet being a graſs very little cultivated, and in which he has been more than once foiled in his endeavours to raiſe a crop, from that circumſtance It may be further advantageouſly cultivated in drills, and treated preciſely like lucerne, a method which he has lately adopted. It may be ſown indifferently either in ſpring, ſummer, or autumn. It frequently happens that the crop is thin until the third year, but afterwards very luxuriant, fully covering the ſoil. It is further obſerved, that burnet is a native of this country, growing ſpontaneouſly in many parts, particularly, as he has obſerved, upon Saliſbury Plain, whence he is of opinion, an indication may be drawn of its proper ſoil; like lucerne, it defies drought in ſummer, which makes it valuable in another point of view. The ſeed has been warranted as good food for horſes as corn; a conſideration for thoſe who may have the convenience of bruiſing it."

In the twenty-firſt volume of the Annals of Agriculture we have the following ſtatement of the advantage derived from five roods of wet land, a ſtrong tenacious loam, on a dry and clay-mixt bottom, eaten off by ewes and lambs in the beginning of April, beſides the ſtraw, which was carefully laid up for winter proviſion for ſheep, in wet weather, and the chaff for horſes with their corn, which are reckoned together with a week's keep of fifty ſheep, juſt taken out, as tantamount to the expence of mowing, dreſſing, and carting.

				£.	s.	d.
Keep of 30 couples for three weeks at 6d. per week				2	5	0
19 ditto, 10 days, at 4d. per week				0	9	6
Value of ſeed at 10s. per buſhel				13	0	0
				£.15	14	6
Brought forward				£.15	14	6
Rent, at 15s. per acre	0	18	9			
Tythes and town charges	0	7	6			
				1	6	3
				£.14	8	3

The land on which burnet is ſown ſhould always be made perfectly fine before the ſeed is put in.

The true management of this ſort of crop, according to Mr. Young, is not to cut it down much in the autumn or winter ſeaſons, as the great peculiarity of the plant is to afford a full bite in March; and when you have it ſix or eight inches high in October, more food will be found at that period, for it retains its leaves, as the winter froſts have but little effect upon it. "Some," ſays he, "who have found fault with it, and aſſerted that it is unprofitable, have fed off the after-graſs bare in the autumn, and let their ſheep and cattle get into it in winter. It is then no wonder the burnet does not anſwer the character given of it by others, who have managed in a different manner."

The crops of this ſort which are deſigned for ſeed, ſhould be cut about the beginning of July, when care ſhould be taken that it does not ſhed. It is the beſt practice to threſh it out in the field in the ſame manner as many other ſorts of ſmall ſeeds, the ſtraw being made into hay. The produce in both ſeed and hay is very conſiderable. When intended for hay, it ſhould be cut rather early in order to prevent its becoming too coarſe.

Beſides the modes of application for which it has been already recommended, it is of vaſt utility as an early ſpring feed for ſheep. The intelligent author of the Farmer's Calendar has obſerved that, "an acre of it, managed properly, will at this ſeaſon yield much more food than an acre of clover and rye-graſs."

The importance of the ſeed and chaff of this plant, as provender for horſes, has been highly ſpoken of by ſome, but its advantages in this way have not been yet aſcertained by any ſatisfactory ſet of experiments.

BURNET, in *Botany*. See POTERIUM and SANGUISORBA.

BURNET *Saxifrage*. See PIMPINELLA.

BURNET, *Burneta*, or *Burnetus*, in *Middle Age Writers*, denotes brown cloth made of dyed wool.

In which ſenſe the word ſtands contradiſtinguiſhed from brunus, which was applied to the wool undyed.

BURNEY's ISLAND, in *Geography* an iſland on the north-eaſt coaſt of Siberia, in the Frozen Sea; about 3 leagues from the main.

BURNHAM-MARKET, a town of Norfolk, in England, has the latter part of its name to diſtinguiſh it from other Burnhams in the ſame county. It is ſituated near the coaſt, on the northern extremity of Norfolk. Here was formerly a ſmall monaſtery of White Friars, or Carmelites, of which Robert Bale was prior. At Burnham-Deepdale are ſome ſalt marſhes, which are found to be very conducive to the fattening and preſervation of ſheep. On the high grounds along this coaſt are ſeveral tumuli, which ſome of our topographers attribute to the Saxons and Danes, who were ſlain here during the piracies of the latter. Here is a ſmall weekly market on Mondays, and the pariſh contains 169 houſes, and 743 inhabitants. Burnham-market is 118 miles N.E. of London.

BURNING, the action of fire on ſome pabulum, or fuel, whereby the minute parts thereof are torn from each other, and put into a violent motion; and ſome of them aſſuming the nature of fire themſelves, fly off *in orbem*, while the reſt are diſſipated in form of vapour, or reduced to aſhes. See Combustion.

Burning is alſo applied to the action of divers things which are cold to the touch, or do not contain fire.

In this ſenſe *aqua fortis* is ſaid to burn cloth. There are certain fogs which burn or ſcorch the corn. Virgil obſerves that ſevere cold itſelf will *burn*, that is, have much the ſame effects on the parts of the body as fire itſelf, in cauſing gangrenes.

Burning, *extraordinary caſes of*.—We have inſtances of perſons burnt by fire kindled within their own bodies. A woman at Paris, who uſed to drink brandy in exceſs, was one night reduced to aſhes by a fire from within, all but her head, and the ends of her fingers. Novum Lumen Phoſphor. accenſ. Amſt. 1717.

Signora Corn. Zangari, or, as others call her, Corn. Bandi, a lady aged 62, of an unblemiſhed life, near Ceſena in Romagna, underwent the ſame fate in March, 1731. She had retired in the evening into her chamber, ſomewhat indiſpoſed, and in the morning was found in the middle of the room, reduced to aſhes, all except her face, ſkull, three fingers, and legs, which remained entire, with the ſhoes and ſtockings on. The aſhes were light, and, on preſſing between the fingers, vaniſhed, leaving a groſs ſtinking moiſture behind, with which the floor was ſmeared; the walls, and furniture of the room, being covered with a moiſt cineritious ſoot, which had not only ſtained the linen in the cheſts, but had penetrated into the cloſet, as well as into the room over-head, the walls of which were moiſtened with the ſame viſcous humour. Mem. de Trev. an. 1731. p. 1293.

Sig. Mondini, Bianchini, and Maffei, have written diſcourſes expreſs, to account for the cauſe of ſo extraordinary an event: common fire it could not be, ſince this would likewiſe have burnt the bed and the room; beſides that it would have required many hours, and a large quantity of fuel, to reduce a human body to aſhes; and, after all, a conſiderable part of the bones would have been left entire, as they were anciently found after the fierceſt funeral fires. Sig. Mondini attributes this effect to lightning. A philoſopher of Verona maintains, that ſuch a conflagration might have ariſen from the inflammable matters wherewith the human body naturally abounds. Sig. Bianchini accounts for it from an internal fire, occaſioned by ſpirit of wine camphorated, which the lady uſed by way of bath or lotion, when ſhe found herſelf out of order. Maffei's ſyſtem is a combination of the three laſt: he ſuppoſes it owing to lightning, but lightning generated in her own body; agreeable to his doctrine, which is, that lightning does not come from the clouds; but is always produced in the place where it is ſeen, and its effects perceived. The humours of her body, naturally inflammable enough, were become preternaturally ſo, by her putrid indiſpoſition; and theſe, by perſpiration, had enveloped her body with an atmoſphere of the ſame kind, replete likewiſe with mineral matters, whereby its activity was heightened. She had probably riſen in the night to uſe her lotion, and, by the friction of her hand, had helped to kindle the flame.

We have various relations of ſeveral other perſons being burnt to death in this unaccountable manner; as Grace Pet, of Ipſwich, aged 60, in 1744; who had previouſly drank a large quantity of ſpirituous liquor, and the trunk of whoſe body was found incinerated, reſembling a heap of coals covered with white aſhes, and emitting an extremely fœtid odour and ſmoke; and Mary Clues, of Coventry, 52 years of age, in 1772, who had been much addicted to intoxication, ſo that ſcarcely a day paſſed in which ſhe did not drink at leaſt a pint of rum or anniſeed water. In her caſe nothing remained of the ſkin, the muſcles, and the viſcera; the bones of the cranium, the breaſt, the ſpine, and the upper extremities, were entirely calcined, and covered with a whitiſh efflorescence; and the room was filled with a very diſagreeable vapour. A ſimilar inſtance is mentioned by Vicq. d'Azyr, in the "Encyclopedie Methodique." A woman about the ſame age, who indulged to exceſs in ſpirituous liquors, and went to bed every night in a ſtate of intoxication, was found entirely burnt, and reduced to aſhes. Le Cat, in a memoir on ſpontaneous burning, mentions ſeveral other inſtances of combuſtion of the human body; and two other facts of a ſimilar kind are publiſhed in the "Journal de Medicine," (vol. lix. p. 440.) An attempt has been made to eſtabliſh the opinion, that theſe deſtroying internal fires are cauſed in the entrails of the body by enflamed effluvia of the blood, by juices and fermentations in the ſtomach, by the many combuſtible matters which abound in living bodies, for the uſes of life, and, finally, by the fiery evaporations which exhale from the ſettlings of ſpirit of wine, brandies, and other hot liquors in the *tunica villoſa* of the ſtomach, and other adipoſe or fat membranes; within which thoſe ſpirits engender a kind of camphor, which in the night-time, in ſleep, by a full reſpiration, are put in a ſtronger motion, and are more apt to be ſet on fire. See Phil. Tranſ. N° 476. p. 453, ſeq. Ibid. vol. lxiv. part ii. p. 340.

Others aſcribe the cauſe of ſuch perſons being ſet on fire, to lightning; and their burning ſo entirely, to the greater quantity of phoſphorus, and other combuſtible matter they contained.

M. Pierre Aime Lair communicated to the "Philomathic Society" at Paris, a memoir on the ſubject of the apparently ſpontaneous combuſtion of living individuals of the human ſpecies; and in addition to the inſtances already mentioned, and ſome others which he recites, he informs us, that Dr. Swediaur related the caſes of ſome perſons at Warſaw, who, having drank abundantly of malt ſpirits, fell down in the ſtreet, with the ſmoke iſſuing out of their mouths; and the people, who came to their aſſiſtance, ſaid they would take fire; for preventing which, they made them drink a great quantity of milk, or uſed a more ſingular expedient, by cauſing them to ſwallow urine immediately on its evacuation. The circumſtances collected from the ſeveral inſtances recited by M. Lair, are reduced by him to the nine following facts: 1. The perſons who have experienced theſe effects of combuſtion, were generally much addicted to the drinking of extremely ſtrong ſpirituous liquors: and accordingly it has been remarked, that the inhabitants of the north are moſt ſubject to theſe accidents. 2. They were uſually very fat. 3. This combuſtion has happened more frequently in the caſe of women. 4. Theſe women were old. 5. Their bodies did not appear to have been burned by a combuſtion perfectly ſpontaneous; but it appears that the fire had taken place in conſequence of ſome very ſlight external cauſe, ſuch as the fire of a taper, candle, or pipe of tobacco. 6. The extremities of their bodies, ſuch as the legs, the hands, or the cranium, eſcaped the fire. 7. Water, inſtead of extinguiſhing the fire of the burning parts of the body, gave it a greater velocity; a circumſtance which alſo occurs in fat that is burnt. 8. The fire very ſlightly damaged, and, in many inſtances, did not injure the combuſtible objects which were in contact with the body at the moment it was burning. 9. The combuſtion of theſe bodies left a reſidue of oily and fœtid aſhes, with a greaſy ſoot of a very penetrating and diſagreeable ſmell. After reciting theſe ſeveral circumſtances, the author endeavours to aſcertain the cauſe of ſo ſurpriſing a phenomenon, and with this view he advances ſeveral hypotheſes, which it is needleſs to detail, as the facts are not ſufficiently numerous nor well known to admit of eſtabliſhing a ſatisfactory theory concerning the ſpontaneous combuſtion of human bodies. The author, however, appears to attribute it to a particular ſtate of the fat produced by ſpirituous liquors; and he founds his opinion principally on the peculiar corpulence of the perſons who have fallen victims to theſe accidents, and on the obſervation that has been made, that the parts which were not ſo fat, ſuch as the extremities of the head, have eſcaped. And, laſtly, he ſupports his theory by the well known fact of the ſpontaneous combuſtion of a mixture of animal ſoot and linſeed oil, which is a mixture ſimilar to that of a fat body containing charcoal in a very minute ſtate of diviſion.

BURNING is alſo a denomination given by phyſicians to divers diſorders, on account of a ſenſation of heat that attends them. In which ſenſe we ſay a *burning* FEVER. See CAUSUS.

Among the divers ſpecies of madneſs incident to dogs, one is called the *burning* madneſs. If a mare which has been covered, and the colt knit within her, be covered by another horſe, he is ſaid to *burn* her.

BURNING is more particularly uſed for the herpes, or *ignis ſacer*, called ERYSIPELAS and *arſura*.

BURNING, among *Surgeons*, denotes the application of an actual cautery, that is, a red-hot iron inſtrument, to the part affected; otherwiſe denominated cauterization. See CAUTERY.

BURNING, in *Antiquity*, was a practice much uſed by the Greeks, Romans, and northern nations; and ſtill retained by many people in both Indies, with reſpect to their dead. See BURIAL.

In this ſenſe, *burning* ſtands oppoſite to burying; though, after burning, the bones remaining, and aſhes, have been uſually collected into urns, and depoſited in the earth.

Burning is not ſo ancient among the Greeks as interring; though we find it obtained in the time of the Trojan war: and it is reported by the ſcholiaſt on Homer (Iliad. α.) to have been firſt introduced by Hercules. At and after the Trojan war, burning was generally practiſed by the Grecians; inſomuch that when Lucian (De Luctu) enumerates the various methods uſed by different nations in the diſpoſal of their dead, he expreſsly aſſigns burning to the Greeks, and interment to the Perſians. Socrates in Plato's Phædon, mentions both cuſtoms: and it appears, that ſome of them conſidered the cuſtom of burning as cruel and inhuman; whence a poet, cited by Euſtathius (Il. α.) introduces a perſon, exclaiming againſt, and calling out upon Prometheus to haſte to his aſſiſtance, and ſteal, if poſſible, from mortals the fire he had given them. Others aſcribe the origin of this practice, which prevailed very anciently, not only in Aſia, but in the weſtern parts of the world, to reſpect and friendſhip for the deceaſed; whoſe aſhes they depoſited in urns, and preſerved with great care, and interred with funeral honours. Potter. Arch. lib. iv. cap. 6. tom. ii.

Kings were burnt in cloth made of the aſbeſtos-ſtone, that their aſhes might be preſerved pure from any mixture with the fuel, and other matters thrown on the funeral pile. And the like uſage is ſtill retained for the princes in Tartary.

Among the Greeks, the body was placed upon the top of the pile, on which were alſo thrown divers animals, and even ſlaves and captives, beſides unguents and perfumes. In the funeral of Patroclus, we find a number of ſheep and oxen thrown in, then four horſes, followed by two dogs, and laſtly, by twelve Trojan priſoners. Hom. Il. xxiii.

To this cuſtom of ſlaughtering animals, and of condemning ſlaves or captives to the flames, on occaſion of burning the dead, Virgil alludes (Æn. x. 518. xi. 82. xi. 197.); and alſo Cicero (Flacc. 38.). Afterwards gladiators, denominated Buſtuarii, (which ſee,) were made to fight, as a ſubſtitute to human ſacrifices. Thus alſo among the Gauls, ſlaves and clients were burnt on the piles of their maſters (ſee Cæſ. Bell. Gall. vi. 17.): and among the Indians and Thracians wives were burnt on the piles of their huſbands; and if one man had ſeveral wives, there was ſometimes a conteſt among them, which ſhould be preferred, and the preference was decided by lot. Ælian. vii. 18. Serv. in Æn. v. 95. A ſimilar practice has long exiſted among the Brachmans of India. See BRAHMINS. Thus among the Romans, friends teſtified their affection; as Plotinus to his patron (Plin. vii. 36.), Plautius to his wife Oreſtilla, (Val. Max. iv. 6. 3.) Soldiers to Otho (Tacit. Hiſt. ii. 49.), and Mneſter, a freedman, to Agrippina, (Tacit. Annal. xiv. 9.) The body of the deceaſed was covered with the fat of beaſts, that it might the ſooner be conſumed, it being regarded as a ſingular bleſſing to be quickly reduced to aſhes. For the ſame reaſon, when a number of bodies was arranged to be burnt on the ſame pile, they blended thoſe of moiſt temperament, and which were eaſily inflamed, with others: and to this purpoſe Plutarch (Sympoſ. l. iii. Quæſt. 4.) and Macrobius (Saturn. l. vii. c. 7.) obſerve, that to ten men it was cuſtomary to add one woman.

Soldiers uſually had their arms burnt with them. The garments worn by the living were alſo thrown on the pile with other ornaments and preſents; a piece of extravagance, which the Athenians carried to ſo great a length, that ſome of their law-givers were forced to reſtrain them, by ſevere penalties, from defrauding the living by their liberality to the dead.

The pile was ſet on fire by ſome of the neareſt relations, who prayed and offered vows to the winds to aſſiſt the flames, that the body might be quickly conſumed. While the body was burning, in the caſe of celebrated commanders, the ſoldiers and attendants expreſſed their reſpect for the dead by making a ſolemn proceſſion three times round the pile, accompanying their motions with ſhouts and ſound of trumpet: and the friends of the deceaſed ſtood by the pile, pouring forth libations of wine, and calling upon the deceaſed. When the flames ceaſed, the remains of the fire were extinguiſhed with wine, and the bones and aſhes were collected, ſometimes waſhed with wine and anointed with oil, and ſometimes incloſed with fat; and then depoſited in urns of gold, ſilver, wood, ſtone, or earth, according to the condition of the deceaſed; thoſe of perſons of rank were adorned with flowers and garlands, and ſometimes they were covered with cloth till they were lodged in the earth. Homer. Il. xxiii. xxiv. Virgil. Æn. vi. Potter. ubi ſupra.

The Romans, at firſt, uſually interred their dead. See BURIAL. But they adopted, at an early period, the cuſtom of burning from the Greeks (ſee Plut. in Numa); and this cuſtom is mentioned in the laws of Numa, and of the twelve tables (Cic. de. Leg. ii. 22.), but it did not become general, till about the end of the republic. Sylla was the firſt of the patrician band of the "Gens Cornelia," that was burnt: and he is ſuppoſed to have ordered it, leſt any one ſhould dig up his body, and diſſipate his remains, as he did thoſe of Marius. Pliny (H. N. l. vii. c. 54).

Euſtathius aſſigns two reaſons for the prevalency of burning in Greece; the firſt, that bodies being thought to be unclean after the ſoul's departure, were to be purified by fire: and that the ſoul, or purer part, being ſeparated by the flames, from the groſs inactive matter, might take its flight to the heavenly manſions with more freedom. This latter opinion obtained ſo much, that the Indian philoſophers had not patience to wait for burning till after death; they had recourſe to it in their life-time; erected themſelves piles for the purpoſe, to looſen their ſouls from confinement. Calanus, who followed Alexander out of India, finding himſelf indiſpoſed, obtained that prince's leave to prevent the growth of his diſtemper, by committing himſelf to the flames; and Hercules, before his reception into heaven, was purified from the dregs of earth by the ſame means. Quintil. Declam. x. Potter. ubi ſupra.

Pliny aſſures us, that burning was brought into uſe among the Romans, on occaſion of the cruel uſage which the bodies of the dead Romans underwent in enemies' countries. But this muſt only be underſtood in regard of the common uſage; ſince we find mention of burning as practiſed by ſome even in the earlieſt ages of Rome; Numa forbade his own body to be burned, commanding it to be laid entire in a ſtone coffin, which ſhews that the practice of burning was not then unknown at Rome. Under the emperors, as we learn from Tacitus (Annal. xvi. 9.) it became almoſt univerſal.

In ſome caſes burning was expreſsly forbid, and looked upon as the higheſt impiety. Thus infants who died before the breeding of teeth, were entombed unburnt, in the ground, in a particular place ſet apart for this uſe, called *ſuggrundarium*. The like was practiſed with regard to thoſe who had been ſtruck dead with lightning, who were never to be burnt again, but buried in the ſpot where they fell, called *bidental*, which ſee.

Some ſay, that burning was denied to ſuicides as a puniſhment.

The manner of burning among the Romans was not unlike that of the Greeks; the corpſe being brought without the city, if they deſigned to burn it, was carried directly to the place appointed for that purpoſe; which, by the law of the twelve tables, was without the city: (Cic. de Leg. ii. 23.) according to the cuſtom of other nations, as the Jews, (Matt. xxvii. 53. John, xix. 20. and 41.), the Athenians, (Cic. Fam. iv. 12. Liv. xxxi. 24.), and others, (Cic. Flacc. xxxi. Tuſc. v. 23. Plut. in Arat. Strabo, l. x.) If this place joined to the ſepulchre, it was called *buſtum*, if ſeparate from it, *uſtrina*: the body, when brought thither, was laid on the *rogus*, a pile of wood prepared to burn it on, built in ſhape of an altar, but of different height, according to the quality of the deceaſed; and at the diſtance of 60 feet from any houſe. The wood uſed was commonly from ſuch trees as contained moſt pitch or roſin; and if any other were uſed they ſplit it for the more eaſy catching fire; round the pile they ſet cypreſs trees, probably to hinder the noiſom ſmell of the corpſe. The body was not placed on the bare pile, but on the couch or bed on which it lay. The eyes of the deceaſed were opened, (Plin. ii. 37.) to which Virgil is thought to allude, Æn. iv. 214. This done, the next of blood performed the ceremony of lighting the pile, which they did with a torch, turning the face all the while the other way, as if it were done with reluctance. During the ceremony, more eſpecially at the funeral of an illuſtrious commander or emperor, decurſions round the pile were performed, with enſigns inverted, and games were celebrated; after which, when the fire was extinguiſhed, and the embers ſoaked with wine, came the *oſſilegium*, or gathering the bones and aſhes; alſo waſhing and anointing them, and repoſiting them in urns; which were common to both the Greeks and Romans. Tibull. lib. i. Eleg. i. Virg. Æn. lib. vi. Kennet and Potter, lib. cit. It is commonly ſuppoſed the practice of burning ceaſed at Rome under the empire of the Antonines.

The practice, prevalent among the Hindoos, and of which ſome rare inſtances ſtill occur, of widows burning themſelves on the funeral piles of their deceaſed huſbands, has been already mentioned; (ſee alſo the article Brachmans). Mr. Colebrooke, in a paper "on the duties of a faithful Hindoo widow," publiſhed in the 4th volume of the Aſiatic Reſearches, has collected from the ancient Sanſcrit books all the particulars that may ſerve to elucidate this extraordinary ritual. "Having firſt bathed, the widow, dreſſed in two clean garments, and holding ſome *cuſa* graſs, ſips water from the palm of her hand. Bearing *cuſa* and *tila*, or ſeſamum, on her hand, ſhe looks towards the eaſt or north, while the Bráhmana utters the myſtic word *Om*. Bowing to Nerayana, ſhe next declares: "On this month, ſo named in ſuch a *pacſha*, on ſuch a *tithi*, I (naming herſelf and her family), that I may meet *Arundhati*, and reſide in *Swarga*; that the years of my ſtay may be numerous as the hairs on the human body; that I may enjoy with my huſband the felicity of heaven, and ſanctify my paternal and maternal progenitors, and the anceſtry of my huſband's father, that lauded by the *Apſaraſes*. I may be happy with my lord, through the reigns of 14 *Indras*; that expiation be made for my huſband's offences, whether he has killed a Bráhmana, broken the ties of gratitude, or murdered his friend: thus I aſcend my huſband's burning pile. I call on you, ye guardians of the eight regions of the world! Sun and moon! Air, fire, æther, earth, and water! My own ſoul! Yama! Day, night, and twilight! And thou, conſcience, bear witneſs: I follow my huſband's corpſe on the funeral pile!" Having repeated the above declaration, called the *Sancalpa*, ſhe walks thrice round the pile; and the Bráhmana utters the following *Mantras*: "Om! Let theſe women, not to be widowed good wives, adorned with collyrium, holding clarified butter, conſign themſelves to the fire. Immortal, not childleſs, nor huſbandleſs, excellent, let them paſs into fire, whoſe original element is water." From the *Rigveda*: "Om! Let theſe wives, pure, beautiful, commit themſelves to the fire with their huſband's corpſe," A *pauránica muntra*.

With this benediction, and uttering the myſtic *Namo Namah*, ſhe aſcends the flaming pile. While the preſcribed ceremonies are performed by the widow, the ſon, or other near kinſman, of the deceaſed, applies the firſt torch with the forms directed for the funeral rites in the *Grihya* (extracts or compilations from the ſacred books); by which his tribe is governed. The laſt rites in this tragic ſcene, as we may call it, but not ſo deemed by thoſe who practiſe them, are as follow: "Adorned with all jewels, decked with *minium* and other cuſtomary ornaments, with the box of *minium* in her hand, having made *pújá* or adoration to the *Dévátás*, thus reflecting that *this life is nought; my lord and maſter to me was all*:—ſhe walks round the burning pile; ſhe beſtows jewels on the *Brahmanas*, comforts her relations, and ſhews her friends the attentions of civility; while calling the ſun and elements to witneſs ſhe diſtributes *minium* at pleaſure; and having repeated the *ſancalpa*, proceeds into the flames; there embracing the corpſe, ſhe abandons herſelf to the fire, calling *Satya! Satya! Satya!* The by-ſtanders throw butter and wood on the pile, which is reckoned an act tranſcendently meritorious, and even thoſe who join in the proceſſion are rewarded in heaven for every ſtep of their march. Such liberal immunities are a proof, ſays Mr. Colebrooke, that burning could never be a frequent practice in the eaſt.

The ſacrifice above deſcribed is not abſolutely enjoined; but it is recommended by all the allurements which enthuſiaſm can invent. There are, however, ſome caſes of exemption. If the widow has an infant child; or if ſhe is pregnant; and, among certain caſts, if the huſband dies in a diſtant country, the ceremony is interdicted. But if the woman declines burning, for ſhe is allowed the alternative, ſhe muſt thenceforth live a life of the moſt rigid auſterity, and devote herſelf wholly to acts of piety and mortification. But though the alternative be allowed, the Hindoo legiſlators have ſhewn themſelves diſpoſed to encourage widows to burn themſelves with their huſband's corpſe.

Mr. Campbell, during his ſtay at Tanjore, was a ſpectator of this horrid ceremony; performed by a young widow, not more than 16 years of age. He has minutely deſcribed all the circumſtances attending it; for an account of which we refer the reader to his "Journey over Land to India," 4to. 1795.

BURNING *alive*, among the Romans, a puniſhment inflicted on deſerters, betrayers of the public councils, incendiaries, coiners, and even Chriſtians: it was called *crematio*.

The Jews had two ways of burning; one called burning of the body, performed with wood and faggots; the other, burning of the ſoul, *combuſtio animæ*, performed by pouring ſcalding-hot lead down their throats. The prieſt's daughter who committed whoredom, he that lay with his own daughter, or grand-daughter, or his mother-in-law, were burnt alive. Phil. Tranſ. N° 230. Godw. Moſes & Aaron, lib. v. cap. 7.

BURNING, *Uſtio*, in *Chemiſtry*, is diſtinguiſhed from CALCINING; as the former is performed in cloſe veſſels, and terminates in charring, or reducing the body to a blackneſs; whereas the latter turns them white, being performed in the open air. It alſo differs from roaſting, *toſtio*, as, in burning the fire is applied in contact with the body; in roaſting, at a diſtance from it.

BURNING, or BRENNING, in our *Ancient Cuſtoms*, denotes an infectious local diſeaſe, obtained by intercourſe with the lewd women who were kept in the public ſtews. See STEWS.

Mr. William Beckett, a ſurgeon of great learning in this branch of hiſtory, has left us a curious account of the *brenning*, which was publiſhed in a letter to Dr. James Douglaſs, A. D. 1718. Mr. Beckett has certainly failed in proving the antiquity of lues venera or ſyphilis; but the information contained in his letter is too much to our preſent purpoſe to be wholly omitted. We ſhall, however, reſume this inveſtigation when we deſcribe the origin of the venereal diſeaſe; intending, in the article before us, to give only an extract from Mr. Beckett's intereſting letter; viz.

"I ſhall begin with the firſt degree of this diſeaſe, and prove, from authentic evidences, it was anciently called the *brenning* or *burning*; and that this word has been ſucceſſively continued for many hundreds of years, to ſignify the ſame diſeaſe we now call a *clap*; and that it was not diſcontinued till that appellation firſt began to have its riſe. The moſt likely method to accompliſh my deſign, will be firſt to examine thoſe records that relate to the ſtews which were by authority allowed to be kept on the Bank-Side in Southwark, under the juriſdiction of the biſhop of Wincheſter, and which were ſuppreſſed the 37th of Hen. VIII. For it is impoſſible but, if there were any ſuch diſtemper in being at that time, it muſt be pretty common among thoſe lewd women who had a licence for entertaining their paramours, notwithſtanding any rules or orders which might be eſtabliſhed to prevent its increaſe: but if we ſhall find that there were orders eſtabliſhed to prevent the ſpreading of ſuch a diſeaſe, that perſons might be ſecure from any contagious malady after their entertainment at thoſe houſes, (which were anciently 18 in number, but in the reign of Henry VII. reduced to 12), we may then ſecurely depend upon it, that it was the frequency of the diſeaſe that put thoſe who had the authority under a neceſſity of making ſuch rules and orders. For the ſame powers, who granted a liberty for keeping open ſuch lewd houſes, muſt find it their intereſt to ſecure, as much as poſſible, all perſons from receiving any injury there; leſt the frequency of ſuch misfortunes ſhould deter others from frequenting them, and ſo the original deſign of their inſtitution ceaſe; from the entire ſinking of the revenues. Now I find that as early as the year 1162, divers conſtitutions relating to the lordſhip of Wincheſter, (being alſo confirmed by the king), were to be kept for ever, according to the old cuſtoms that had been time out of mind. Among which theſe were ſome, viz. 1. No ſtew-holder to take more for a woman's chamber in the week than 14d. 2. Not to keep open his doors upon holy days. 3. No ſingle woman to be kept againſt her will, that would leave her ſin. 4. No ſingle woman to take money to lie with any man, except ſhe lie with him all night till the morning. 5. No ſtew-holder to keep any woman that hath the perilous infirmity of burning. Theſe, and many more orders were to be ſtrictly obſerved, or the offenders to be ſeverely puniſhed. Now we are aſſured, there is no other diſeaſe that can be communicated by carnal converſation with women, but that which is venereal, by reaſon that only is contagious; and it is evident the burning was certainly ſo: for, had it been nothing elſe but ſome ſimple ulceration, heat, or inflammation, there would have been no contagion; and that affecting only the woman, could not be communicated by any venereal congreſs, and ſo not infer a neceſſity of her being comprehended under the reſtraining article. Theſe orders likewiſe prove the diſeaſe was much more ancient than the date above mentioned; becauſe they were only a renewal of ſuch as had been before eſtabliſhed time out of mind.

"But to confirm this farther, I find that in the cuſtody of the biſhop of Wincheſter, whoſe palace was ſituated on the Bank-ſide, near the ſtews, was a book written upon vellum, the title of which runs thus: "Here begynne the ordinances, rules, and cuſtoms, as well for the ſalvation of mannes life, as for to aſchew many miſchiefs and inconvenients that daily be lik there for to fall out, to be rightfully kept, and due execution of them to be done unto any perſon within the ſame." One of the articles begins thus: "De his qui cuſtodiunt mulieres habentes nephandam infirmitatem.' It goes on, item, "That no ſtew-holder keep noo woman wythin his houſe, that hath any ſickneſs of brenning, but that ſhe be put out upon the peyne of makeit a fine unto the lord of a hundred ſhillings." This is taken from the original manuſcript, which was preſerved in the biſhop's court, ſuppoſed to be written about the year 1430. From theſe orders we may obſerve the frequency of the diſtemper at that time, which, with other inconveniences, was daily like there for to fall out: and the greatneſs of the penalty, as the value of money then was, that is laid on it, proves it was no trifling or inſignificant thing.

"But the bare proof of there having been anciently ſuch a diſeaſe as was called the burning, may be thought to be inſufficient, unleſs we were perfectly aſſured that it was, and how it was in thoſe times deſcribed; I ſhall therefore do it from an unqueſtionable authority, which is that of John Arden, eſq.; who was one of the ſurgeons to king Richard II. and likewiſe to king Henry IV. In a curious manuſcript of his upon vellum, he defines it to be, a certain inward heat and excoriation of the urethra; which deſcription gives us a perfect idea of what we now call a *clap*; for frequent diſſections of thoſe who laboured under that diſeaſe have made it evident, that their urethra is excoriated by the virulency of the matter they receive from the infected woman; and this excoriation or ulceration is not confined to the *oſtiola* or mouths of the *glandulæ mucoſæ*, as has been lately thought, but may equally alike attack any part of the urethra not beyond the reach of the impelled malignant matter. The heat before deſcribed, which theſe perſons are ſenſible of, as well now as formerly, is a conſequent of the excoriated urethra; for the ſalts contained in the urine muſt neceſſarily prick and irritate the nervous fibrillæ, and excite a heat in thoſe parts of the urethra which are diveſted of its natural membrane; which heat will always be obſerved to be more or leſs, as the ſalts are diluted with a greater or leſs quantity of urine; a thing I have often obſerved in perſons who have laboured under this infirmity in hot weather, when the perſpirable matter being thrown off in greater quantities, the ſalts bear a greater proportion to the quantity of urine, and thereby make its diſcharge at that time ſo much the more painful and troubleſome.

" Thus we ſee this very early and plain deſcription of this diſeaſe among us to be entirely conformable to the lateſt and moſt exact anatomical diſcoveries. Here is no tone of the teſticles depraved, according to Trajanus Petronius; no exulceration of the *paraſtatæ*, according to Rondeletius; no ulceration of the ſeminal veſſels, according to Platerus; no ſeat of the diſeaſe in the *veſiculæ ſeminales*, or *proſtatæ*, according to Bartholin; nor in thoſe parts and the teſticles at the ſame time, according to our countryman Wharton, and others, who have falſely fixed the ſeat of this diſeaſe, and whoſe notions, in this reſpect, are now juſtly exploded; but a ſingle and true deſcription of it, and its ſituation, about 150 years before any of thoſe gentlemen obliged the world with their learned labours.

" Having, I hope, ſufficiently made it appear, the burning was a diſeaſe very early among us, and given the deſcription of it, I ſhall proceed to ſay ſomething of the ancient method that was made uſe of to cure it. We are not to expect the meaſures our predeceſſors in thoſe early times made uſe of ſhould be calculated for there moving any malignity in the maſs of blood, or other juices, according to the practice in venereal caſes at this time; becauſe they looked upon the diſeaſe to be entirely local, and the whole of the cure to depend upon the removal of the ſymptoms. Hence it was they recommended ſuch remedies as were accommodated to the taking off the inward heat of the part, and cure the excoriations or ulcerations of the urethra. The proceſs for the accompliſhing of this, I ſhall ſet down from the beforementioned John Arden, who wrote about the year 1380. His words are as follow: ‘ Contra incendium. Item contra incendium virgæ virilis interius ex calore & excoriatione, fiat talis ſyringa (i. e. injectio) lenitiva. Accipe lac mulieris maſculum nutrientis, & parum zucarium, oleum violæ & ptiſanæ, quibus commixtis per ſyringam infundatur, & ſi prædictis admiſcueris lac amigdalarum melior erit medicina." There is no doubt but this remedy, being uſed to our patients at this time, would infallibly take off the inward heat of the part, and cure the excoriations or ulcerations of the urethra, by which means what iſſued from thence would be entirely ſtopt: and this was all they expected from their medicines, for as much as they were entirely unacquainted with the nature of the diſtemper; and did not in the leaſt imagine, but if the ſymptoms that firſt attacked the part were removed, the patient was entirely cured.

" I ſhall now, as a farther confirmation of what I have advanced, proceed to prove, that by this *brenning* or *burning* is meant the venereal diſeaſe, by demonſtrating that ſucceeding hiſtorians, phyſical and chirurgical writers, and others, have all along with us in England uſed the very ſame word to ſignify the venereal malady, In an old manuſcript I have, written about the year 1390, in a receipt for " brenning of the pyntyl, yat men clepe ye apegalle;" galle being an old Engliſh word for a running ſore. They who know the etymology of the word *apron*, cannot be ignorant of this. And in another manuſcript, written about 50 years after, is a receipt for burning in that part by a woman. Simon Fiſh, a zealous promoter of the reformation, in the reign of Hen. VIII. in his ſupplication of beggars, preſented to the king, in 1530, ſays as follows: " Theſe be they," ſpeaking of the Romiſh prieſts, " that corrupt the whole generation of mankind in your realm; that catch the pockes of one woman and bear them to another; that be burnt with one woman and bear it to another; that catch the lepry of one woman and bear it unto another." But to make this matter ſtill more evident, I am to obſerve, that Andrew Boord, M.D. and Romiſh prieſt, in the ſame reign, in a book he wrote, entitled "The Breviary of Health," printed in 1546, ſpeaks very particularly of this ſort of burning; one of his chapters begins thus: " The 19th chapter doth ſhew of burning of an harlot;" where his notion of communicating the burning is very particular. He adds, that if a man be burnt with an harlot, and do meddle with another woman within a day, he ſhall burn her: and as an immediate remedy againſt the burning, he recommends the waſhing the pudenda two or three times with white wine, or elſe with ſack and water; but if the matter have continued long, to go to an expert ſurgeon for help. In his 82d chapter, he ſpeaks of two ſorts of burning, the one by fire, and the other by a woman, through carnal copulation, and refers the perſon that is burnt of a harlot to another chapter of his for advice, " yf he get a dorſer or two," ſo called from its protuberancy or bunching out: for I find about that time the word *bubo* was moſtly made uſe of to ſignify that ſort of ſwelling which uſually happens in peſtilential diſeaſes.

" From hence it appears, the burning by its conſequents, was venereal, ſince every day's experience makes it evident, that the ill treatment of the firſt ſymptoms of the diſeaſe, either by aſtringent medicines, or the removing them by cooling and healing the excoriated parts, will generally be attended with ſuch ſwellings in the groin, which we rarely obſerve to happen from any other cauſe whatſoever.

" I ſhall give a few more inſtances of this diſeaſe being called the *burning*, and conclude. In a manuſcript I have of the vocation of John Bale to the biſhopric of Offory in Ireland, written by himſelf, he ſpeaks of Dr. Hugh Weſton, who was dean of Windſor in 1556, but deprived by cardinal Pole for adultery, as follows, " At this day is lecherous " Weſton, who is more practiſed in the art of brech-burn- " ing than all the whores of the ſtews." And again, ſpeaking of the ſame perſon, he ſays, " He not long ago brent " a beggar into St. Botolph's pariſh." The ſame author ſays of him elſewhere, " He had been ſore bitten with a Wincheſter gooſe, and was not yet healed thereof;" which was a common phraſe for the pox at that time, becauſe the ſtews were under the juriſdiction of the biſhop of Wincheſter. Mich. Wood, in his epiſtle before Stephen Gardiner's oration, " De vera Obedientia," printed at Rhoan, 1553, gives another evidence of the burning. And Wm. Bullein, a phyſician in the reign of queen Elizabeth, in a book he publiſhed, called " The Bulwark of Defence, &c." printed in 1562, bringing in Sickneſs demanding of Health what he ſhould do with a diſeaſe called the " French Pockes," Health anſwers, " He would not that any ſhould " fiſhe for this diſeaſe, or to be bold when he is bitten, to " thynke thereby to be helped, bvt rather to eſchewe the " cauſe of thys infirmity, and filthy rotten burning of " harlots."

In the Sloanian library, N° 4037, is another letter, (bound up in folio, with a great many different MSS.) from Mr. William Beckett to ſir Han Sloane, dated Feb. 4th $17\frac{17}{18}$; wherein the principal facts mentioned in the letter to Dr. Douglaſs' are recited. But we found nothing beſides which is worthy of notice, except the following remark: "This *brenning* or *burning*, (being, upon the diſuſe of theſe "words, called gonorrhœa), is what we now call the *clap*: "which word I take to be of a modern uſage; for, in all "my enquiries, I cannot find it was ever deſigned to ſignify "the ſame thing it does now, before the reign of "Charles I."

Burning, in *Law*. See Arson, Branding, Treason, &c.

Burning *of diamonds*, is uſed among the jewellers for putting the diamonds into a fierce fire, in order to diveſt them of a yellow or brown colour.

Burning *on the forehead, Frontis inuſtio*, was anciently the penalty of a calumniator. In the middle age, we find frequent inſtances of *burning* in the cheek; a puniſhment allotted to bondmen, or villains guilty of theft.

Burning-*buſh*. See Bush.

Burning-*glaſs*, or *burning-mirror*, a machine whereby the ſun's rays are collected into a point; and, by that means their force and effect extremely heightened, ſo as to burn objects placed therein.

Burning-glaſſes are of two kinds: the firſt convex, called *lentes cauſticæ;* which tranſmit the rays of light, and in their paſſage refract, or incline them towards the axis; having the property of lenſes, and acting according to the laws of refraction.

The ſecond, which are the more uſual, are concave; very improperly called burning-glaſſes, being uſually made of metal: theſe reflect the rays of light, and, in that reflection, incline them to a point in their axis; having the properties of *ſpecula* or mirrors; and acting according to the laws of reflection. See Mirror and Reflection.

The firſt, or convex kind, authors ſuppoſe to have been unknown to the ancients; but the latter they are generally allowed to have been acquainted with. Their magnifying power is taken notice of both by Seneca and Pliny; and their burning power is mentioned in a treatiſe on Optics, aſcribed to Euclid, theorem 31. It is probable that the Romans had a method of lighting their ſacred fire by means of reflecting concave *ſpecula*. But Porta, and many others, ſuppoſe, that the burning mirrors of the ancients were made of metal, in the form of a ſection of a parabola, having the vertex cut off: it being the well-known property of this curve to reflect all rays that fall upon it parallel to the axis into the focus. Hiſtorians tell us, that Archimedes, by means of reflecting mirrors, burnt a whole fleet; and though the effect related be very improbable, yet it ſufficiently proves that ſuch things were then known. The machines then uſed, nobody doubts, were metallic and concave, and had their focus by reflexion: it being agreed, that the ancients were unacquainted with the refracted *foci* of convex glaſſes. Yet M. de la Hire has diſcovered even theſe in the Clouds of Ariſtophanes; where Strepſiades tells Socrates of an expedient he had to pay his debts, by means of a round tranſparent ſtone or glaſs, uſed in lighting of fires, by which he intended to melt the bond; which in thoſe days was written on wax. The glaſs here uſed to light the fire, and melt the wax, M. de la Hire obſerves, could not be concave; ſince a reflected *focus* coming from below upwards, would have been exceedingly improper for that purpoſe: and the old ſcholiaſt of Ariſtophanes confirms the ſentiment. Pliny makes mention of globes of glaſs and cryſtal, which being expoſed to the ſun, burnt the clothes and fleſh on people's backs; and Lactantius adds, that a glaſs ſphere, full of water, and held in the ſun, lighted the fire even in the coldeſt weather; which inconteſtibly proves the effects of convex glaſſes.

Indeed, there is ſome difficulty in conceiving how they ſhould know ſuch glaſſes burnt, without knowing they magnified; which it is granted they did not, till towards the cloſe of the thirteenth century, when ſpectacles were thought of. For as to thoſe paſſages in Plautus, which ſeem to intimate the knowledge of ſpectacles, M. de la Hire obſerves, they do not prove any ſuch thing; and he ſolves this, by obſerving, that their burning-glaſſes being ſpheres, either ſolid, or full of water, their *foci* would be one fourth of their diameter diſtant from them: if then their diameter were ſuppoſed half a foot, which is the moſt we can allow, an object muſt be at the diſtance of an inch and an half, in order to its being perceived magnified: thoſe at greater diſtances do not appear greater, but only more confuſed, through the glaſs than out of it. It is no wonder therefore, the magnifying property of convex glaſſes was unknown, and their burning one known; it is more wonderful there ſhould be 300 years between the invention of ſpectacles and teleſcopes.

Every concave mirror, or *ſpeculum*, collects the rays diſperſed through its whole concavity, after reflexion, into a point or focus; and is therefore a burning mirror.

Hence, as the focus is there where the rays are the moſt cloſely contracted, if it be a ſegment of a large ſphere, its breadth muſt not ſubtend an arch above eighteen degrees: if it be a ſegment of a ſmaller ſphere, its breadth may be thirty degrees; which is verified by experiment. As the ſurface of a mirror, which is a ſegment of a larger ſphere, receives more rays than another of a leſs, if the latitude of each ſubtend an arch of eighteen degrees; or even more or leſs, provided it be equal; the effects of the greater mirror will be greater than thoſe of the leſs.

And as the *focus* is contained between the fourth and fifth parts of the diameter, mirrors that are ſegments of greater ſpheres burn at a greater diſtance than thoſe which are ſegments of a ſmaller.

Since, laſtly, the burning depends on the union of the rays, and the union of the rays on the concave ſpherical figure; it is no wonder, that even wooden mirrors, gilt, or thoſe prepared of alabaſter, &c. covered with gold; nay, even that thoſe made of paper, and covered with ſtraw, ſhould be found to burn.

Among the ancients, the burning mirrors of Archimedes and Proclus are eminent; by one of which, the Roman ſhips beſieging Syracuſe, under the command of Marcellus, according to the relation of Zonaras, Tzetzes, Galen, Euſtathius, Anthemius, &c. and by the other, the navy of Vitalian beſieging Byzantium, according to the ſame Zonaras, were burnt to aſhes.

Many have queſtioned the fact recorded by ſeveral hiſtorians concerning the ſurpriſing effects of Archimedes's burning mirrors; and they have principally urged the impoſſibility of producing ſuch effects by means of concave ſpecula, the focal diſtance of which muſt have been much too ſmall for the purpoſe. Des Cartes, particularly diſcredited the ſtory, as fabulous, on this account; but Kircher made many experiments with a view of vindicating its credibility. Apprehending that the concave ſpecula of the ancients were ſections of a parabola, he began with combining ſeveral of this figure; but, failing of ſucceſs in this way, he tried the effect of a number of plane mirrors; and with five mirrors of the ſame ſize, placed in a frame, he contrived to throw the rays reflected from them to the ſame place, at the diſtance of more than a hundred feet; and by their means he produced ſuch a degree of heat, as led him to conclude that, by increaſing their number, he could have ſet fire to inflammable ſubſtances at a greater diſtance. He likewiſe made a voyage to Syracuſe, in company with his pupil Schottus, in order to examine the place of the ſuppoſed tranſaction; and they were both of opinion that the galleys of Marcellus could not have been more than thirty paces from Archimedes. M. Buffon, though ignorant of the particular teſtimonies of ancient writers, relative to the invention of Archimedes, and of the attempts of Kircher above mentioned, has more lately, by a ſimilar contrivance, ſufficiently evinced the practicability of the operation.

Dr. Wolfe, in the year 1768, after having given an account of ſome parabolic mirrors, conſtructed by M. Hoeſen of Dreſden, offers a conjecture, that thoſe of Archimedes might be of this kind, ſince it is not difficult to deſcribe a parabola, whoſe parameter is 2000 feet; and that rays reflected from ſuch a ſpeculum might be received by a lens, after having been brought to a focus, and tranſmitted parallel to any diſtance: but he was not appriſed, that Kepler and Dechales had ſhewn, that no rays could be conveyed parallel to one another, except thoſe which proceeded from the ſame points in the ſun's diſk. Dutens du Miroir Ardent d'Archimede. Paris, 1755. Phil. Tranſ. vol. xlviii. p. 621, &c. Ibid. vol. lix. p. 8.

Among the moderns, the moſt remarkable burning mirrors are thoſe of Magine, twenty inches in diameter; of Septala of Milan, which was near three feet and a half in diameter, and which burnt at the diſtance of fifteen or ſixteen paces; of Villette, and Tſchirnhauſen, the new complex one of M. Buffon, that of Trudaine, and that of Parker.

Villette, a French artiſt at Lyons, made a large mirror, which was bought by Tavernier, and preſented to the king of Perſia; a ſecond, bought by the king of Denmark; a third, preſented by the French king to the Royal Academy; a fourth has been in England, where it was publicly expoſed.—The effects of this mirror, as found by Dr. Harris and Dr. Deſaguliers, are, that a ſilver ſixpence is melted in 7″ and ½; a halfpenny of king George I. in 16″, and running with a hole in 34″. Tin melts in 3″, caſt iron in 16″; ſlate in 3″; a foſſile ſhell calcines in 7″; a piece of Pompey's Pillar in Alexandria vitrifies in the black part in 50″, in the white in 54″; copper ore in 8″; bone calcines in 4″, and vitrifies in 33″. An emerald melts into a ſubſtance like a turquois ſtone; a diamond weighing four grains, loſes ⅞ of its weight; the aſbeſtos vitrifies; as all other bodies will do, if kept long enough in the *focus;* but when once vitrified, the mirror can produce no farther effect.—This mirror is forty-ſeven inches wide; and is ground to a ſphere of ſeventy-ſix inches *radius;* ſo that its focus is about thirty-eight inches from the *vertex.* Its ſubſtance is a compoſition of tin, copper, and tin-glaſs. Phil. Tranſ. vol. iv. p. 198.

M. Tſchirnhauſen's reflecting mirror deſerves next to be mentioned. The following things are noted of it in the Acta Eruditorum, for 1687, p. 52. 1. Green wood takes fire inſtantaneouſly, ſo that a ſtrong wind cannot extinguiſh it. 2. Water boils immediately, and eggs in it are preſently edible. 3. A mixture of tin and lead, three inches thick, drops preſently, and iron or ſteel-plate becomes red hot preſently, and a little after burns into holes. 4. Things not capable of melting, as ſtones, bricks, &c. become ſoon red hot, like iron. 5. Slate becomes firſt white, then a black glaſs. 6. Tiles are converted into a yellow glaſs, and ſhells into a blackiſh yellow one. 7. A pumice-ſtone emitted from a volcano, melts into white glaſs; and, 8. A piece of crucible alſo vitrifies in eight minutes. 9. Bones are ſoon turned into an opaque glaſs, and earth into a black one. It is made of copper, and its ſubſtance is not above double the thickneſs of the back of a knife: this was about 4½ French feet in diameter, and it burnt at the diſtance of twelve feet.

Every lens, whether convex, plano-convex, or convexo-convex, collects the ſun's rays, diſperſed over its convexity, into a point by refraction; and is therefore a burning glaſs. The moſt conſiderable of this kind known, is that made by M. de Tſchirnhauſen: the diameters of his lenſes are three and four feet; the focus at the diſtance of twelve feet, and its diameter an inch and a half. To make the focus more vivid, the rays are collected a ſecond time by a ſecond lens parallel to the firſt; and ſituated in that place where the diameter of the cone of rays formed by the firſt lens is equal to the diameter of the ſecond; ſo that it receives them all; and the focus from an inch and a half, is contracted into the ſpace of eight lines, and its force increaſed proportionably. It was purchaſed by the duke of Orleans, who preſented it to the French Academy. Its weight was 160 pounds.

Its effects, among others, as related in the Acta Erudit. Lipſiæ, are, that it lights hard woods, even moiſtened with water, into a flame, inſtantly; that water, in a little veſſel, begins to boil preſently; all metals are melted; brick, pumice-ſtone, delft-wares, and the aſbeſtos ſtone, are turned into glaſs; ſulphur, pitch, &c. melted under water: the aſhes of vegetables, woods, and other matters, tranſmuted into glaſs; in a word, every thing applied to its focus, is either melted, turned into calx, or into ſmoke; and the colours of jewels, and all other bodies, metals alone excepted, are changed by it. He obſerves, that it ſucceeds beſt, when the matter applied is laid on a hard charcoal well burnt.

Though the force of the ſolar rays be here found ſo ſtupendous, yet the rays of the full moon, collected by the ſame burning glaſs, do not exhibit the leaſt increaſe of heat.

Wolfius tells us, that an artiſt of Dreſden made burning mirrors of wood, bigger than thoſe of M. Tſchirnhauſen or Villette, which had effects at leaſt equal to any of them.—Traberus teaches how to make burning mirrors of leaf gold, viz. by turning a concave, laying its inſide equally with pitch, and covering that with ſquare pieces of the gold, two or three fingers broad, faſtening them on, if need be, by fire. He adds, that very large mirrors may be made, of thirty, forty, or more concave pieces, artfully joined in a turned wooden diſh or ſcuttle; the effects of which will not be much leſs than if the ſurface was continuous.—Zahnius adds farther, that Newman, an engineer at Vienna, in 1699, made a mirror of paſte-board, covered withinſide with ſtraw glued to it; by which all kinds of metals, &c. were readily melted.

Sir Iſaac Newton's burning mirror conſiſted of ſeven concave glaſſes, each of which was eleven inches and a half in diameter, and ſo diſpoſed as to have one common focus: ſix of them were placed round the ſeventh and contiguous to it, in ſuch a manner as to form the ſegment of a ſphere, whoſe ſubtenſe is about thirty-four inches and a half; the focus is about twenty-two inches and a half diſtant, and about an inch in diameter. This ſpeculum vitrified brick or tile in one ſecond, and in about half a minute melted gold. M. Zeiher, not long ſince, made ſome improvement of this inſtrument; and formed panes of plain glaſs into the neceſſary degree of curvature, by heating them ſo hot on a diſh made of metal, that they could all aſſume the ſame form. M. Buffon has conſtructed furnaces for converting plain into concave mirrors; the mirrors are expoſed to a degree of heat ſufficient to ſoften the glaſs, in conſequence of which it conforms itſelf to the ſpherical figure of the mould on which it is placed. This method is ſubject to many difficulties and accidents; however, out of twenty-four mirrors treated thus, M. Buffon preſerved three; two of which are thirty-ſeven inches in diameter, and the other forty-ſix inches. The laſt was tin-foiled, and preſented to the French king; and is repreſented by the maker, as the moſt powerful burning mirror in Europe, and yet the moon's light reflected from this concave ſpeculum, on a thermometer placed in the focus, produced no ſenſible dilatation of the included fluid. M. Buffon has alſo made attempts for conſtructing convex lenſes of great power, by fixing two of the above mentioned concave glaſſes together, and filling the cavity between them with water: one of the glaſſes broke in the trial; but others have ſince undertaken to conſtruct theſe water lenſes. He has likewiſe ſuggeſted another improvement in the conſtruction of burning-glaſſes, conſiſting in a contrivance for diminiſhing the thickneſs of the middle or central part of the lens from three inches to one inch; whereby he propoſes to prevent the diminution of light occaſioned by its paſſing through the middle part of a lens of large diameter, and ſhort focus, which muſt be proportionably thick in that part. This new kind of lens is compoſed of three parts ground to the ſame radius, or of two circular zones, or bands, ſurrounding a central or middle part. He computes that the heat in the focus of a lens of this kind, three feet in diameter, will be about four times greater than that produced by any burning glaſs yet known.

But the moſt conſiderable improvement which M. Buffon has introduced into the optical apparatus is his machine, conſiſting of a number of mirrors; whereby he ſeems to have revived the ſecret of Archimedes, and to have vindicated the credit of hiſtory in this point. In the year 1747 he conſtructed a machine, with a hundred and forty plane mirrors each about four inches long, and three broad; theſe are fixed at about a quarter of an inch diſtance from each other, upon a large wooden frame of about ſix feet ſquare. Each of them has three moveable ſcrews, which are ſo contrived, that the mirror can be inclined to any angle, and in any direction that meets the ſun; and by this means, the ſolar image of each mirror is made to coincide with all the reſt. The experiment was firſt tried with twenty-four mirrors, which readily ſet on fire a combuſtible matter, prepared of pitch and tow, and laid on a deal board, at the diſtance of ſixty-ſix French feet.

He then farther purſued the attempt, and put together a kind of polyhedron, conſiſting of 168 pieces of plane looking glaſs, each being ſix inches ſquare; and by means of this ſome boards of beech-wood were ſet on fire, at the diſtance of a hundred and fifty feet, in the month of March, and a ſilver plate was melted at the diſtance of ſixty feet. This machine, beſide other advantages, may be eaſily moved, ſo as to burn downwards or horizontally; and it burns either in its diſtant focus, or in any nearer interval, which our common burning-glaſſes cannot do, becauſe their focus is wholly fixed and determined. This machine, in the next ſtage of its improvement, contained three hundred and ſixty plane mirrors, each eight inches long, and ſix broad, mounted on a frame eight feet high, and ſeven feet broad. With twelve of theſe mirrors, light combuſtible matters were kindled at the diſtance of twenty feet; at the ſame diſtance, a large tin veſſel was melted with forty-five of them, and a thin piece of ſilver with a hundred and ſeventeen. When the whole machine was employed, all the metals and metallic minerals were melted at the diſtance of twenty-five, and even of forty feet. Woodwas kindled in a clear ſky, at the diſtance of two hundred and ten feet. The focus, at the diſtance of fifty feet, is about ſeven inches broad; and at the diſtance of two hundred and forty feet, it becomes two feet in diameter. Mr. Buffon afterwards conſtructed a machine, which contained four hundred mirrors, each half a foot ſquare, with which he could melt lead and tin at the diſtance of a hundred and forty feet. Phil. Tranſ. abr. vol. x. p. 194. &c. M. de Buffon Hiſtoire Naturelle, &c. Supplem. vol. i. Montucla, Hiſtoire des Mathematiques, vol. i. p. 232.

There is no ſolid ſubſtance that reſiſts the efficacy of modern burning-glaſſes. Meſſrs. Macquer and Baumé have ſucceded in melting ſmall portions of PLATINA, by means of a concave glaſs, twenty-two inches in diameter, and of twenty-eight inches focus; though this metal is not fuſible by the ſtrongeſt fires that can be excited in furnaces, or ſuſtained by any chemical apparatus. Yet it was long ago obſerved by the Academicians del Cimento, that ſpirit of wine could not be fired by any burning glaſs which they uſed; and notwithſtanding the great improvement which theſe optical inſtruments have ſince received, M. Nollet has not been able, by the moſt powerful burning mirrors, to ſet fire to any inflammable liquors whatever.

The principle upon which M. Trudaine conſtructed his burning lens was that of combining two circular ſegments of glaſs ſpheres, and applying them with their concave ſides towards each other, ſo as to form a lenticular cavity of four feet in diameter. The cavity was filled with ſpirits of wine; of which it contained 140 French pints. The focus of parallel rays in this inſtrument was 10 feet 10 inches and one line diſtant from the centre of the glaſs; and originally contracted to a circle of about eight lines in diameter, by the interpoſition of a ſecond and ſmaller lens of ſolid glaſs. The maker preſented it to the Royal Academy of Sciences, but it was ſoon afterwards accidentally broken. The expence of its conſtruction is ſaid to have amounted to 1000l. ſterling; and yet its powers were not very great; for, according to Mr. Magellan, it required 20 minutes for coagulating the particles of platina, which Mr. Parker's lens could do in leſs than a tenth part of the time. This ſeems indeed to be the moſt powerful burning lens that has yet been conſtructed. Mr. Parker, of Fleet-ſtreet, London, was induced, at an expence of upwards of 700l., to contrive and at length to complete a large tranſparent lens, that would ſerve the purpoſe of fuſing and vitrifying ſuch ſubſtances as reſiſt the fires of ordinary furnaces, and more eſpecially of applying heat in vacuo, and in other circumſtances in which it cannot be applied by any other means. After directing his attention for ſeveral years to this object, and performing a great variety of experiments in the proſecution of it, he at laſt ſucceeded in the conſtruction of a lens, of flint glaſs, three feet in diameter, which, when fixed in its frame, expoſes a ſurface two feet 8½ inches in the clear; without any other material imperfection beſides a diſfigurement of one of the edges by a piece of the ſcoria of the mould, which unfortunately found its way into its ſubſtance. This lens was double convex, both ſides of which were a portion of a ſphere of 18 feet radius. From the papers and drawings, with which the ingenious inventor has obligingly furniſhed us, we are able to give the following accurate account of this lens, illuſtrated by appropriate engravings. The elevation of this lens is exhibited in *Plate* II. *Optics, fig.* 1. The large lens is A, whoſe diameter in the frame is 3 feet, and in the clear 2 feet 8½ inches; its thickneſs at the centre is 3¼ inches; its focal diſtance 6 feet 8 inches; and the diameter of the burning focus 1 inch; its weight was 212 pounds. B is a ſecond lens, whoſe diameter in the frame is 16 inches, and which ſhews in the clear 13 inches; the thickneſs in the centre is 1⅝ inch; length of the focus 29 inches, and its diameter ⅜ of an inch;

its weight 21 pounds. When the two above lenſes are compounded together, the length of the focus is 5 feet 3 inches, and its diameter half an inch. C is a truncated cone, compoſed of 12 ribs of wood, at the larger end of which is fixed the great lens A, and at the ſmaller extremity the leſſer lens B; near the ſmaller end is alſo fixed a rack, D, paſſing through the pillar L, moveable by a pinion turning in the ſaid pillar, by means of the handle E, and thus giving a vertical motion to the machine. F is a bar of wood, fixed between the two lower ribs of the cone at G; having, within a chafed mortiſe in which it moves, an apparatus, H, with the iron plate, I, fixed to it; and as this part turns on a ſocket, K, a method is thus obtained of placing the matter under experiment ſo as that it may be acted upon by the focal rays in the moſt direct and powerful manner. L L is a ſtrong mahogany frame, moving on caſtors, M M, and immediately under the table, N, are three friction wheels, by which the machine moves horizontally. O is a ſtrong iron bow, in which the lens and the cone hang.

In *fig.* 2. a ſection of the large lens is ſeen: *a*, the large lens, marked A in the former figure; *b b* is the frame which contains the lens; *c* the ſmall lens, marked B in the preceding figure; *d d* is the frame which contains this lens; *e e* is the truncated cone, marked C in the other figure; *f* is the bar, on which the apparatus, marked F in the former figure, moves; *g* is the iron plate, denoted by I in the ſaid figure; *h* the cone of rays, formed by the refraction of the great lens *a*, and falling on the lens *c;* and *i* is the cone of rays formed by the refraction of the lens *c*. In *fig.* 3. *k* exhibits the front view of the great lens; *l* the frame containing the large lens; and *m* the ſtrong iron bow in which the lens hangs.

It is difficult to form an accurate eſtimate of the burning power of this lens; inaſmuch as it is next to impoſſible to diſcover what ſhould be deducted for the loſs of power, in conſequence of the impediments that the glaſs of which it was made muſt occaſion, as well as the four reflections (i. e. two reflections on the immerſion, and two more on the emerſion of the rays of heat), by way of diminution; but we will endeavour to appreciate it after making a full allowance for theſe deductions, which muſt neceſſarily reſult from every means of concentrating the ſolar rays, and which muſt be conſidered to be as the friction of an engine, of which nature they really partake.

The ſolar rays received on a circular ſurface of 2 feet 8½ inches, when concentrated within the diameter of one inch, will be 1056.25 times its intenſity, or this number of times greater than the heat of the ſun as felt on the ſurface of the earth. We will ſuppoſe that as the heat of the air, in ordinary ſummer weather, is 65°, and in ſultry weather is 75°, the average of which is 70°, and that we take this degree as the average effect, the accumulated power of the lens, on the ſuppoſition of an equal effect over the whole ſurface of the focus, will be equal to 73938°.

It muſt be recollected by thoſe who have had an opportunity of examining the effects of this lens, that the external part of the focal light was leſs intenſe than that part which was near the centre of it; or, rather, that the effect was very much accumulated in the centre: but as it is poſſible that the refraction of the light and of the caloric fluid may not take place in the ſame angles, we think it ſafeſt to conſider it as of an uniform effect, and after deducting one-fourth part thereof as a compenſation, there remains 55454°, as the expreſſion of its power.

As the application of the ſecond lens reduced the diameter of the focus to half an inch, the effect, without allowing for the reduction of its power, would be equal to 221816°, but deducting one-fourth for the ſecond tranſmiſſion, there remains 166362° as the expreſſion of its power.

Suppoſing that the rays of the ſun emanated from a point, the focus of the lens would alſo be a point; for the rays tranſmitted through one edge of the lens would meet thoſe tranſmitted through the other edge, ſo that the focus would be without parts, or a mathematical point; but as the ſun is known to meaſure 31′ 32″ during the apogee, and 32′ 38″ during the perigee, the focus muſt neceſſarily be 0.7105 parts of an inch diameter at Midſummer, and 0.7594 at Chriſtmas. The length of the luminous axis at Midſummer muſt, from the ſame cauſe, be 3.428 inches, and, at the oppoſite period, 3.557; becauſe the dimenſion of the focus is actually dependent on the apparent diameter of the ſun, the ſemi-diameter being to be added to increaſe the meaſure of the converging rays on each of the oppoſite ſides, the tangent of which is the ſemi-diameter of the focus: and by the ſame means the length of the axis is diſcovered, adding to and ſubtracting from the converging angle, by which means the points at which they meet on the axis are diſcovered. Theſe two points diſcloſe the commencement of the luminous appearance thereon.

The variation between the above calculated diameter of the focus and what it really was, points out the errors in the inſtrument, which muſt ariſe from one of two cauſes, or from both, viz. that the axis of the two ſides are not coincident, or that they are not oppoſite to each other; ſhould the difference have been occaſioned by either, the focus would have been elliptical; but as this was not aſcertained, it can only be ſaid that a very ſmall deviation in each would have occaſioned this enlargement of the focus; and poſſibly they might have acted in contrary ways, which would have made it nearly circular.

But as this lens was exported many years ago, we are not able to determine whether the focus ſtated to have been one inch diameter was aſcertained by its burning effect, or by the diameter of the focal rays: if by the diameter of the rays, the enlargement thereof muſt have reſulted from the above cauſes; but if from its burning power, it tends rather to eſtabliſh the theory of Dr. Herſchell, that the rays of caloric are leſs refrangible than thoſe of light, and that the true burning focus lies rather beyond the apparent focus.

We are far from thinking the above ſtatement an extravagant ſuppoſition, when it is recollected, that all the experiments on which we ground our opinion were made with a total expoſure of the ſubſtances to the action of the circumambient air; and had the property of this fluid, as to its conducting power of heat, been then well underſtood, ſo as to have prevented the diminution of the effect, we are well ſatisfied the reſult would have juſtified our concluſion.

The ingenious experiments of Mr. Wedgwood, and the extenſive uſe of his pyrometer, for the admeaſurement of heat required to melt metals, are now too well underſtood to require any eulogium in this place; it is ſufficient to ſtate that he eſtimates the heat required to melt the following ſubſtances to be as follows:

	Fahr.	or by Wedg.
Red heat viſible in day light -	1077°	0
Fine gold - - -	5237	32
Welding heat of iron greateſt	13427	95
Caſt iron melts - -	17977	130
Greateſt heat of his ſmall furnace	21877	160
Extremity of the ſcale of his pyrometer	32277	240

The power of the lens eſtimated by this pyrometer will be found to be 1096°, and ſuppoſing the hotteſt furnace to be 240°, the focal heat thereof is 5.2975 times greater.

In juſtification of the opinion we have given, we now proceed to ſubmit a ſelected enumeration of the experiments which were made with this juſtly celebrated inſtrument, under the inſpection of major Gardner, brother to the admiral lord Gardner, together with ſome gentlemen of the Royal Society.

Subſtances fuſed, with their Weight and Time of Fuſion.	Weight in Grains.	Time in Seconds.
Gold, pure,	20	4
Silver, do.	20	3
Copper, do.	33	20
Platina, do.	10	3
Nickell,	16	3
Bar Iron, a Cube,	10	12
Caſt Iron, a Cube,	10	3
Steel, a Cube,	10	12
Scoria of Wrought Iron,	12	2
Kearſh,	10	3
Cauk, or Terra Ponderoſa,	10	7
A Topaz, or Chryſolite,	3	45
An Oriental Emerald,	2	25
Cryſtal Pebble,	7	6
Topaz,	10	30
Flint Oriental,	10	30
Rough Cornelian,	10	75
Jaſper,	10	25
Onyx,	10	20
Garnet,	10	17
White Rhomboidal Spar,	10	60
Zeolites,	10	23
Rotten Stone,	10	80
Common Slate,	10	2
Aſbeſtos,	10	10
Common Lime Stone,	10	55
Pumice Stone,	10	24
Lava,	10	7
Volcanic Clay,	10	60
Corniſh Moor Stone,	10	60

Mr. Parker farther informs us, that a diamond, weighing 10 grains, expoſed to this lens for 30 minutes, was reduced to 6 grains; during which operation it opened, and foliated like the leaves of a flower, and emitted whitiſh fumes, and when cloſed again it bore a poliſh, and retained its form. The editor has been favoured by Mr. Parker, jun. with the following additional obſervations on the powers of this lens.

Gold remained in its metallic ſtate, without apparent diminution, notwithſtanding an expoſure at intervals of many hours: but what is remarkable, the reſt, or cupel, which was compoſed of bone aſh, was tinctured with a beautiful pink colour.

Platina. The experiments evince that the ſpecimens were in different ſtates of approach to a complete metallic form: ſeveral of them threw off their parts in ſparks, which in moſt inſtances were metallic.

Copper, after three minutes expoſure, was not found to have loſt in weight.

Iron, ſteel-ſhear. What is remarkable in this experiment is, that the lower part, i. e. that part in contact with the charcoal, was firſt melted, when that part which was expoſed to the focus remained unfuſed: an evidence of the effect of flux on this metal.

Iron ſcoria, and the turnings of iron. The ſcoria appears to have been melted in much leſs time than the turnings, a reſult that might have been expected to have been directly the reverſe; but ſome allowance muſt be made for the probable difference in the effects or intenſities of the ſolar rays at the periods at which the experiments were made.

Calx of iron from vitriolic acid, precipitated by mild fixed alkali, weighing 5 grains before expoſure, weighed afterwards $5\frac{1}{4}$ grains; which indicates an increaſe of weight by an abſorption of phlogiſton.

Regulus of zinc began almoſt inſtantly to flow, and was nearly evaporated; the remains were magnetic.

Regulus of cobalt was completely evaporated in 57″.

Regulus of biſmuth was nearly evaporated when expoſed on a charcoal reſt; but on black lead it began to fuſe in 2″, and very ſoon after paſſed into a ſtate of complete fuſion; it loſt only half a grain in weight from an expoſure of 180″; on a bone-aſh reſt it fuſed in 3″, and in 180″ it was reduced to $7\frac{1}{2}$ grains.

Regulus of antimony: 33 grains were fuſed in 3″ on charcoal, and after 195″ there remained only 11 grains; but when expoſed on a charcoal reſt for the ſame time, there remained afterwards 28 grains, which ſhewed a magnetic affection.

Fine kearſh from the cannon foundery evaporated very faſt during 120″, and in 30″ more the remainder began to flow into globules, which, on being cold, were attracted by the magnet. This experiment of itſelf ſupports the claim of this inſtrument to a vaſt ſuperiority over the heat of any furnace hitherto known.

Cryſtal pebble of North America: 5 grains expoſed contracted in 15″, perfectly glazed in 135″, ebulleſced in 150″, and when taken out appeared ſemi-diaphanous, of a ſlate colour.

Several of the ſemi-cryſtalline ſubſtances, expoſed to the focal heat, exhibited ſymptoms of fuſion: ſuch as the agate, oriental flint, cornelian, and jaſper; but as the probability is that theſe ſubſtances were not capable of complete vitrification, it is enough that they were rendered externally of a glaſſy form.

Garnet completely fuſed on black lead in 120″, loſt $\frac{1}{4}$ of a grain, became darker in colour, and was attracted by the magnet.

Ten cut garnets taken from a bracelet, began to run the one into the other, in a few ſeconds, and at laſt formed into one globular garnet.

The clay uſed by Mr. Wedgwood to make his pyrometric teſt, run in a few ſeconds into a white enamel. Seven other kinds of clay ſent by Mr. Wedgwood were all vitrified.

Several experiments were made on limeſtone, ſome of which were vitrified, but all of which were agglutinated; it is, however, ſuſpected that ſome extraneous ſubſtance muſt have been intermixed. A globule produced from one of the ſpecimens, on being put into the mouth, flew into a thouſand pieces, occaſioned, it is preſumed, by the moiſture.

Stalactites Zeolithus ſpatoſus: 9 grains took a globular form in 60″; in 148″ the globule began to get clear; in 155″ was perfectly tranſparent, and as it grew cold diminiſhed in tranſparency, and at laſt reſolved itſelf into a beautiful red; on being cut by a lapidary, it was found to be ſo hard as to ſerve as a diamond to write on glaſs.

Several ſpecimens of lavas, and other volcanic productions, were expoſed to the focus of the lens, all of which yielded to its power. This furnace of nature, the volcano, is ſuppoſed to be hotter than any furnace conſtructed by the art

art of man, and as none of theſe ſubſtances have been found perfectly vitrified, the concluſion is, that the volcano muſt exceed them in its power.

The following obſervation made by major Gardner, he applies to all the experiments made by him during a period of many months; we will uſe his own words:

"That no ſubſtance can remain any length of time in its focus unfuſed or unvitrified, unleſs it be externally white or diaphanous; but in a number of inſtances even theſe properties do not prevent their being fuſed or vitrified: when they do it appears, in the firſt caſe, that the rays were in part reflected (perhaps before they came in contact with the intenſely white ſubſtance); and from this circumſtance the ſun's rays are prevented from exerting their full power upon them."

Some experiments were made in the year 1802, with Mr. Parker's lens, with the view of aſcertaining whether the moon communicated any heat to the earth, in common with the reflected light from which we derive ſo much advantage.

This experiment was attended by ſir Joſeph Banks, with ſeveral members of the Royal Society, together with Dr. Crawford, who provided the moſt ſenſible thermometers; but after applying them to the luminous focus, ſo far from a perceptible increaſe of heat, it was thought there was perceived rather a diminution thereof; but this ſuſpicion did not lead them to a fair inveſtigation of the fact.

Since this period ſome experiments have been made that evince the power of communicating cold by reflection; but as this fact has not yet been explained conſiſtently with the preſent received theory, we ſhall content ourſelves with taking notice of the experiment made by M. Pictet. Two concave mirrors being placed at the diſtance of 10½ feet from each other, a very delicate air thermometer was put into one of the foci, and a glaſs matraſs full of ſnow in the other. The thermometer ſunk ſeveral degrees, and roſe again when the matraſs was removed. When nitric acid was poured upon the ſnow (which increaſed the cold) the thermometer ſunk 5° or 6° lower. Here *cold* ſeems to have been emitted by the ſnow, and reflected by the mirrors to the thermometer, which it is thought could not happen unleſs cold were a ſubſtance.

It has been found that upon an admixture of equal quantities of ſnow, which is always at 32°, and of water heated to 172°, the reſult is that the compound only retains the loweſt heat of 32°, ſo that 140° of heat or caloric diſappears.

Much has been ſaid reſpecting the point or degree at which the thermometer ſhould indicate the preſence of heat. The experiments of Dr. Crawford ſeem to place it at 1268° below the preſent 0. Mr. Kirwan places it at 1048°. Meſſrs. Lavoiſier and La Place at 2736°; and by a mixture of four parts of ſulphuric acid with three pints of water, it ſeems that it ſhould be placed at 5803° below 0.

Experiments of this kind may be made *ad infinitum,* and in time it may poſſibly be aſcertained that cold is a real ſubſtance; but for the purpoſe of getting an anſwer to the preſent queſtion, we will accommodate the ſcale of Fahrenheit, by adding 108° thereto, ſo as to make the 0 correſpond with the caloric imbibed by ſnow or ice before it can melt. The average temperature of the air, mentioned under the article BURNING *Glaſs,* of 70° will be now conſidered as 178 of the new ſcale.

The ſuperficies of ſpherical bodies are to each other as the ſquares of their reſpective diameters. The diameter of the moon is conſidered to be 2180 miles, and its mean diſtance from the earth 240,000; from which it follows, on the ſuppoſition that all the ſolar rays received by the moon were reflected back, and that the earth was abſolutely without heat, that the effect of this reflection would be found to be .00367 of a degree (for $\overline{240.000 \times 2^2} : 178^\circ :: 2180^2 : .00367$); which multiplied into 1056.25, and this ſum increaſed four times for the increaſed power of the ſecond lens, would give 15.51234° as the heat of the focus; 92.28766° below the preſent 0, or 124.28766° below the freezing point.

This diſſertation is intereſting in another point of view, for this calculation aſcertains that the light afforded by the moon, when compared with that by the ſun, abſtracting all impediments in both caſes, is only as 1 to 48480.

A ſubſcription was propoſed for raiſing the ſum of 700 guineas, towards indemnifying the charges of the inventor, and retaining the very curious and uſeful machine above deſcribed in our own country; but from the failure of the ſubſcription, and ſome other concurring circumſtances, Mr. Parker was induced to diſpoſe of it to capt. Mackintoſh, who accompanied lord Macartney in the embaſſy to that country; and it was left, much to the regret of philoſophers in Europe, at Pekin; where it remains in the hands of perſons who, moſt probably, know neither its value nor uſe.

BURNING *of Heath,* in *Agriculture,* a practice employed in ſome diſtricts for clearing ground covered with this ſubſtance, in order to procure graſs and herbage for cattle. The moſt proper time for this buſineſs is towards the latter end of the ſummer, when the plants are withered: care ſhould be taken that the fire extends no farther than is intended, by clearing away all the graſs, and other dry vegetable matters, on the ſide which is to be preſerved from the flames, to a diſtance ſufficient to prevent all communication; the graſs and other ſubſtances which are cut down, being ſpread upon the part intended to be burnt, may ſerve for kindling the fire after they are become dry, and in a ſtate fit for combuſtion.

For this operation a fair calm day ſhould likewiſe be choſen; when, by kindling the fire on the ſide the wind blows from, the danger of its ſpreading too extenſively is more fully guarded againſt. If, however, notwithſtanding theſe precautions, it ſhould ſpread to places intended to be preſerved, and where there is no water, the moſt effectual way of ſtopping the progreſs of it is to dig a trench; as, by throwing up the earth on the ſide where the fire is, the graſs is covered and the flames thereby hindered from extending farther.

BURNING *of Lime,* the proceſs of converting hard or ſtrong calcareous ſubſtances into lime by means of fire. See LIME *burning.*

BURNING *of Straw,* a waſteful diſſipating practice employed in ſome diſtricts for the purpoſe of converting it into aſhes for manuring land. It is obſerved by Mr. Young, in the Report of Lincolnſhire, that "the moſt ſingular practice he ever met with in manuring ſubſiſts on the Wolds; it is that of ſpreading dry ſtraw on the land and burning it. At lord Yarborough's, he ſays, he firſt heard of this cuſtom. His lordſhip's tenant, Mr. Richardſon, a very good and intelligent farmer, gave him the account, having long practiſed it with ſucceſs. The quantity is about five tons an acre. At Great Lumber he *ſtraw-burnt* a piece in the middle of a field preparing for turnips, and on each ſide of it manured with ten loads an acre of yard-dung, and the burned part was viſibly ſuperior in the crop. In another piece the ſame comparative trial was made, in 1796, for turnips: and now, in 1797, the barley is equally ſuperior. On another farm he had at Wold-Newton he did it for turnips, then barley, and laid with ſainfoin; and the burnt ſtraw was better in all thoſe crops than yard dung. Burning gorſe in this manner returns great crops; but the expence is too high. He is clearly of opinion, that it is the warmth from the fire that has the effect, and not the aſhes; for the quantity is nothing, and would blow away at one blaſt. It is proper to obſerve, ſays he, that they do not value ſtraw uſed in feeding cattle at more than 4s. or 5s. a ton. Mr. Mallis of Lumber is of the ſame opinion, and thinks four tons are enough; and never knew that fail for turnips. This ſtraw burning huſbandry the reporter found again at Beleſlay. Mr. Lloyd, who, he ſhould obſerve, is an excellent farmer, thinks that it takes ſix tons per acre, which will laſt longer in its effect, and beat the dung which that ſtraw would make, and in general laſt longer than common dunging. Keeping much cattle, he cannot practiſe it, but highly approves it. In diſcourſe at Horn-caſtle ordinary on burning ſtraw, the practice, he ſays, was much reprobated; yet an inſtance was produced that ſeemed to make in favour of it. Mr. Elmhurſt, of Hazlethorp, burnt twelve acres of cole ſeed ſtraw on eight acres of the twelve, and the effect was very great, and ſeen even for twenty years. He ſowed wheat on it, four buſhels an acre, and had five quarters: the four acres upon which nothing was burnt, much the better land, yet the crops on the burnt part were by that mode equal to the reſt. But in another ſimilar experiment for turnips, Mr. Rancliff obſerved, the reſult and the effect laſted only for one crop. Mr. Kirkham, who was in company, gave it as his opinion, that, as cattle would not eat ſtubble, it might be beneficial to collect and ſtack that, and, before turnip ſowing, burn it. The reverend Mr. Allington of Swinap has burnt on the land for turnips, the long-ſtraw dung from the ſurface of the farm yard, and has had better turnips there than where the dung was laid. This has been the caſe in two experiments he has made." On ſtiff adheſive ſoils it is probable ſome advantage may be produced by the action of the fire in this mode, but in other caſes it muſt be a waſteful practice. The nature of the land on which theſe trials were made is not, however, mentioned.

"About Tathwell," the reporter adds, "there is no burning ſtraw upon land; Mr. Clough, Mr. Hyde, and Mr. Pearſon, ſcouted the idea of ſuch a thing being common. It has, however, been tried there, for Mr. Oldham of Elkington did it, after ploughing for turnips, with long ſtraw from the yard, and he ſucceeded well for the moſt part."

Burning *of Land.* See Paring and Burning.

Burning *of metals, uſtio metallorum,* is either performed by fire, or by corroſive ſalts; which latter is alſo denominated cæmentation.

The firſt preparation of moſt ores is by uſtion, or burning, whereby to diſpoſe them for fuſion. This is uſually performed by expoſing them, without addition, to a naked fire; ſometimes fixed alkalies and abſorbents are added, to hinder the avolation of the metalline particles. Some hold burning in the ſtone or glebe moſt advantageous; others burning in the meal. Phil. Tranſ. N° 109. The baſer metals, tin and lead, may be burnt like plants to aſhes. For gold and ſilver, the caſe is otherwiſe.

Burning *mountains.* See Volcano, Earthquake, Mountain, &c. See alſo Ætna, Hecla, Vesuvius, &c.

The ancients deſcribe a meteor under the denomination of *burning buckler, clypeus ardens.* Plin. Hiſt. Nat. lib. ii. cap. 34. Mem. Acad. Inſcr. tom. vi. p. 95.

Travellers into Italy deſcribe a burning ſpot of ground at Firenzuola, in the Apennines, out of which a crackling flame continually ariſes, yet without any cleft for it to iſſue out at. Maffei ſuppoſes the ſteams which the place yields, to be a kind of native *phoſphorus ardens,* which take fire on their coming in contact with the air.

Burning, among *Painters.*—Several of the painters' colours require burning, to fit them for uſe, as lamp-black, umber, ivory, &c.

The burning, or rather drying, of lamp-black, is performed by ſetting it over the fire in an iron ladle, or crucible, till no ſmoke ariſes from it. To burn umber, they put it in large lumps into a naked fire, where it is left till thoroughly red-hot. Ivory muſt be burnt, to make a black, in two crucibles, luted, covered with coals.

Burning, in *Enamel Painting.* See Enamelling.

Burning is alſo an operation in *Pharmacy.* Simples are frequently burnt in earthen-veſſels, either to reduce them to aſhes, as in the preparation of vegetable ſalts, or in order to dry them, that they may be more commodiouſly pulverized, as is practiſed in regard of hartſhorn, &c.

Burning *phoſphorus.* See Phosphorus.

Burning *plant.* See Euphorbia.

Burning *ſpring,* in *Natural Hiſtory.* See Spring.

Burning *zone,* in *Geography.* See Torrid *zone.*

BURNISHED *gold* or *ſilver,* denotes thoſe metals laid on any work or leaves, and afterwards paſſed over with a burniſher to heighten their luſture.

BURNISHER. See Burnishing.

BURNISHING, the operation of giving an uniform and brilliant ſurface to a variety of ſubſtances by friction, with a poliſhed hard inſtrument uſually called a burniſher.

The modes of politure in uſe among artiſans may, perhaps, be all reduced to four:—the aſperities of a rough ſurface may be removed by cutting off the protuberances, as in *planing*; by abrading them, as in *filing* and *poliſhing*; by obtunding them with the hammer, as in *planiſhing*; and by accompliſhing the ſame purpoſe in the manner now under our conſideration.

It will be readily perceived, that the two latter operations can only be performed on ſuch ſubſtances as poſſeſs a certain degree of malleability or ductility; thoſe which are brittle, as glaſs or hardened ſteel, will neceſſarily be incapable of being burniſhed.

To ſpeak of all the deſcriptions of artiſans who uſe this proceſs would be to enumerate almoſt the whole of thoſe who work on metals. The inſtruments with which it is performed are alſo as various as the ſurfaces to be ſubjected to their action: we ſhall therefore only ſpeak of ſuch as are uſed for plane ſurfaces. The burniſher in this caſe is generally a piece of very hard ſteel three or four inches long, and about one eighth of an inch thick, with a ſomewhat convex edge, not much unlike that of the ſteel which is commonly uſed for ſtriking fire, all the angles of it being ſmoothly rounded off, ſo that the longitudinal ſection of the part to be applied to the ſubject is a ſemi-ellipſe of great eccentricity, the edge of which is nearly ſemi-cylindrical. It is applied in different ways according to the nature and extent of its uſe in the workſhop. The manufacturers of ornaments for ſtoves, who uſe a great number of burniſhed plates of ſoft ſteel, frequently inſert it into the lower extremity of a wooden pole, which is ſuſpended over the work-bench, from one end of a ſtrong wooden ſpring fixed horizontally in a frame attached to the ceiling, and preſſing downwards; ſo that the workman has only to paſs it backwards and forwards horizontally at right angles to its own plane, over the ſurface of the plate, its preſſure being produced, or, at leaſt, aſſiſted by the action of the ſpring. Some workers in metal apply the burniſher by attaching it to the underſide of a lever, which has a handle at one end, and is hooked at the other into a fixed ſtaple; others fix it obliquely into one end of a ſtaff, the other end of which is curved like a ſcythe, and paſſes over the right ſhoulder of the workman, who is by this means enabled to exert a conſiderable degree of preſſure; and others again merely inſert it into a handle, or a ſhort bar with a handle at each end, and apply it in the ſame manner as a common raſp or file, or in ſome inſtances as if ſhading with a black lead-pencil. In whichever of theſe modes the burniſher is applied, the direction of its motion ſhould be always rectilinear, parallel to itſelf, and at right angles with the edge of the inſtrument.

There is alſo another method of applying the burniſher, which is by keeping the inſtrument itſelf at reſt, whilſt the ſurface, ſubjected to its action, is turned in a lathe. The proceſs is thus conducted by the brazier, ironmonger's founder, pewterer, and indeed all the artiſans who employ that engine.

There are two precautions neceſſary to be obſerved in this operation: the one is to keep the ſemi-cylindrical edge of the inſtrument as highly poliſhed as poſſible by frequently touching it on a piece of buff leather, rubbed with finely prepared *crocus martis*, and the other to keep the ſurface to be burniſhed conſtantly lubricated during the friction, with ſome liquid of a ſmooth conſiſtence, ſuch as milk, oil, or a ſolution of ſoap, the latter of which ſeems to be the fitteſt, and moſt generally approved of for this purpoſe. If this be neglected the ſurface is apt to ripple up before the inſtrument, and the ridges thus produced being laminated, by the continuance of the friction, into very thin flakes or ſcales, the work becomes defaced by dark coloured ſpots and ſtreaks, which are frequently irideſcent like thoſe on the wings of a butterfly, and the proceſs conſequently fails.

Bookbinders burniſh the edges of their books by rubbing them with a dog's tooth. Gold and ſilver are burniſhed with a wolf's tooth, a dog's tooth, or the blood ſtone, or by *tripoli*, a piece of white wood, emery, and the like.

Deer are ſaid to *burniſh their heads*, when rubbing off a white downy ſkin from their horns againſt a tree, they thruſt them, as it is ſaid, into a reddiſh earth, to give them a new colour and luſtre.

BURNLEY, in *Geography*, a market town of Lancaſhire, in England, is ſeated on a peninſula of land between the rivers Calder and Brown, which unite their ſtreams a little north of the town. Its advantageous ſituation on theſe ſtreams has occaſioned ſeveral manufactories to be eſtabliſhed here. Amongſt theſe are ſome cotton machines, fulling mills, corn mills, and a mill for grinding dyers' wood. The church of this place, a large handſome ſtructure, is under Whalley, and though only a curacy, is conſidered a very valuable living. Some lead mines have been diſcovered in the vicinity of the town, and various Roman coins have been found. Burnley is a great thoroughfare. The country around it abounds with pit-coal, and great quantities of free-ſtone, flag-ſtone and ſlate, are obtained from quarries in this neighbourhood. Here are a grammar ſchool, and two diſſenting meeting houſes; a market on Mondays, and five annual fairs. In the vicinity of the town is a very fine ſeat, lately belonging to Charles Townley, eſq. who had amaſſed the fineſt and moſt valuable collection of ancient ſculpture in this country. Burnley is 211 miles N. of London; and it contains 687 houſes, and 3305 inhabitants. Whitaker's Hiſtory of Whalley, &c. 4to.

BURNOOSE, an article of dreſs among the Arab Bedoweens and Kabyles, in Barbary; correſponding to our cloak, and worn by them over their *hykes*. This forms a conſiderable branch of their woollen manufactory. It is wove in one piece, and reſembles in its ſhape the garment of the little god Teleſphorus, being ſtraight about the neck, with a crape, or Hippocrates' ſleeve (for a cover to the head,) and wide below like a cloak. Some of them are likewiſe fringed round the bottom, like Parthenaſpa's and Trajan's garment upon the baſſo relievos of Conſtantine's arch. The burnooſe, without the cape, ſeems to anſwer to the Roman *pallium*; and with it to the *bardocucullus*, referred to to by Martial, l. xiv. 178.

"Gallia Santonico veſtit te *bardocucullo*."

BURNS, Robert, in *Biography*, was the ſon of a farmer near the town of Ayr, the capital of Ayrſhire, in Scotland, where he was born on the 29th of January, 1759. The family had all of them been farmers in the north of Scotland, but the misfortunes of the poet's father, had occaſioned him to accept the ſituation of gardener to a gentleman of ſmall fortune in the neighbourhood of Ayr, in which employment he continued for the firſt ſix or ſeven years of the poet's life. The father was a man of obſervation and experience, as well as of ſtrict integrity, and wiſhed to keep his children more under his own eye, than was conſiſtent with the ſervice in which he was engaged. For this purpoſe, he ventured on a ſmall farm on his maſter's eſtate, and joined with ſome others of his neighbours to provide a ſchoolmaſter for their children. Robert Burns was principally diſtinguiſhed at theſe early years, by a retentive memory, a ſtubbornneſs of diſpoſition, frequently attendant on genius, and an enthuſiaſtic piety. At the age of ten or eleven, he was not only well grounded in Engliſh grammar, but ſomewhat more than uſual of a critical ſcholar. He was principally indebted to a credulous and ignorant old woman in the family, for furniſhing him with thoſe legendary and ſupernatural tales, which feed a poetical imagination with its richeſt repaſt. The firſt regular compoſitions in which he took pleaſure were, The Viſion of Mirza, and a hymn of Addiſon, which came within the compaſs of his ſchool ſtudies. The Life of Hannibal, and the Hiſtory of Sir William Wallace were the firſt books he read as a volunteer, and they gave him more pleaſure than any he read afterwards. Nor was polemical divinity without its attractions, but he ſoon raiſed the cry of hereſy againſt himſelf, and it purſued him through life. He gained at this time a ſlight knowledge of French, and received afterwards ſome leſſons in practical mathematics; but his ſtudies were rendered irregular by the neceſſity of hard labour owing to the advanced age of his father, and the ill ſucceſs of his farm. Robert was the eldeſt of ſeven children, and a very dexterous ploughman. But his father's maſter died, and they fell into the hands of a factor, againſt whoſe inſolence and rapacity they had to contend, till the ſixteenth year of the poet, who now began firſt to exerciſe his functions as ſuch, in conſequence of his firſt amorous attachment to his *harveſt partner* of fourteen. Soon afterwards his father removed to a larger farm, on which the family ſubſiſted comfortably for four years; when they became embarraſſed by litigation with their landlord, and William Burns was only ſaved from a priſon by the intervention of a mortal diſeaſe. During theſe four years, his reading was confined to Salmon's and Guthrie's Geographical Grammars, the Spectator, Pope's Works, ſome of Shakſpeare's Plays, Tull and Dickſon on Agriculture, the Pantheon, Locke's Eſſay on the Human Underſtanding, Stackhouſe's Hiſtory of the Bible, Juſtice's Britiſh Gardener's Directory, Boyle's Lectures, Allan Ramſay's Works, Taylor's Scripture Doctrine of Original Sin, A ſelect Collection of Engliſh Songs, which he carried with him when he drove his cart, and Hervey's Meditations. He was very awkward in his perſon and manner, a diſadvantage which he ſought to remedy by attending a country dancing-maſter, in oppoſition to his father's direct negative. This produced an unfortunate diſagreement between them, to which he attributed in a great meaſure the ſubſequent diſſipation of his habits.

Thus did his life paſs till his twenty-third year; bodily labour was his employment, and a ſucceſſion of love adventures his amuſement. The bias of his mind was ſtrengthened by the addition of Triſtram Shandy and The Man of Feeling to his library. He now engaged with a flax-dreſſer in a neighbouring town; but the ſhop took fire, while the partners were carouſing, and the poet was left without a ſixpence. After his father's death, he joined his ſecond brother in a farm, but without ſucceſs. During this period, he formed a connection with a young woman, the conſequence of which induced him to give her an acknowledgment of private marriage. Her parents, however, finding his ſituation ſo deſperate, prevailed with her to relinquiſh it. He was driven to the verge of ruin, and threatened with a gaol, when he engaged to go to Jamaica. But as his compoſitions had become popular in the neighbourhood, he reſolved to publiſh his poems before he quitted his native country. The firſt edition, in 1786, produced him nearly 20l. for the expences of his voyage; he had taken the laſt farewel of his friends, when a letter from Dr. Blacklock, adviſing a ſecond edition, carried him to Edinburgh, and opened at once new proſpects to his poetical ambition, and new temptations to thoſe ſenſual propenſities, which depraved his genius, and ſhed a pernicious influence over his future life.

His genius and talents introduced him into the circles both of rank and literature; and his powers of converſation are ſaid to have increaſed the applauſe beſtowed on his writings. Profeſſor Dugald Stewart obſerves, in a letter to Dr. Currie, "that all the faculties of his mind were equally vigorous; and his predilection for poetry was rather the reſult of his own enthuſiaſtic and impaſſioned temper, than of a genius excluſively adapted to that ſpecies of compoſition. From his converſation I ſhould have pronounced him fitted to excel in whatever walk of ambition he had choſen."

He had gained five hundred pounds by the ſale of his poems, with part of which he entered on the farm of Elliſland, on the banks of the river Nith, ſix miles above Dumfries, in the year 1788. He had previouſly been placed on the liſt of candidates for the office of exciſeman; and unfortunately for his health and morals, he afterwards obtained the appointment. Before he hired the farm, he had become the huſband of the young woman mentioned above, who had been turned out of doors by her father. He was now become a parent in his turn; in the ſucceſs of his undertaking the happineſs of his family was involved, and he determined, after pondering ſeriouſly on the paſt, to abandon the ſociety and diſſipation of which he had been enamoured. It is greatly to be regretted that he found it ſo much eaſier to form than to execute his project of reformation. At the end of the year 1791, he found it neceſſary to reſign his farm into his landlord's hands, and remove to a ſmall houſe at Dumfries. Here he was betrayed into an approbation of the French revolution, more ardent than was conſiſtent with the opinions of his ſuperiors. He was therefore ſubjected to the animadverſion of the board, but retained his ſituation by promiſing more guarded behaviour, on the intervention of a friend. "Among the inhabitants of Dumfries," ſays Dr. Currie, "there were never wanting perſons to ſhare his ſocial pleaſures; to lead or accompany him to the tavern; to partake in the wildeſt ſallies of his wit, to witneſs the ſtrength and degradation of his genius." Thus beſet where he was moſt vulnerable, it is a ſubject of greater ſorrow than ſurpriſe, than he ſhould have fallen into thoſe irregularities, which terminated his ſhort career in July 1796, in the thirty-eighth year of his age. Yet, lowered as was his character, and pernicious as were his habits to his corporeal frame, he retained his vigour of mind and imagination to the laſt, and never, in his greateſt diſtreſſes, loſt ſight of honour in his pecuniary tranſactions, or bartered his independence to ſupply his neceſſities.

With reſpect to his ſocial character, it is exactly fixed by the lively remark of a Scotch lady, that no man's converſation ever carried her ſo completely off her feet as that of Burns.

The character of his poetical compoſitions is ſtrongly marked with the impreſſion of his birth and ſtation. He took no pains either to elevate his imagery, or poliſh his dialect. He adopted the ſimplicity of nature for his guide, and refreſhed himſelf at the ſtream of native ſenſibility, in his weary pilgrimage through an obſcure and unhappy life. He is always intereſting, but never ſplendid. His ſcenery is drawn on the ſpot, and his characters and incidents bear the ſtamp of biographical and hiſtorical truth, rather than of poetical fiction. His humour is rich, his pathos is natural, and he ſometimes riſes to the ſublime: but his ſuperiority is moſt deciſively eſtabliſhed in the deſcriptive. His poetical character cannot be better concluded than in the words of Dr. Currie.

"To determine the comparative merit of Burns would be no eaſy taſk. Many perſons, afterwards diſtinguiſhed in literature, have been born in as humble a ſituation of life; but it would be difficult to find any other who, while earning his ſubſiſtence by daily labour, has written verſes which have attracted and retained univerſal attention, and which are likely to give the author a permanent and diſtinguiſhed place among the followers of the muſes. If he is deficient in grace, he is diſtinguiſhed for eaſe, as well as energy; and theſe are indications of the higher order of genius. The father of epic poetry exhibits one of his heroes as excelling in ſtrength, another in ſwiftneſs; to form his perfect warrior, theſe attributes are combined. Every ſpecies of intellectual ſuperiority admits perhaps of a ſimilar arrangement. One writer excels in force, another in eaſe; he is ſuperior to both, in whom both theſe qualities are united. The force of Burns lay in the powers of his underſtanding, and in the ſenſibility of his heart; and theſe will be found to infuſe the living principle into all the works of genius which ſeem deſtined to immortality. His ſenſibility had an uncommon range. He was alive to every ſpecies of emotion. He is one of the few poets that can be mentioned, who have at once excelled in humour, in tenderneſs, and in ſublimity; a praiſe unknown to the ancients, and which in modern times is only due to Arioſto, to Shakſpeare, and perhaps to Voltaire. To compare the writings of the Scottiſh peaſant with the works of theſe giants in literature, might appear preſumptuous; yet it may be aſſerted, that he has diſplayed the foot of Hercules. How near he might have approached them by proper culture, with lengthened years, and under happier auſpices, it is not for us to calculate. But while we run over the melancholy ſtory of his life, it is impoſſible not to heave a ſigh at the aſperity of his fortune; and as we ſurvey the records of his mind, it is eaſy to ſee, that out of ſuch materials have been reared the faireſt and moſt honourable monuments of genius."

In his correſpondence there are much good ſenſe, and an admirable turn of expreſſion. The late Dr. Robertſon thought Burns's proſe equal to his poetical compoſitions; and the public in general are nearly of the ſame opinion. His critical powers were more matured, and his taſte more correct than can at all be accounted for by his opportunities; and the circumſtance muſt be aſcribed to the happy temperament of a mind, which could by ſympathy aſſimilate itſelf to that ſtate of refinement and cultivation, uſually the reſult of ſcholaſtic inſtruction, or the elegant purſuits of polite life. On the whole, the character of Burns is equally intereſting, as a noble ſpecimen of untutored nature, forcing itſelf to a level with the higher and more favoured claſſes of its ſpecies; and inſtructive as a warning, that the advantages of the conflict, however ſucceſsful, are irretrievably loſt, unleſs diſcretion is called in to ſecure and perpetuate the trophies won by genius. Perſons of keen ſenſibility are expoſed to peculiar dangers; and poets are perhaps of all others the deſcription of men, who contribute moſt to the refined pleaſures of ſociety, and are leaſt ſucceſsful in appropriating to themſelves their own individual ſhare of perſonal happineſs or public eſteem. Their occupations are calculated to increaſe the peculiarities, rather than to ſtrengthen the governing powers of their minds; their ſenſibility is indulged at the expence of their peace, and the pride of genius is ſoothed by contempt of the ordinary rules, which reſtrain the paſſions of common men. To cauſes like theſe muſt we attribute, and on ſuch grounds of palliation muſt we excuſe, the morbid melancholy, the ſceptical propenſities, and the intemperate habits of Burns. When theſe are forgotten, or only remembered through the favourable medium of candid biography, his poems, with all the diſadvantages of an obſcure dialect, will be recited by his ruſtic countrymen, as long as the ſimplicity of their feelings remains unſophiſticated, and read with admiration by the critic, as long as the laws of poetry and criticiſm are ſuffered to accord with the dictates of nature.

BURNT, in ſpeaking of medicines, imports as much as imperfectly calcined. See CALCINATION.

Burnt bodies are generally dry and aſtringent. The other medical qualities belonging to bodies are frequently deſtroyed, at leaſt impaired, by the burning.

BURNT-*Clay*, in *Agriculture*, ſuch clay as has undergone a proceſs of calcination by means of fire. In this proceſs, it is ſuppoſed by Dr. Darwin that oxygen is combined in large proportions either with the clay itſelf or the metallic particles which it may contain, and on this account probably becomes uſeful as a manure. This buſineſs may be accompliſhed by means of clamps or kilns, or ſimply by piling up heaps of clay looſely together, with a little dry bruſh-wood, or other ſimilar combuſtible materials in the middle of them to which the fire may be applied. In this way much manure may be eaſily procured, where the materials abound. Calcined clay, as a manure, is probably moſt proper for cloſe compact ſoils, as it opens and renders them more porous, and thereby diſpoſes ſuch lands to part with their vegetable nouriſhment more readily.

It is alſo ſuppoſed, by the author we have juſt mentioned, that calcined clay, as it exiſts in ſoft bricks, has a power of decompoſing marine ſalt, as he once obſerved in a cellar, where beef had been long ſalted on one ſide of a nine-inch wall, the wooden ſalting-tub for which was attached to it; a great efflorescence having appeared on the other ſide of the wall, which he believed to be foſſil alkali, or natron. If this idea be juſt, ſays he, the ſoft bricks from old buildings, or clays ſo far purpoſely burnt, may in this manner be ſerviceable to vegetation, by ſeparating the foſſil alkali from the ſea-ſalt, waſhed from decompoſing animal and vegetable ſubſtances, which, by converting carbon into an hepar carbonis, as lime is ſuppoſed to do, might render it ſoluble in water, and capable of being abſorbed by the lymphatic veſſels of the roots of plants. And, continues he, if clay, calcined to a certain degree, and thus united with oxygen, poſſeſſed the power of decompoſing marine ſalt, there is reaſon to believe, when it is more ſlowly united with oxygen by its expoſure to the atmoſphere by the ſpade or plough, that it may poſſeſs the ſame property, and that this may have given riſe to the very contradictory reports concerning the uſe of ſea-ſalt in agriculture, as it may probably be of great advantage to clayey ſoils, but perhaps not ſo to other ſoils. See CLAY.

BURNT-*grain*, a vegetable diſeaſe frequently met with in the ears of grain, but which is probably not yet well underſtood; the characteriſtic marks of which, according to ſome, are, that the plants which produce burnt ears are ſtrong and vigorous; that the infected ears are not at firſt diſtinguiſhable from thoſe that are healthy; but, when they are paſt their bloom, they appear of a deep green colour, approaching to blue; they afterwards become whitiſh, and are then eaſily known. "As this change of colour is effected by the ſun, when a number of white ears have been ſuddenly perceived in looking over a wheat field, the ſun's heat has been often thought to cauſe this diſtemper, or a fog preceding that heat. And though all the ears produced from one grain are commonly infected, yet ſound ears are met with on plants which have produced others which were infected. Some ears have even been obſerved, part of which only were vitiated; and, finally, ſome grains incloſing partly a white flour, the remainder black duſt."

It has been farther remarked, that, in burnt ears, the chaff, or outward coat, is commonly found, with this ſingle difference, that, when the ears are nearly ripe, it appears more withered and dry than in the healthy ears. The huſk which immediately incloſed the grain is not deſtroyed, but has conſiſtence enough for the grain to preſerve nearly its natural form, with a whitiſh look; and the burnt grains are ſhorter, rounder, and lighter, than ſuch as are uninfected; they are ſometimes larger and ſometimes ſmaller. The furrow which runs the length of a grain of wheat is ſometimes totally effaced, at others viſible: the piſtils at the extremity of the grains are dried up, but the bud of a burnt grain is not viſible. Till the blooming ſeaſon, there is very little difference between the diſeaſed grains and thoſe which are healthy; they are only a little more ſwelled: but, in the blooming ſeaſon, the infected ears aſſume a bluiſh colour; the chaff is more or leſs ſpeckled with ſmall white ſpots: the grains are of a deeper green, and larger than in the natural ſtate, and, as long as they preſerve that colour, they adhere ſtrongly to the chaff. The diſtemper, it is ſaid, has often attacked very young ears, while yet incloſed in the ſheath. The ſtamina on the ſides of the grain are then dried up and ſickly; the embryo in part takes the deep green colour above-mentioned; the infected ears have not the conſiſtence of thoſe that are healthy. In the ſame proportion as the diſtemper advances, the chaff becomes dry and whitiſh. The grains have ſome degree of firmneſs. On opening them, which may eaſily be done with the nail, there appears an unctuous, dark-brown, ſtinking ſubſtance. The duſt of burnt grain has alſo ſome coheſion or tenacity. By others it is, however, ſuppoſed to originate from inſects; in which view we have the following remedies propoſed on the authority of experiment in the ſeventh volume of the Bath papers. The trials were made in the middle of a twenty-acre cloſe, the reſidue of which was ſown with the ſame kind of wheat, and treated in the ſame mode as Nos. I. and II. and was equally as clean, and the crops have been ſo ever ſince. The writer's mode of medicating his wheat was as in No. II.

"No. I. Sowed five drills with Mr. Cooke's machine, with wheat treated agreeable to Mr. Middleton's receipt.

"No. II. Sowed five drills with wheat wetted with old urine, three quarts to a buſhel, and turned about with a ſhovel till all the urine was imbibed, then plenty of quicklime ſifted over it, and turned over and over with a ſhovel, and left in a heap till the next morning.

"No. III. Sowed five drills with wheat ſteeped two hours in a ſtrong lye, made of wood-aſhes and lime, and laid on the barn floor to dry.

"No. IV. Sowed with five drills of the ſame kind of wheat."

The reſult was as follows:

"Nos. II. and II. Scarce a burnt ear to be found in them.

"No. III. About a twentieth part burnt.

"No. IV. Near a fourth burnt.

"No. V. Picked ten good corns out of an ear, the remainder were burnt; planted them in the garden; ſix only vegetated, which produced ſeventy-two ears, one root of which only was burnt; conſequently the opinion that the good corns in a burnt ear produce burnts again is fallacious, otherwiſe the whole muſt have been burnt."

The above experiments ſeem to prove, ſays the writer, that "wetting wheat with old urine, and drying it with lime, is a preventative;" and he conceives that an inſect, by depoſiting its egg, eggs, or ſeed, on the corn, when growing, is the cauſe of *burnts*. Suppoſing this to be the caſe, "the wetting the corn with brine, urine, or ſtrong lye, would of courſe deſtroy ſome of the eggs or ſeed, or even an animalcule, and the lime, by its corroſive quality, annihilate the remainder;" but "ſhould any of the eggs, &c. remain on the corn animable, there may be here and there a burnt in the crop." But, "if on the other hand the inſect ſhould depoſit its egg, eggs, or ſeed, in the earth, it is poſſible the brine, urine, and lime, wherewith the corn is as it were coated when ſowed, may be unpleaſing to the delicate taſte of the little animal, and prevent its wounding the tubes of the plant." Farther and more accurate experiments are, however, ſtill wanting to fully elucidate and aſcertain the nature and beſt modes of preventing this vegetable malady. See Smut.

Burnt *iſland*, in *Geography*, an iſland in Chriſtmas Sound, at the ſouthern extremity of South America.—Alſo, an iſland near the ſouthern coaſt of Newfoundland; 15 miles E. S. E. from Cape Ray. N. lat. 47° 30′. W. long. 58° 50′.

Burnt *iſlands*, a cluſter of iſlands in the Indian ocean, ſituate on the coaſt of Malabar, W. N. W. from Goa. N. lat. 15° 15′. E. long. 73° 30′.

Burnt *planet*. A planet is ſaid to be burnt, *combuſtus*, when it is in conjunction, or nearly ſo, with the ſun. Thus Saturn is ſaid to be burnt when not above five degrees diſtant from the ſun; Jupiter when ſix, &c. Planets in this ſituation are ſuppoſed by aſtrologers to be much weakened or enfeebled in their influences.

Burnt *way*, *combuſta via*, amongſt *Aſtrologers*, that part of the zodiac from the beginning of Libra to the middle of Scorpio; or, according to others, from the middle of Libra to the end of Scorpio, comprehending 45 degrees; a ſpace ſuppoſed very unfortunate, and in which the planets are much enfeebled in their virtues, eſpecially the moon. Vital. Lex. Math. p. 118.

Burnt-*wine*. See Wine.

Burnt-coat *iſland*, in *Geography*. See Penobscot *bay*.

BURNTISLAND, or Brunt-island, is a pariſh, and royal burgh, and ſea-port town in Fifeſhire, Scotland. Mr. Pennant deſcribes it as "the beſt harbour on the coaſt, formed by a rocky iſle, eked out with piers." This harbour, though capacious, and of great depth, at high tides, is dry at low water. The town is ſituated on the banks of the Frith of Forth, upon a peninſula which is ſcreened on the north, by an amphitheatrical range of hills. It is nearly oppoſite to Leith, from which it is diſtant ſix miles, and about nine miles N. W. from Edinburgh. From the remains of fortified walls, and entrenchments, it appears that this place has been garriſoned, and was probably firſt fortified by the French, when allied to the queen regent during the troubles of 1560. Cromwell beſieged it during his uſurpation, and forced the inhabitants to capitulate, though not without certain conditions which ultimately proved advantageous to the town; for, among other ſtipulations he agreed to repair the ſtreets and harbour, and build the quay. In 1715, the town was ſurpriſed and taken by the rebels, who boldly oppoſed all reſiſtance, and paſſed part of their troops from this place over to the oppoſite ſhore. Before the union, the trade of Bruntiſland was very conſiderable, and conſiſted principally in the exportation of corn and malt to England, but this trade has declined for many years, and it is not till very lately that the town has felt the benefit of its revival. At preſent here are a ſugar-houſe, a vitriol work, and a diſtillery, beſides ſhip building, which is carried on to ſome extent. The town is governed by 21 perſons who are denominated, and divided into 14 guild counſellors, 3 of whom are bailiffs, and 7 trade counſellors.

The pariſh and environs of Burntiſland are diverſified with mountain and plain. To the weſtward of the town the ſhore is rocky, and on the eaſt it is ſandy. The rocks conſtitute a good defence to the harbour, and at the ſame time furniſh ſufficient ſea-weed to make 12 or 15 tons of kelp annually. Within theſe are ſome productive oyſter-beds, and other ſhell fiſh frequent the receſſes. "The hills in the neighbourhood of the town exhibit many appearances of volcanic fire; one is extremely like an extinguiſhed volcano, the crater being converted into a lake on the top of the hill, ſimilar to thoſe obſerved by the abbé Spallanzani." (See *his Travels in the Two Sicilies*). On the north ſide of this hill are ſeveral baſaltic columns, and near the ſummit are the remains of an encampment, called *Agricola's Camp*. The population of this pariſh in 1801 was 1530. W. long. 3° 5′. N. lat. 56° 8′. Pennant's Tour in Scotland. Gazetteer of Scotland.

BURNTWOOD. See Brentwood.

Burntwood *river*, a river of North America, which flows from Burntwood lake through Split lake into port Nelſon river, and there diſcharges itſelf into Hudſon bay. The lake is in N. lat. 55° 3′. W. long. 98° 40′.

BURONZO, a town of Italy, in the country of Vercelli; 12 miles N. W. of Vercelli.

BUROW, a town of Germany, in the circle of Upper Saxony, and principality of Anhalt Zerbſt; 2 miles W. of Coſwick.

BURR, the round knob of a horn next the deer's head.

Burr denotes a hollow triangular chiſſel, uſed to clear the corners of mortiſſes.

Burr, in *Botany*. See Bud.

Burr, in *Geography*, a ſmall rocky iſland, with ſome ſmaller rocks often covered by the water in its neighbourhood on the eaſtern coaſt of the county of Down, Ireland, a little to the north of which is tolerable anchorage. It is nine Iriſh miles ſouth of Donaghadee, and as many north of the entrance into Strangford lough. N. lat. 54° 28′. W. long. 5° 19′.

Burr, in *Heraldry*, means a broad ring of iron behind the place made for the hand on the tilting ſpear, which burr is brought to the reſt when the tilter charges his ſpear to ſecure it.

Burr-*pump*. See Bildge and Pump.

Burr-*reed*, in *Botany*. See Sparganium.

Burr-*ſtones*. See Mill-*ſtones*.

BURRA, in *Geography*, a large and fertile mountain of Arabia, near Homran.

Burra, one of the Shetland iſlands of Scotland, ſituated on the weſtern coaſt of the main land. N. lat. 54° 28′. E. long 1° 32′.

BURRAMPOOTER, or as it is called by the people of Aſam, *Burrampoot*, a large river of Aſia, and the nobleſt tributary ſtream of the Ganges, derives its name from a Sanſcrit word, *Brahma-pooter*, which ſignifies the "Son of Brahma," and became known to us, as a capital river, in conſequence of the ſurvey made of it by Major Rennell, in 1765. He found it to be rather larger than the Ganges, and that its courſe previous to its entering Bengal was from the eaſt, although all former accounts repreſented it as proceeding from the north. This noble river has its ſource on the oppoſite ſide of the ſame mountains that give riſe to the Ganges, and firſt takes its courſe eaſtward, or directly oppoſite to that of the Ganges, through the country of Thibet, where it is named "Sanpoo" or "Zanciu," which bears the ſame interpretation as the "Gonga" of Hindooſtan, namely, "the river." After winding with a rapid current through Thibet, it waſhes the border of the territory of Laſſa, and then deviating from an eaſt to a ſouth-eaſt courſe, it approaches within 220 miles of Yunan, the weſternmoſt province of China. Hence it turns ſuddenly to the weſt through Aſam, where it probably changes its name, being there called Burrampoot, and enters Bengal on the north-eaſt. After its entry into Bengal, it makes a circuit round the weſtern point of the Garrow mountains; and then, altering its courſe to ſouth, it meets the Ganges about 40 miles from the ſea. After the river Megna has fallen into the Burrampooter, it communicates its name, though a much ſmaller river, to the other, during the reſt of its courſe. A ſingular circumſtance, lately diſcovered, attends the courſes of the Ganges and Burrampooter, with reſpect to each other. Iſſuing from oppoſite ſides of the ſame ridge of mountains, they direct their reſpective courſes towards oppoſite quarters, till they are more than 1200 miles aſunder; and afterwards meet in one point near the ſea, after each has performed a winding courſe of more than 2000 miles. The Burrampooter, during a courſe of 400 miles through Bengal, bears ſo intimate a reſemblance to the Ganges, except in one particular, that the ſame deſcription may ſerve for both. The exception is, that during the laſt 60 miles, before its junction with the Ganges, it forms a ſtream, which is regularly from 4 to 5 miles wide; and which, the freſhneſs of its water excepted, might paſs for an arm of the ſea. In attempting to convey an adequate idea of the grandeur of this magnificent object, major Rennell adopts the poetical language of Thompſon, in his "Seaſons;"

"—— Scarce the muſe
Dares ſtretch her wing o'er this enormous maſs
Of ruſhing water; to whoſe dread expanſe,
Continuous depth, and wond'rous length of courſe,
Our floods are rills——."

The major, in accounting for the ſingular breadth of the Megna, is led to ſuppoſe, that the Ganges once joined it where the Iſſamuty now does near Fringy-bazar, and that their joint waters ſcooped out its preſent bed. The preſent junction of theſe two mighty rivers below Luckipour, produces a body of running freſh water, hardly to be equalled in the old hemiſphere; and, perhaps, not exceeded in the new. It now forms a gulf interſperſed with iſlands, ſome of which rival, in ſize and fertility, our Iſle of Wight. The water at ordinary times is hardly brackiſh at the extremities of theſe iſlands; and, in the rainy ſeaſon, the ſea (or at leaſt the ſurface of it) is perfectly freſh to the diſtance of many leagues from the ſhore. For an account of the bore in the Megna, ſee Bore. Rennell's Memoir.

BURRAS-*pipe*, an inſtrument uſed by goldſmiths, conſiſting of a copper box with a ſpout, having teeth like a ſaw; ſometimes alſo uſed by ſurgeons for the application of certain ſolid medicines by inſperſion.

BURREL-*fly*, in *Entomology* See Wringle-tail.

BURREN, in *Geography*, a barony in the northern part of the county of Clare, Ireland. It is very mountainous, and Cromwell's forces which were ſent to harraſs the inhabitants for refuſing to pay contributions, complained that it had neither wood, water, nor earth, ſufficient to hang, drown, or bury a man. Such, however, is the luxuriance of the paſturage, interſperſed among the rocks, that theſe ſeemingly barren hills ſupport a great number of cattle, and very large flocks of ſheep.

BURRISAKANE, a port town of the county of Tipperary, Ireland, 79 Iriſh miles S. W. from Dublin.

BURRISHOOLE, a village and pariſh of the county of Mayo, Ireland, ſituated near the mouth of a ſmall river of the ſame name, which falls into Newport or Clew bay, about two miles north of the town of Newport. It was once of ſufficient importance to give name to the barony it is in; and even to the bay alſo. There ſtill remains ſome part of a monaſtery founded here by one of the family of Bourke or Burgho of the branch called M'William Oughter. The barony is very mountainous, and entirely deſtitute of wood, but the ſoil in the vallies, which is moſtly moory loam, is pretty good for tillage, in which it is almoſt excluſively employed. The barony includes the large iſland of Achill, and a great number of other iſlands.

BURROCK, a ſmall wear or dam, where wheels are laid in a river, for the taking of fiſh.

BURROS-IN-OSSORY, a poſt town, of the Queen's county, Ireland, near the confines of Tipperary; 53 Iriſh miles S.W. of Dublin.

BURROSILEAGH, a poſt town of the county of Tipperary, Ireland; 77 Iriſh miles S.W. from Dublin.

BURROUGH. See Borough.

Burrough, Edward, in *Biography*, one of the earlieſt preachers among the Quakers, was born of parents belonging to the eſtabliſhed church, at or near Kendal, in Weſtmorland, about the year 1634. In early life, he was diſtinguiſhed by his piety and virtue, as well as by the manlineſs of his reſolution, and the courteouſneſs of his temper. Anxious for the purity of religious worſhip, he adopted, in his twelfth year, that of the preſbyterians, becauſe he conceived it to be moſt conformable to the ſcriptures. At the age of 17, he attended the preaching of George Fox; and though at firſt he confided in his own ability to refute the doctrines which were taught by this zealous propagator of the tenets and practices of the Quakers, he was proſelyted by conferences with him, and became an ardent partiſan of this ſect. This ſecond change of his religious opinions incenſed his parents to ſuch a degree, that they turned him out of doors; and to this hardſhip he ſubmitted without repining. At the age of 20, he accompanied his intimate friend, Francis Howgill, to London, where he embraced every opportunity that offered itſelf, of addreſſing aſſemblies of people; and ſuch were his natural eloquence and the fervour of his zeal, that he ſucceeded in gaining proſelytes. His ſucceſs, however, excited the interference of the magiſtrates,

trates, and, in the year 1654, he was committed to priſon. But he was ſoon releaſed, and viſited Ireland, where he remained more than ſix months: and during his reſidence in that country he publiſhed a book, entitled "The Trumpet of the Lord ſounded out of Zion, which ſounds forth the controverſy of the Lord of Hoſts;" in which he expoſes the vices of various ranks of ſociety, and particularly accuſes Cromwell for ſuffering oppreſſion to be practiſed in his name. This work was followed in 1657 by ſeveral private letters addreſſed to the protector, containing admonitions againſt pride, and remonſtrances againſt the perſecutions of his brethren. Cromwell, it is ſaid, diſclaimed in reply any diſpoſition to perſecute. On the acceſſion of Richard Cromwell, he renewed his remonſtrances to him and his council, and in terms ſufficiently explicit, predicted the inſtability of the new government. In 1659 he made a viſit to Dunkirk, for the purpoſe of diſputing in the convents and monaſteries, and of attempting to convert their inhabitants. This attempt was perilous, and ſerved only to excite horror and averſion. Upon his return to England, his zeal was kindled by the news of the bloody perſecutions of the Quakers by the Preſbyterians of New England: and immediately after the reſtoration of Charles II. he obtained acceſs to him, and ſo far ſucceeded in repreſenting the diſtreſſed ſtate of his brethren in America, as to procure a mandamus, and the appointment of Nicholas Shattock, a Quaker, baniſhed from New England on pain of death, to carry it out to the colony. Notwithſtanding the laudable interference of Charles on this occaſion, a perſecution againſt the Friends commenced in 1662 in his own metropolis, which he adopted no means of preventing. Burrough was at this time, at Briſtol; but as ſoon as he received the intelligence, he determined to confront the ſtorm in London, though in parting with his friends he had intimated an apprehenſion, that his own life would be the ſacrifice. Soon after his arrival he preached at a meeting-houſe of the ſociety, and was committed to Newgate; and refuſing to pay the fine impoſed upon him at the enſuing ſeſſions, he was remanded to priſon, where, with 150 other perſons confined on the ſame account, he remained about eight months. At length, he fell a ſacrifice to the fever that carried off many of his companions, and expired on the 14th of February 1662-3, in his 28th year. During his illneſs, his mind retained its uſual vigour, and he derived conſolation from the conviction, that he had paſſed his life in performing the will of his maker. Againſt his enemies he retained no animoſity, but prayed by name for Richard Brown, the alderman, who had committed him. His character, notwithſtanding the enthuſiaſm of the new ſect to which he was attached, appears to have been truly eſtimable; and his efforts for reſtraining the ſpirit of perſecution, redound much to his honour. His works were numerous; and they were collected in 1672 in one volume, ſmall folio. Gen. Biog.

Burrough-*duck*, in *Zoology*, a common Engliſh name for the TADORNA.

Burroughs's *Machine*, in *Mechanics*, a machine for grinding and poliſhing glaſſes, invented by Mr. Burroughs of Southwark, for which the Society of Arts gave him a premium of 70l.

This machine conſiſts of a cog-wheel A, *Pl. II. Optics, fig.* 4. 12 feet in diameter, carrying 72 cogs; which turn a trundle-head B, one foot four inches in diameter, and furniſhed with eight rounds; and alſo an horizontal ſpur-wheel C. of 12 cogs, and one foot eight inches in diameter. The trundle-head B turns a ſpur-wheel D. of ten cogs, and two feet eight inches in diameter. This ſpur-wheel has two cranks, *a*, *b*, in its ſhaft; one of which *a* gives motion to a wooden frame, *c*, about 34 inches long and 19 broad. On the under ſide of this frame are faſtened by ſcrews twelve pieces of poliſhed metal, each five inches and a half long, and three broad, covered with leather; and underneath theſe poliſhers, a glaſs plate cemented in another frame is placed on the bench *d*, and poliſhed with tripoli by the motion given to the upper frame by the crank *a*. The nuts of the ſcrews which faſten the poliſhers to the upper frame are not ſcrewed cloſe to the wood, in order to give the frame room to play; by which contrivance the perpendicular riſe of the crank is avoided, and the motion of the poliſhers always parallel and equal. The under frame may be moved by the hand in any direction without ſtopping the machine: by which means the plate, when larger than the poliſhing frame can cover in its motion, will be equally poliſhed in every part.

The other crank, *b*, gives motion to two other poliſhers marked *n*, *o*, which have an alternate motion by the bending of the crank; they move upon the ſame plate, and have an equal number of poliſhers as that already deſcribed.

The ſame crank alſo gives motion to a contrivance repreſented at *e* for poliſhing ſpectacle-glaſſes. It conſiſts of two ſegments of the ſame ſphere; one concave and the other convex. On the latter the glaſſes are cemented; and poliſhed by the former, which is moved by the crank *b*. The convex ſegment may be moved round by the hand without ſtopping the machine, ſo that all the glaſſes on its ſuperficies will be equally poliſhed.

The other ſpur-wheel C, by means of a crank in its ſhaft, gives motion to another frame *g*, employed in grinding the glaſs plates. The rod *h*, extended from the crank *f* to the frame *g*, is faſtened to the latter by means of a pivot, in order to admit of a rotatory motion, as well as that given it by the crank in a longitudinal direction. This rotatory motion is effected by means of a rod of iron *i*, called a *trigger*, ſharp at the extremity next the frame, where it touches the teeth of an horizontal ſpur-wheel, or circular piece of wood, fixed on the grinding plate, while the other end is extended three feet two inches to the centre of motion.

But this contrivance, in which the merit of the machine principally conſiſts, will be much better conceived from a ſmall delineation of it by itſelf *fig.* 5, where F is the crank marked *f* in *fig.* 4. and turned by the ſpur-wheel C in the ſame figure. G. is the trigger, three feet two inches long. I, a roll fixed on the trigger for the rod to ſlide on. H. the horizontal ſpur-wheel, eleven inches in diameter, fixed on the grinding plate; the teeth of which are touched by the trigger; but with a very unequal force, as it will wholly depend upon the grinding-plate's being farther from, or nearer to the centre of motion of the trigger. By this ſimple contrivance, the grinding-plate has a very compound motion, never moving exactly in the ſame track, and therefore muſt grind the plates equally in every part. Several attempts have been made by others for producing the ſame effect: but without ſucceſs; the grinding-plate always follows the ſame track, and conſequently the plates are ground equally.

BURROW, or Barrow. See Barrow.

Burrow, ſir James, in *Biography*, maſter of the crown-office, was a fellow both of the Royal and Antiquarian Societies, and on the death of Mr. Weſt in 1772, he occupied the chair of preſident at the Royal Society till the anniverſary election, when he ſurrendered it to Sir John Pringle; and in 1773, on occaſion of an addreſs preſented by the ſociety to his majeſty, he received the honour of knighthood. He publiſhed two volumes of reports in 1766, two others in 1771 and 1776, and a volume of deciſions of the court of king's bench, upon ſettlement caſes, from

1732 to 1772, to which was ſubjoined an "Eſſay of Punctuation," in three parts 4to., 1768, 1772, 1776. This eſſay was alſo printed ſeparately in 4to. 1773. He alſo publiſhed, without his name, a few anecdotes and obſervations relating to Oliver Cromwell and his family, ſerving to rectify ſeveral errors concerning him; publiſhed by Nicol. Comm. Papadopoli, in his "Hiſtoria Gymnaſii Patavini," 1763, 4to. He died Nov. 5, 1782.

BURROWS, holes in a WARREN, ſerving as a covert for rabbits, &c.

A coney's coming out of her burrow is called *bolting*. To catch coneys, they ſometimes lay purſe-nets over the burrows, then put in a terrier cloſe muzzled, which making the creature bolt, ſhe is caught in the net.

BURRVILLE, in *Geography*, a poſt-town of America, in Anderſon county, Teneſſee, 570 miles from Waſhington.

BURRUN-*Sunker*, in *Hiſtory*, the denomination of a fifth or adventitious claſs of Hindoos, diſtinct from, and ſubordinate to the four regular caſts or claſſes into which they are diſtributed, and ſuppoſed to be the offspring of an unlawful union between perſons of different caſts. Theſe are moſtly dealers in petty articles of retail trade. This adventitious caſt is not mentioned by European authors; and they ſeem to conſider the members of this caſt as belonging to the SOODER. Preface to the code of Gentoo laws, p. 46 and 99. See CAST.

BURS, in *Navigation*, are boats ſo called in Bengal, which are uſed for inland navigation on the Ganges, and are very lightly built of thin deals, without either keel or ſide-timbers. The edges of the planks are faſtened together with ſtaples, and the ſeams are ſtopped up with moſs, and payed with greaſe. Their largeſt breadth is about one third of their whole length from the ſtern, where they run up with a bend: they are very ſharp forwards, and are not very high above the water. Although they are of different ſizes, they are all of the ſame ſhape and conſtruction; and ſome of them can load 50,000 lbs. weight of merchandize, and more. They are provided with a ſingle maſt, which has a large ſquare ſail; and as they take in a great quantity of water from the ſides and bottoms, the crew are compelled to employ ſome perſons continually in baling. They are uſed for the carriage of cotton, and other bulky materials, the weight of which cannot bear any proportion to their ſize. In common with all the other boats of the country, their bottoms are nearly flat; and indeed, it would be impracticable on the Ganges to employ veſſels formed for drawing any conſiderable quantity of water, as the navigation is rendered extremely dangerous from the continual ſhifting of the ſands.

BURSA, *Burſe*, originally ſignifies a purſe.

BURSA is more particularly uſed, in *Middle Age Writers*, for a little college or hall in an univerſity, for the reſidence of ſtudents, called *burſales*, or *burſarii*.

BURSA, *Burſe*, or *Bourſe*, in the French univerſities, ſtill denotes a foundation for the maintenance of poor ſcholars in their ſtudies.

The nomination of burſes is in the hands of the patrons and founders thereof. The burſes of colleges are not benefices, but mere places aſſigned to certain countries and perſons. A burſe becomes vacant by the burſer's being promoted to a cure, as being incompatible.

BURSA, or PRUSA, in *Geography*, a beautiful town of Aſiatic Turkey, in the province of Natolia, ſituate at the northern foot of mount Olympus, and well watered by ſprings. The Jews have four ſynagogues, the Greeks three churches, and a metropolitan: the Armenians have likewiſe a church, and an archbiſhop. The Bereſtine is a ſpacious edifice, well built and filled with warehouſes and ſhops, in which are expoſed to ſale all kinds of merchandizes, brought hither from the Levant, beſides the beautiful carpets, ſilk ſtuffs, velvet, &c. manufactured in the city itſelf. The Bithynian ſilk, which is the fineſt in Turkey, is moſtly manufactured here, beſides conſiderable quantities brought from Perſia, which, though leſs fine, is wrought by the Pruſian workmen, who are allowed to be the beſt in Turkey for weaving hangings, tapeſtry, carpets, and ſuch articles, which are in great requeſt, and carried from hence into all parts of Europe. The commerce of this place is much increaſed by the caravans that paſs through it from Aleppo and Smyrna to Conſtantinople, and alſo to Iſpahan. This city was built by Pruſias, king of Bithynia, after whom it was called Pruſa or Pruſia. In the year 947, it was taken and diſmantled by Seifeddulat, an Arabian prince of the race of Hamadan; but ſoon after conquered and fortified by the Greeks, who poſſeſſed it from that time till the year 1356, when Orchan, the ſon of Othman II., the emperor of the Turks, reduced it and made it the ſeat of his empire. From the conqueſt of Pruſa, authors have dated the true æra of the Ottoman empire. About a league from the town are ſome celebrated warm baths, on the road to which are ſeen the tombs of ſeveral ſultans, and chapels of marble and jaſper. By Tournefort's computation of families, the number of inhabitants has been eſtimated at 60,000. N. lat. 40° 3′. E. long. 28° 15′.

BURSA, in *Zoology*, a ſpecies of ALCYONIUM, called in common the ſea-purſe. This is ſomewhat globular, pulpous, and green. Gmel. Pallas deſcribes it as being ſubglobular, hollow, very green and ſoft, or pulpous, and thickly covered with tranſparent papillæ.

The alcyonium burſa inhabits the ſea coaſts of Europe; it is coriaceous, and about the ſize of a middling apple. The ſpecies is termed by Ray, &c. burſa marina: Aurantia marina, C. Bauh. Aurantium marinum, Marſ. hiſt. mar. &c.

BURSA *mucoſa*, in *Anatomy*, is an apparatus for facilitating the motion of muſcles and tendons upon thoſe parts on which they are deſigned to glide backwards and forwards.

They are alſo found between other parts which have a ſimilar ſliding motion on each other; as for inſtance, between the joint of the ſhoulder and the acromion.

The apparatus conſiſts of a bag, one ſurface of which is cloſely connected to the muſcle, and the other to the ſubjacent parts.

In ſtructure it reſembles the burſæ or capſules of joints, as in them there is ſecreted into its cavity a ſlippery fluid, like the ſynovia. When a muſcle or tendon moves freely and frequently upon a bone, the ſurface of the latter is rendered more ſmooth by a thin cruſt of cartilage being formed upon it; and this circumſtance further increaſes the ſimilitude of theſe contrivances to joints. An inſtance of this may be obſerved on the upper part of the os calcis upon which the tendo Achillis glides. Theſe burſæ will be noticed in the deſcription of the individual muſcles to which they belong. Dr. Monro has publiſhed a detailed account of the burſæ to which the reader is referred.

BURSA *paſtoris*, in *Botany*, *alpina*, *roſea*, *lutea*, Mor. See DRABA *aizoides*.

BURSA, *alpina*, hirſuta. C. Bauh. See DRABA *hirta*.

BURSA *major*, loculo oblongo. C. Bauh. and J. Bauh. See DRABA *muralis*.

BURSA *minor*, loculo oblongo. C. Bauh. See DRABA *verna*

BURSA. Fucks.
BURSA *major*, folio ſinuato. C. Bauh.
BURSA *major*, folio non ſinuato. C. B.
BURSA *media*. C. B.
} See THLASPI *Burſa paſtoris*.

Bursa *minor*. Dod.
Bursa *minor*, foliis inciſis. C. Bauh.
Bursa *parva*, folio glabro ſpiſſo. J. Bauh.
Bursa *minima*, Lob.
See Iberis *nudicaulis*.

Bursa *orientalis*, Tourn. See Bunias *cornuta*.

BURSALI, in *Geography*, a country of Africa, in Negroland, ſituated on the ſide of the river Gambia; about 12 leagues in length.

Bursalis *muſculus*, in *Anatomy*, a name given by Cowper and others to a muſcle of the thigh, called alſo *marſupialis* by the ſame authors. It is the *obturator internus* of Winſlow and Albinus, and is deſcribed by Veſalius under the name of *decimus tertius moventium*, and by Spigelius under that of *circumagentium tertius*, or *obturator internus*.

BURSAM, *revocatio per*, in the Norman *Laws*, is a right belonging to the next akin, to redeem or purchaſe back, within a year after ſale, a fee or tenement alienated by his kinſman, on paying the price it had been ſold at. Du-Cange.

BURSAR, or Burser, *burſarius*, is uſed in *Middle Age Writers*, for a treaſurer or caſh-keeper.

In this ſenſe we meet with burſars of colleges. Conventual burſars were officers in monaſteries, who were to deliver up their account yearly on the day after Michaelmas.

The word is formed from the Latin *burſa;* whence alſo the Engliſh word *purſe:* and hence the like officer, who in a college is called burſar, in a ſhip is called purser.

Bursars, or Bursers, in *Univerſities*, alſo denote thoſe who enjoy certain benefices left for defraying the expences of the education of young men of promiſing parts, and ſmall fortune. Actions brought for the effects of a college, are entered in the name of the principals and *burſars*. See Bursa.

BURSARIA, *Burſary*, in *Middle Age Writers*, denotes the place of receiving and paying money and rents by the burſars, or officers of account, in religious houſes. See Bursa and Bursar.

Bursaria, in *Botany*. Cavanilles. Icon. Plant. 350. Claſs and order, *pentandria monogynia*. Gen. Ch. *Cal.* very ſmall, deeply divided into five ſegments. *Cor.* Petals five, linear. *Stam.* five. *Piſt.* germ. ſuperior, ſtyle ſhort, ſtigma ſimple. *Peric.* capſule heart-ſhaped, compreſſed, one-celled, opening into two parts, each with two valves, and two horns. *Seeds* two.

Sp. *Burſaria Spinoſa;* a ſhrub. *Leaves* alternate, ridge-ſhaped, obtuſe, emarginate, on ſhort petioles. *Spines* axillary, very long. *Flowers* reddiſh in axillary racemes. A native of New-Holland.

Bursaria, in *Entomology*, a ſpecies of Aphis, found on the black poplar, in the hollow excreſcences which it forms in the leaves.

Bursaria, in *Zoology*, a ſpecies of sertularia, deſcribed by Ellis, as an inhabitant of the Britiſh coaſts. The denticles are oppoſite, compreſſed, faſtigiate, branched, and dichotomous; called the Shepherd's Purſe coralline in Engliſh.

BURSCHEIDT, in *Geography*, a town in Germany, in the biſhopric of Cologn, near Aix-la-Chapelle, with a Ciſtertian abbey, the abbeſs of which has a ſeat in the diet.

BURSE, in *Matters of Commerce*, denotes a public edifice for the aſſembly and intercourſe of merchants and traders; and is uſed in the ſame ſenſe with the more modern appellation of Exchange. In the times of the Romans, there were public places for the meeting of merchants in moſt trading cities of the empire: that built at Rome in the 259th year after its foundation, under the conſulate of Appius Claudius, and Publius Servilius, was denominated the "College of Merchants," of which ſome remains are ſtill viſible, and known by the modern Romans, under the name "Loggia." The Hans towns, after the example of the Romans, gave the name of Colleges to their burſes.

The firſt place of this kind to which the name burſe was given, Guicciardini aſſures us, was at Bruges; and it took its denomination from a hotel adjoining to it, built by a lord of the family *de la Bourſe*, whoſe arms, which are three purſes, are ſtill found on the crowning over the portal of the houſe. Catel's account is ſomewhat different, viz. that the merchants of Bruges bought a houſe or apartment to meet in, at which was the ſign of the purſe. From this city the name was afterwards transferred to the like places in others, as in Antwerp, Amſterdam, Bergen in Norway, and London.

Burse *of merchants*, *Bourſe des marchands*, denotes a court or juriſdiction eſtabliſhed in ſeveral trading cities of France, for the taking cognizance, at the firſt inſtance, of all diſputes ariſing between merchants, bankers, negociants, and the like, and from which no appeals lie but to the parliament.

The burſe is a kind of conſular juriſdiction, the judges whereof are alſo denominated *priors* and *conſuls*.

The burſe of merchants at Tholouſe was eſtabliſhed by Henry II. in 1549, after the manner of the judges conſervators of the privileges of the fairs at Lyons. The chief officers are a prior and two conſuls, choſen yearly, and empowered to chooſe and aſſociate, to the number of 60, ſeveral merchants to aſſiſt them in the deciſion of differences. Theſe are called judges *conſeillers de la retenue*. The burſe of Rouen, or as it is commonly called, the convention of Rouen, is of ſome years later ſtanding than that of Tholouſe, having only been erected in 1566. The lateſt of the conſular burſes is that of Marſeilles, eſtabliſhed by Louis XIV. in 1691; whoſe juriſdiction extends through ſeveral of the neighbouring dioceſes.

BURSEEAH, in *Geography*, a town of Hindooſtan, in the Malwa country; 90 miles E. of Ougein.

BURSERA, in *Botany*, (in honour of Ioachim Burſer, the diſciple of Caſpar Bauhin, whoſe Herbarium, conſiſting of thirty volumes, is now at Upſal,) Linn. gen. 440. Schreb. 1608. Juſſ. 372. Vent. vol. 3. 448. Claſs and order, *hexandria monogynia* Linn. *Polygamia Diœcia* Schreb. Nat. Ord. *Terebintaceæ* Juſſ.

Gen. Ch. *Cal.* ſmall, caducous, one-leaved, with three or five diviſions. *Cor.* Petals, three or five, ovate or lanceolate, a little longer than the calyx, and alternating with its diviſions. *Stamens*, ſix, eight, or ten: filaments ſtraight, ſhorter than the petals: anthers ovate or oblong. *Piſt.* germ. ſuperior, ovate, obtuſely three or five cornered: ſtyle very ſhort: ſtigma capitate, obtuſe. *Peric.* capſule one-celled with three ſucculent valves. *Linn.* on the authority of Jacquin. *Berry* coriaceous, ovate, three-cornered; containing under a fleſhy pulpy ſubſtance generally one, but ſometimes two, three, or even five ovate, compreſſed nuts; convex and even on one ſide, angular and uneven on the other, incloſing a kernel. The natural number is more than one, but the reſt are generally abortive. La Marck.

Eſſen. Ch. *Pericarp*, a coriaceous drupaceous berry, containing from one to five nuts, angular on one ſide, and convex on the other. La Marck.

Obſ. La Marck obſerves, that as the fruit contains a true ſtone with a kernel within it; and as, moreover, it is incloſed in a pulpy ſubſtance, and with a fleſhy ſkin, it cannot be conſidered as a capſule: but in oppoſition to this opinion given in the Encyclopædia, we may remark that, if his figure, (Illuſt.) be correct, it opens with three valves; a character not compatible with the definition either of a berry or a drupe. Authors differ much in their deſcription of the fructification. Schreber places it in the claſs Polygamia, but doubts whether it does not properly belong to *diœcia*, the anthers in the piſtiliferous plants appearing to be ſterile.

Sp. 1. B. *gummifera*, Linn. (Terebinthus, Comm. Brown. Sloan. Cateſb. Piſtacia, Linn. Sp. Pl. Ed. 1.) La Marck Illuſt. pl. 256. Jamaica birch tree. "Racemes axillary, flowers white." La Marck. A large and lofty tree. Trunk upright, ſmooth, round, covered with a ſmooth, thin, brown or greyiſh epidermis, peeling off in ſhreds like the European birch. *Leaves*, deciduous, alternate, unequally winged; leaflets three, five, ſeven, and ſometimes nine, oppoſite, petioled, ovate, acute, entire, ſmooth on both ſides, a little ſhining beneath, about an inch and half or two inches broad, three inches long, a little heart-ſhaped at their baſe. *Flowers*, ſmall, without ſmell, in compound axillary racemes, near the ſummit of the branches. *Fruit*, the ſize of a hazel nut, greeniſh, tinged with purple when ripe, reſinous, odorous. La Marck. From the interior bark exudes a clear, glutinous balſamic juice, which ſmells like turpentine, and ſoon thickens in the air, into the form of a gum. The bark of the root is thought to be the Sima-rouba of the ſhops, which is an effectual remedy in bloody fluxes. La Marck ſuppoſes that the Terebinthus of Cateſby with lanceolate leaves, and a bluiſh-violet fruit, is either a diſtinct ſpecies, or at leaſt a well-marked variety. A native of the Weſt Indies. 2. B. *paniculata*. La Marck. "Racemes panicled, terminal; flowers purple." Com. Herb. Ic. and MSS. A large tree. *Branches* below the leaves rough with tubercles and ſcars. *Leaves* alternate, unequally winged: leaflets five or ſeven, ovate-acuminate, entire, ſmooth, petioled, with nerves ſlightly projecting beneath. *Flowers* ſmall, numerous in panicled, terminal racemes about ſix inches long. *Calyx* ſmall, one-leafed, three-lobed. *Petals* three, longer than the calyx, broad at their baſe, obtuſe at their ſummit, with a ſmall ſcarcely diſcernible point. *Stamens* ſix: filaments half the length of the petals, nearly connivent: anthers, brown, oblong, with three furrows. In many flowers, Commerſon could not obſerve any appearance of a piſtil, but in others there was a very obtuſe ſtigma in the centre of a kind of receptacle flattened above, and ſomewhat five-cornered. It produces a reſinous juice like the preceding. A native of the Iſle de France. 3. B. *obtuſifolia*. La Marck. (Marignia. Comm.) "Racemes panicled, ſubterminal; leaflets obtuſe." A large tree, very reſinous. *Leaves* alternate, ſcattered, unequally winged; leaflets five or ſeven, and ſometimes nine, ovate-oblong, obtuſe, thickiſh, coriaceous, ſmooth on both ſides, even and ſhining above, petioled, oppoſite, an inch and half broad, three inches long. *Flowers* ſmall, very numerous, whitiſh: racemes much branched. *Calyx* very ſmall, with five diviſions. *Petals* five, ovate-lanceolate, expanding, nearly twice the length of the calyx, and attached between its diviſions. *Stamens* ten: filaments very ſhort; anthers ſmall, round, yellowiſh. *Germ.* round; ſtigma almoſt ſeſſile. *Fruit*, a drupaceous coriaceous berry, about the ſize of a hazel-nut; pulp rather thick, gelatinous, and reddiſh: nuts from one to five, rather thick, convex on one ſide, angular on the other. A native of the Iſle of France.

BURSERIA, Læfl. See VERBENA *Lappulacea*.

BURSLEM, in *Geography*, a village of Staffordſhire, in England, famous for its pottery; three miles N. of Newcaſtle under Line.

BURSONTOWN, a poſt-town of America in Bucks county, Pennſylvania.

BURSTADT, a town of Germany, in the circle of the Lower Rhine, and electorate of Mentz; two miles E. of Miltenberg.

BURSTEN, a perſon ruptured, called by phyſicians *hernioſus*; in middle age writers, *ponderoſus*. See HERNIA.

BURTHEN. See BURDEN.

BURTON, WILLIAM, in *Biography*, a ſkilful topographer, and antiquary, was born of a good family at Lindley in Leiceſterſhire, in 1575; and educated at Brazen-Noſe college in the univerſity of Oxford. When he left college, he entered for the ſtudy of the law in the Temple, and in due time was called to the bar. But as his fortune was eaſy, and his health delicate, he declined purſuing his profeſſion, and retired into the country, where he devoted himſelf to the ſtudy of antiquities, and became eminent in this department. His deſcription of Leiceſterſhire, publiſhed in 1622, in a ſmall folio, and republiſhed by William Wittingham of Lynn, in 1777, was one of the earlieſt county hiſtories, having been preceded by only four others; and from this circumſtance it derives its chief reputation. The ſtyle of it is looſe and the digreſſions are numerous. After having been much injured by the civil wars, he died at his ſeat of Fulde, in Staffordſhire, in 1645; and left behind him ſeveral MSS. collections of arms, monuments, and other matters of antiquity. His ſon, whom he named Caſſibilan, publiſhed a tranſlation in verſe of Martial's epigrams.

Another *William Burton* was born in London, and educated at Queen's college, Oxford; and after having been Greek lecturer in Glouceſter Hall, was conſtrained by indigence to leave the univerſity in 1630. He afterwards became maſter of the free grammar ſchool at Kingſton upon Thames, which office he reſigned two years before his death in 1657. Beſides his principal work, which was "A Commentary on Antoninus his Itinerary, &c." illuſtrated with a chorographical map of the ſeveral ſtations," Lond. 1658, folio, he wrote, in Latin, a hiſtory of the Perſic language and other works, enumerated by Wood in his Athenæ. His great-grandfather is ſaid to have expired with exceſs of joy upon being informed of the death of Queen Mary. Biog. Brit.

BURTON, ROBERT, brother of the antiquary, *William*, was born at Lindley, in 1576, and educated at Brazen-noſe and Chriſt-church colleges, in the univerſity of Oxford. He retained two preferments in the church, viz. the vicarage of St. Thomas in Oxford, and the rectory of Segrave in Leiceſterſhire, till his death in 1639. He was much addicted to aſtrology, and is ſaid to have predicted the time of his own death. With the character of a general ſcholar and hard ſtudent, well verſed in the pedantic literature of the times, he combined great integrity and benevolence. But his temper was of an humorous and melancholic caſt, which gave a ſingular kind of oddity to his conduct. In order to relieve his melancholy, he diverted himſelf by liſtening to the ribaldry of the bargemen, which ſeldom failed to occaſion vehement burſts of laughter. At other times he was one of the moſt facetious companions in the Univerſity. His famous book, entitled the "Anatomy of Melancholy," was compoſed with a view of ſoothing his peculiar diſpoſition; and conſiſts chiefly of extracts from ancient authors, illuſtrating the cauſes, effects, and cure of that morbid affection. The author's own reflections are few; but they are original, ingenious, and ſtriking. To the bookſeller, this work, printed firſt in 4to. and afterwards frequently in folio, was very profitable. After it had been long neglected and almoſt forgotten, it attracted notice in conſequence of an ingenious eſſay by Dr. Ferrier of Mancheſter, who detected among the plagiariſms of Sterne, various paſſages copied verbatim from Burton. The author died in 1639; and the following inſcription, written by himſelf, was put upon his monument in Chriſt-church: "Paucis notus, paucioribus ignotus, hic jacet Democritus junior, cui vitam dedit et mortem melancholia." Biog. Brit.

BURTON, JOHN, a learned divine of the laſt century, was born in 1696, at Wembworth, in Devonſhire, and admitted a ſcholar of Corpus Chriſti college at Oxford in 1713, of which he at length became a tutor. In the exerciſe of this office, he devoted himſelf with ſingular aſſiduity and zeal to the improvement of his pupils; and he exerted himſelf in a variety of ways for the advancement of learning. Beſides the attention which he paid to academical diſcipline, he improved the mode of diſcuſſing philoſophical queſtions in the ſchools, and had the honour of introducing the ſtudy of Locke, and other modern philoſophers, in connection with Ariſtotle. He alſo took great pains in promoting claſſical literature, by frequent lectures both in the Greek and Latin languages; and he extended the utility of the univerſity preſs for the aid and encouragement of literary undertakings. In 1733 he was elected a fellow of Eton college; and about the ſame time was preſented to the vicarage of Maple-Derham, in Oxfordſhire. On this occaſion he was induced, by motives of ſympathy and compaſſion, to marry the widow of his predeceſſor in that living, with the charge of three infant daughters that were left deſtitute; and though he thus formed a connection which, according to the maxims of the world, would be condemned as imprudent, he found in the event that the choice of a perſon who poſſeſſed every qualification for fixing his attachment, except money, contributed to his future happineſs. In this retired ſtation of a country clergyman, he continued for ſeveral years; occupying himſelf in literary purſuits, and in the improvement of his houſe and grounds, not leſs for the benefit of his ſucceſſors than for his own amuſement. After the death of his wife in 1748, an event which deeply affected him, and which he much lamented, he chiefly reſided on his fellowſhip at Eton; where his ſituation was ſuch in every reſpect as ſuited his ſtudious and literary diſpoſition. In 1752 he took his degree of doctor in divinity; and continued to appear occaſionally both as a writer and a preacher, much eſteemed by the higher and lower claſſes of his own order, with whom he had frequent and free intercourſe, and alſo by the common people, with whom he aſſociated in the moſt condeſcending and affable manner. His leiſure hours he amuſed by poetical exerciſes. Towards the cloſe of his life he was attacked with a fever, which impaired his intellects, and ſhattered his decaying frame; but at intervals he ſeemed to recover the powers both of his body and mind. On the evening of Sunday, the day before his death, he diſcourſed according to his uſual manner, with more than uſual perſpicuity and elegance, on ſome theological ſubject; and after a very ſerene ſleep, he gently departed this life on the following day, February the 11th, 1771, and was buried at the entrance of the inner chapel at Eton. The works of Dr. Burton are chiefly collected in two volumes of Sermons, which are much laboured, of a conſiderable length, and containing a great variety of matter; an octavo volume of theological diſſertations, entitled "Opuſcula Miſcellanea Theologica;" and another of "Opuſcula Miſcellanea Metrico-proſaica;" comprehending a variety of pieces in Greek and Latin, with two or three copies of Engliſh verſes. In one of theſe pieces, entitled "Commentariolus Thomæ Secker, Archiep. Cantuar. memoriæ ſacer," Dr. Burton indulged himſelf in ſome ſeverity of animadverſion againſt the diſſenters, on account of their ſuppoſed oppoſition to the ſettlement of a biſhop in America, which induced Dr. Furneaux in his letters to Mr. Juſtice Blackſtone, to vindicate that body of men againſt the charge brought againſt them. Dr. Burton was alſo the author of ſome other publications beſides thoſe contained in the volumes above-mentioned. In 1744 he publiſhed at Oxford, in large 8vo. "The Genuineneſs of Lord Clarendon's Hiſtory of the Rebellion, printed at Oxford, vindicated," in which he fully refutes the ſlander that had been advanced by Oldmixon, in his Critical Hiſtory of England. In 1758, appeared his "Diſſertatio et Notæ Criticæ ſpectantes ad Tragædias quaſdam Græcas, editas in Pentalogia." The publication of the five ſelect tragedies, which conſtitute the "Pentalogia," had been recommended to him by a pupil of promiſing talents, Joſeph Bingham, who had printed almoſt the whole text and notes, when in 1736 he was cut off by a premature death. Dr. Burton has added a preface, diſſertations, and additional notes. This work has been reprinted at the Clarendon preſs, and is much eſteemed as a book for ſtudents in Greek. In 1766, Dr. Burton publiſhed a diſcourſe, entitled, "Papiſts and Phariſees compared, or Papiſts the corrupters of Chriſtianity," occaſioned by Philips's life of Cardinal Pole. About the ſame time he alſo delivered a ſet of ſermons, ſtill in MS.; the deſign of which was to refute the articles of the Council of Trent. He is alſo underſtood to have been the author, under the name of Phileleutherus Londinenſis, of "The Remarks on Dr. King's Speech before the Univerſity of Oxford, at the dedication of Dr. Radcliff's library, on the 13th of April, 1749;" to which Dr. King replied in his "Elogium famæ inſerviens Jacci Etonenſis, or Gigantis; or, the Praiſes of Jack of Eton, commonly called Jack the Giant; collected into Engliſh metre, after the manner of Thomas Sternhold, John Hopkins, John Burton, and others. To which is added, a Diſſertation on the Burtonian Style, by a Maſter of Arts." But the moſt ſevere attack on Dr. Burton's ſtyle, as affected and pedantic, was that of Churchill in one of his poems, (works, vol. iii. p. 124,) who has exerciſed all the uncandid ſeverity of his pen to expoſe it to ridicule. However, prejudice cannot deny, that Dr. Burton was "an able divine, a ſound ſcholar, and an excellent academic; and that he ſet an uſeful example to univerſity-men, whether as fellows, tutors, or officers, editors. In ſhort, his abilities, virtues, and learning were ſuch as juſtly entitle him to have his name tranſmitted with honour to poſterity." Biog. Brit.

Burton, John, the ſcholar of Keeble, a harpſichord player, with a powerful hand, and much enthuſiaſm in his art; but having in his youth exerciſed his hand more than his head, he was not a deep or correct contrapuntiſt. He had, however, in his pieces and manner of playing them a ſtyle of his own, to which, from his having been one of the firſt harpſichord players in our country, who attempted expreſſion and light and ſhade, he excited an intereſt and attention, which would now perhaps be much more difficult to obtain.

Travelling into Italy, with Mr. Beckford, at the time when the Mall'aria raged, he became a victim, about 1779, to the imprudence of paſſing from Rome to Naples on the verge of the Pontine marſhes, in ſpite of the admonitions of the native inhabitants.

Burton, or **Burton** *in Kendal*, in *Geography*, a ſmall market-town on the borders of Lancaſhire, in the county of Weſtmoreland. Here are ſome good houſes and two large inns, ſituated on the great turnpike road. It derives ſome advantages from travellers; and from the canal, lately brought here, by which a commercial communication is opened with the rivers Dee, Merſey, Trent, Derwent, Humber, Severn, &c. Here are a ſmall market on Tueſdays, and one fair annually. It is 251 miles N.W. from London, and contains 128 houſes, and 548 inhabitants. Houſman's Topographical Deſcription of Cumberland, &c. 8vo. 1800.

Burton-*upon-Trent*, is an ancient and large market-town of Staffordſhire, England. It is ſituated in a pleaſant and fertile valley on the banks of the river Trent, which ſeparates

rates this part of the county from Derbyſhire. This town has long been celebrated for its ale breweries and malt-houſes. The Burton ale is a beverage in high repute at moſt of the large towns of England, and is exported to different places on the continent. It is commonly of a thick and glutinous quality, of a ſweetiſh taſte, and a ſmall quantity produces inebriation with thoſe perſons not accuſtomed to it (vide Ale). Among the manufactures of this place are hats, which are made in large quantities for the army, navy, &c.; ſcrews, ſpades, and other iron utenſils, are alſo made here; as are ſome tammies and woollen cloths. Three extenſive cotton manufactories are eſtabliſhed in the vicinity of the town; and about half a mile diſtant on an iſland, is a conſiderable forge, for converting bloom and ſcrap iron into bars. The river Trent has long been made navigable from Gainſborough to this town for boats of large burthen. The Burton boat company are proprietors of this navigation, and of many boats on the grand trunk canal. This paſſes parallel with the town, and at about one mile diſtance communicates with the Trent.

Burton, in the time of Leland, had "one pariſh church, a chapel at the bridge end," and was noted for its marble and alabaſter works. Here is a long bridge of 36 arches, which croſſes the Trent, and was, according to Mr. Gough, "built in the time of Henry II., or earlier." The pariſh church, built in 1722, adjoins the abbey, which was founded by Wulfric Spot, in 1004, for Benedictines. Some of its ancient walls remain, but are altered and fitted up as the manor houſe. Its abbot had a large piece of hilly ground, about one mile from the abbey, which he called Sinai. This ſtill bears the name of Sinai park. Burton was formerly ornamented with a caſtle, which, Mr. Gough ſays, was built by one of the Ferrars' family, in the time of the conqueror. Here are a free ſchool, two alms-houſes, and a town-hall, the latter of which was built in 1772, by the earl of Uxbridge, who is lord of the mannor, and holds his courts-leet, &c. in this ſtructure. The town has, within a few years, been greatly improved by the paving and lighting of its ſtreets. It has a large market on Thurſdays, and four fairs annually, one of which continues for five days, and is noted for its large ſhew of horſes. Burton is 125 miles N.W. from London, and contains 738 houſes, with 3678 inhabitants, the greater part of whom are engaged in trade and manufactures. Gough's edition of Camden's Britannia, vol. ii. Shaw's Hiſtory of Staffordſhire.

Burton, a ſmall townſhip of America, in Grafton county, New Hampſhire, incorporated in 1766, and containing 141 inhabitrnts.—Alſo a townſhip in the Britiſh province of New Brunſwick, ſituated in Sunbury county, on the river St. John.

Burton, in *Sea Language*, a ſmall tackle conſiſting of two ſingle blocks, and a rope paſſing through them, until it becomes three or four fold. It is employed in loading or diſcharging goods, as bales, caſks, &c. and in removing the anchors, or any weighty body, on deck, in ſetting up the fop-maſt rigging, &c.

BURUGERD, in *Geography*, a town of Perſia, in the province of Irak-Agemi; 92 miles S.E. of Amadan.

BURULUK, a town of Ruſſia, in the government of Voronetz; 96 miles S.W. of Voronetz.

BURUN, a town of European Turkey, in the province of Romania; 50 miles E. of Emboli.

BURUNNIUTAPCHARA, a cape in the Caſpian ſea, 112 miles S.of Guriev. N. lat. 52° 50′. E. long. 63° 14′.

BURWAH, a town of Hindooſtan, in the country of Bahar; 155 miles S. of Patna. N. lat. 23° 10′. E. long. 84° 30.

BURY, is ſometimes uſed to denote the hole or den of ſome animal under ground. See Burrow.

In which ſenſe we ſay the bury of a mole, a tortoiſe, or the like. The *gryllotalpa*, or mole cricket, digs itſelf a bury with its fore feet, which are made broad and ſtrong for that purpoſe. Naturaliſts ſpeak of a kind of urchins in the iſland of Maraguan, which have two entries to their buries, one towards the north, the other to the ſouth, which they open and ſhut alternately, as the wind happens to lie.

Bury, in *Geography*, a market town of Lancaſhire, England, is ſeated in a fine valley on the banks of the river Irwell, at the diſtance of 195 miles N.W. from London, and 9 miles N. of Mancheſter. Situated in the midſt of a great manufacturing diſtrict, moſt of its houſes and inhabitants are appropriated to and engaged in the cotton works. Leland mentions Bury as being only a poor market-town, in his time, but it has now acquired conſiderable wealth and commercial importance; which has partly ariſen from the laudable exertions of Sir Robert Peele, bart. who, having a ſeat at Chamber-hall, in this neighbourhood, has eſtabliſhed and promoted ſome large manufactories for calico printing, &c. The principal of theſe works, under the firm of Peele and Co. are ſituated on the ſide of the Irwell, from which they have large reſervoirs of water.

The cotton manufactories, which are now ſo very flouriſhing in this diſtrict, appear to have been brought here from Bolton. Since their eſtabliſhment at Bury, they have been greatly facilitated and promoted by means of various ſcientific and mechanical contrivances, which Sir Robert Peele has encouraged. Among the inventions that have been brought forward under his patronage, is one called the wheel, or flying ſhuttle, invented many years ago, and the card making machine which was firſt invented by Mr. Robert Kay, and is formed for making ſeveral cards at once. It ſtraightens the wire out of the ring, cuts it into lengths, ſtaples it, crooks it into teeth, pricks the holes in the leather, puts the teeth in, row after row, and performs the whole with a ſingle operation of the machine, in an expeditious manner, by one perſon turning a ſhaft and touching neither the wire nor the leather.

The pariſh of Bury is large, and divided into ſix townſhips, and has four chapels of eaſe, beſides a modern handſome church in the town. The preſbyterians, independents, and methodiſts have alſo places of worſhip. Here is a handſome free-ſchool, well endowed, and provided with two maſters; alſo a charity ſchool for boys and girls. About one half of the town is leaſehold, under the earl of Derby, and the remainder is glebe belonging to the rectory. The living, in the gift of that earl, is rendered very valuable from the following circumſtance: an act of parliament paſſed in 1764, empowering the rector, for the time being, to grant building leaſes for 99 years, renewable at any intervening period, on an agreement between the parties. The relative population of Bury, and its preſent extent, may be eſtimated from comparing the accounts of each in 1773 and 1801. In the former period there were 463 houſes and 2090 inhabitants, and at the latter, according to the report of the houſe of commons, 1384 houſes and 7072 inhabitants.

According to tradition there were two caſtles in and near this town. Indeed, its name partly confirms this; and at the weſt end of the town is a field called *Caſtle croft*, where foundation walls have been dug up. At *Caſtle ſteads* in Walmſley was an encampment; and near it is an eminence called Caſtle-hill. Aikin's Deſcription of the Country round Mancheſter, 4to. 1795.

Bury *St. Edmund's*, is a large, populous, and ancient borough town in the county of Suffolk, England, and ſeated on the ſide of a hill, which ſlopes gently to the river Larke. This place obtained its preſent name and principal importance from the relics of king Edmund, who being barbarouſly murdered by the Danes at Hoxne in this county, was proclaimed a royal martyr, and his ſhrine became an object of great veneration in the time of Britiſh monachiſm. Though a monaſtery had been previouſly founded here by Sigebert, king of the Eaſt Angles, yet it does not appear that this monarch's eſtabliſhment excited any notoriety, or attracted many inhabitants. The abbey founded here in honour of St. Edmund, was raiſed by Ayllwin, about the year 903, but was afterwards augmented by additional endowments, and enlarged in buildings. Nearly the whole was, however, deſtroyed by Sweyn king of Denmark, whoſe ſon Canute rebuilt the abbey, and reſtored the town to its former importance. Previous to this event, it appears that the town was known by the name of Beodrichworth. Canute offered up his crown at the ſhrine of St. Edmund, as did many other Engliſh kings his ſucceſſors. The church and monaſtery appear to have been rebuilt in the year 1020, and the former was conſecrated on St Luke's day, A.D. 1032, by Agelnothus, archbiſhop of Canterbury. From this period it grew into great repute, and ſeveral monarchs, with many eminent perſons, were deſirous of being interred in this holy place. During the proſperity of the abbey, it was environed with a ſtrong wall and ditch, and there was an hoſpital, or religious houſe, at every gate of the town. Among theſe, the abbey-gate, or entrance to the abbot's palace, is the principal ſtructure remaining; and this is an intereſting relic of architectural antiquity. It was erected in the reign of Richard II. about the year 1377, and at preſent is in a good ſtate of preſervation. Its weſtern front is adorned with ſeveral niches and carvings in tabernacle work, &c. Another of theſe ſtructures, called Church-gate, or the portal, is remaining, and formerly led to the grand conventual church. It now ſerves as a tower to St. James's church, and is ſupported on two ſemicircular arches, which admit of a free paſſage for carriages.

The town of Bury St. Edmunds, with its ſuburbs, extends from north to ſouth, about 1½ mile, and in breadth 1¼ mile. It is divided into five wards, and contains 34 ſtreets, which are well paved, and interſect each other at nearly right angles. While the abbey was ſtanding, there were three churches within its precincts, beſides the one belonging to the monaſtery. That dedicated to St. Margaret is now made uſe of, with conſiderable alterations, as the ſhire-hall, where the county aſſizes are held. The two other churches "are deſervedly eſteemed for their exact and beautiful ſymmetry, their large and elegant windows, neat pillars, and noble roofs." In the church of St. Mary, it appears that Mary Tudor, third daughter of Henry VII. and wife of Lewis XII. king of France was interred. After the deceaſe of the latter monarch, ſhe married Charles Brandon, duke of Suffolk, and died in his life time at Weſthorpe in this county.

Bury has, at different times, been the ſeat of the Engliſh ſovereign, and the place of aſſembling his parliaments. King Edward I. and Edward II. had mints here; and Stow ſays that here was alſo a mint in king John's time. Among the other public buildings and eſtabliſhments of the town, are the guildhall, the wool-halls, the gaol, the bridewell, the theatre, the market-croſs, the butchery, and new ſhambles, the ſubſcription rooms, the free grammar ſchool, and four meeting-houſes.

Bury has the privilege of three annual fairs, one of which uſually continues for three weeks. Here are alſo two weekly markets on Wedneſdays and Saturdays. In 1758, the number of inhabitants in this town was 5,819, and in 1801, they appear to have increaſed to 7,655. Though the population has thus evidently greatly increaſed, yet at ſome former periods many inhabitants have been ſwept away by the plague, &c. Mr. Nichols, in his Hiſtory of Leiceſterſhire, ſtates that 1000 perſons died of the plague in Bury in 1257, and in 1638 upwards of 600 perſons died of this dreadful calamity.

Bury was firſt privileged to ſend members to parliament by king James I. who incorporated it in the fourth year of his reign; and by two other charters in the ſixth and twelfth years of his reign. The right of election is veſted in the aldermen, burgeſſes, and common-councilmen, amounting to 37. Gillingwater's Hiſtorical and Deſcriptive Account of St. Edmund's Bury, 12mo. 1804.

BURYING *alive*, was, among the Romans, the puniſhment of a veſtal (ſee Vestal), for the violation of her vow of chaſtity. After being tried and ſentenced by the pontifices, this puniſhment was inflicted and accompanied with funeral ſolemnities in a place called the "Campus Sceleratus," near the Porta Collina; and her paramour was ſcourged to death in the Forum. The unhappy prieſteſs was let down, on this occaſion, into a deep pit, with bread, water, milk, oil, a lamp burning, and a bed on which to lie; but this was mere ſhow, for the moment ſhe was at the bottom, they began to caſt in the earth upon her, till the pit was filled up. Mem. Acad. Inſcr. t. iii. p. 278. This mode of puniſhment is ſaid to have been firſt deviſed by Tarquinius Priſcus. Dionyſ. iii. 67. Lord Bacon mentions inſtances of the reſurrection of ſome perſons who had been buried alive. Of this number was the famous Duns Scotus. See Duns. For the places and different modes of burying, ſee Burial.

BURZANO, in *Geography*, a town of Naples, in the province of Calabria Ultra; 10 miles E.N.E. of Bova.

BURZET, a town of France, in the department of the Ardeche, and chief place of a canton in the diſtrict of l'Argentiere. The place contains 2670, and the canton 4945 inhabitants; the territory comprehends 110 kiliometres and 4 communes.

BUS, Cæsar de, in *Biography*, the founder of the Fathers of the Chriſtian doctrine, was born at Cavaillon in 1544, and after purſuing, for ſome time, a licentious courſe, became ſenſible of his miſconduct, entered into the church, and was appointed canon of a cathedral. Adopting a rigorous mode of living, and diſtinguiſhed by his zeal in inſtructing the ignorant, and exhorting ſinners to repentance, he formed a new inſtitution for teaching the principles of the Chriſtian religion. See Fathers *of the Chriſtian doctrine.* De Bus loſt his ſight ſome years before his death, which happened at Avignon in 1607. To him is alſo aſcribed the eſtabliſhment of the Ursulines in France. He publiſhed a ſet of "Familiar Inſtructions on the Chriſtian Doctrine," written in a ſimple ſtyle, and ſtill read by pious perſons. Nouv. Dict. Hiſt. Moſheim. Eccleſ. vol. iv.

BUSANCY, in *Geography*, a town of France, in the department of the Aiſne, and diſtrict of Soiſſons; 4 miles S. of Soiſſons.

BUSARD, in *Ornithology.* See *Moor* Buzzard.

BUSBEC, or Boesbec, Augher-Ghislen, in Latin *Buſbequius*, in *Biography*; a celebrated traveller and ambaſſador, was the natural ſon of Ghiſlen, lord of Boeſbec, a village on the Lys, and born at Commines, in Flanders, in 1522. Having been legitimated by a reſcript of the emperor Charles V., he purſued his ſtudies with great diligence and ſucceſs, in ſome of the moſt celebrated univerſities of Europe. He accompanied the ambaſſador of Ferdinand, king of the Romans, to England, and was preſent at the marriage of Philip and Mary; and was appointed by this ſovereign, when he became emperor, as his ambaſſador to ſultan Solyman II. During his ſeven years' reſidence in the Turkiſh dominions, he acquainted himſelf with various particulars relating to the natural and political hiſtory of the country, and collected a great number of MSS. and inſcriptions, together with drawings of plants and animals, which ſerved, on his return, to form a narrative, written in Latin, and abounding with valuable information. He was afterterwards entruſted with the education of the ſons of Maximilian II., and in 1570, conducted this emperor's daughter to France, on occaſion of her marriage with king Charles IX. After the death of Charles, he continued in that country as miniſter for the queen-dowager, and alſo for the emperor Rodolph, till the year 1592. Having obtained permiſſion to take a journey into the Low Countries, he was aſſaulted in Normandy by a party of ſoldiers belonging to the garriſon of Rouen, and the treatment he ſuffered produced a degree of irritation, which terminated in a fever that proved fatal to him at the houſe of a lady near Rouen, in 1592. He was a man of extenſive literature, and maſter of ſeven languages. The firſt copy of the famous "Monumentum Ancyranum", which he cauſed to be tranſcribed at Ancyra, was brought by him into Europe. Beſides his "Travels in the Eaſt," he wrote "Letters from France to the Emperor Rodolph," which exhibit an intereſting picture of the French court at that period. An edition of all his works was publiſhed by Elzevir at Leyden in 1633, and at Amſterdam in 1660, in 4to. Gen. Dict.

BUSBY, Richard, an eminent ſchool-maſter, was born at Lutton, in Lincolnſhire, in 1606, educated at Weſtminſter ſchool as a king's ſcholar, and elected ſtudent of Chriſt-church, in 1624. At college he was eſteemed a great maſter of the Greek and Latin languages, and a complete orator. Having taken orders, he was admitted, in 1639, to the prebend and rectory of Cudworth, in the church of Wells, and in 1640, he was appointed maſter of Weſtminſter ſchool, which office he held with ſingular reputation for 55 years. His talents for this arduous office have been greatly extolled; though it does not now appear what was his peculiar and diſcriminating excellence. It has been ſaid that he poſſeſſed a ſingular ſagacity in diſcovering the appropriate genius of his pupils, and that he ſo much approved an early manifeſtation of wit in his ſcholars, as to pardon the imprudent exerciſe of it, when he himſelf was its object. Perhaps, his pre-eminence to others who have occupied ſimilar ſtations might have principally conſiſted in the firmneſs and vigour of his mind and in that kind of uniform and ſyſtematic diſcipline, attended with a conſiderable degree of ſeverity, which commanded awe and maintained order. With a reference to this trait of his character, ſir Roger de Coverley (ſee Spectator, N° 329.) is made to exclaim, at the view of his effigies, "Dr. Buſby; a great man! he whipped my grandfather; a very great man!" Pope alſo gives us a lively deſcription of a maſter belonging to the Buſbeian claſs, or of the "Genius of the public Schools," in the following appropriate lines:

"When lo! a ſpectre roſe, whoſe index-hand
Held forth the virtue of the dreadful wand;
His beaver'd brow a birchen garland wears,
Dropping with infant's blood, and mother's tears.
O'er every vein a ſhudd'ring horror runs:
Eton and Winton ſhake through all their ſons.
All fleſh is humbled; Weſtminſter's bold race
Shrink, and confeſs the genius of the place;
The pale boy-ſenator yet tingling ſtands,
And holds his breeches cloſe with both his hands."
Dunciad, B. iv.

Dr. Buſby, however, though his fame has deſcended to us as that of a ſtrict and ſevere diſciplinarian, was not an ill-natured man; but the ſeverity which he exerciſed, and which has almoſt become proverbial, ſeems to have been the reſult of habit and ſyſtem. It has, indeed, been animadverted upon with diſapprobation by ſome modern writers, not only as unjuſtifiable, but as tending to the extreme of cruelty. Somewhat to this purpoſe is the reflection of Mr. Knox, in his eſſay on parental indulgence (Eſſays, vol. ii. p. 344.) who ſays, "Inhumanity even in a Buſby cannot admit of palliation." As a man of learning, Dr. Buſby is known by ſeveral books, ſuch as Latin and Greek grammars, and editions of the ſatires of Juvenal and Perſius, and of the epigrams of Martial, adapted to the uſe of his ſchool, and evincing his ſkill and accuracy as a grammarian. After the reſtoration, he was made a prebendary of Weſtminſter, as well as treaſurer and canon reſidentiary of the church of Wells; and in the ſame year he alſo took his degree of doctor in divinity. To the church and monarchy he was zealouſly attached, and he infuſed ſimilar principles and ſpirit into the minds of his pupils, among whom were ſeveral who occupied ſome of the higheſt offices in the ſtate. Several inſtances of his private and public charity are recorded. Having, by a courſe of temperance, notwithſtanding the fatigues of his public ſtation, attained to the advanced age of 89, he died in 1695, and was buried in Weſtminſter abbey, where a monument, with an ample, laudatory inſcription, was erected to his memory. Biog. Brit.

BUSCA, in *Geography*, a town of Italy, in the province of Coni; 7 miles W. of Coni.

BUSCHE, Herman Von Dem, in Latin *Buſchius*, in *Biography*, a diſtinguiſhed ſcholar who contributed to the revival of literature, and the improvement of taſte in Germany, was the deſcendant of a noble family in Weſtphalia, and born at the caſtle of Saſſenborg in the biſhopric of Minden, in 1468. After a previous courſe of ſtudy improved by travels through Italy, France, and Germany, and various attempts to excite among his own countrymen a taſte for pure Latinity, he eſtabliſhed a ſchool at Cologne; but here his reſidence was made uneaſy to him by the monks, ſo that in 1506 he removed to Leipſic. The eccleſiaſtics, however, whoſe Latin ſtyle he condemned, and which he wiſhed and laboured to reform, counteracted his efforts of improvement, and he was under a neceſſity of often changing his abode. At Cologne, whither he returned after his travels in Germany and the Low Countries, he publiſhed "Pemptades Decimationum Plautinarum" and a "Commentary on Claudian de Raptu Proſerpinæ." The clergy again moleſted him in this city, as he had given them freſh occaſion of offence by aiding Ulric Von Hutton in compoſing the celebrated "Epiſtola Obſcurorum Virorum," in which the monaſtic Latin of that period is the ſubject of ridicule. From Cologne, he removed to Weſel, where, as rector of the Latin ſchool, he read the works of Luther, Melancthon, and Pomeranus, which had been juſt publiſhed. From Weſel he went to Wittenberg; and, at the recommendation of Luther and others, the landgrave of Heſſe appointed him profeſſor of hiſtory at Marpurg, where he publiſhed "A Treatiſe on the Authority of the Word of God." About this time he embraced the doctrines of Luther, and married in the year 1527. Towards the cloſe of his life, he had an unhappy quarrel with the anabaptiſts at Munſter, which agitated a conſtitution, already enfeebled by years, to ſuch a degree, as to occaſion his death, in 1534. His principal works are "Commentar. in Donatum;" "Annot. in Silium Italicum;" "Comment. in primum lib. Martialis;" "Scholia in Æneid;" "Annot. ad Juvenal;" "Epigrammatum, libri iii.;" "Comment. in Satyr. Perſii," Paris, 1644. He alſo publiſhed many Latin poems. According to the account given of his writings by Eraſmus, they are nervous, lively, and animated, and diſplay great acuteneneſs of judgment; and his ſtyle is ſaid to approach nearer to that of Quintilian than to that of Cicero. Gen. Biog.

BUSCHETTO, DA DULICHIO, a celebrated Greek architect, was a native of the iſle of Dulichio, and employed, in 1016, by the republic of Piſa, in building and ornamenting their dome or cathedral church; which he enriched with many marble columns, and which has ever ſince been reckoned one of the moſt ſumptuous edifices in Italy. He died at Piſa, where was erected a monument to his memory, bearing an inſcription which intimates his extraordinary knowledge of the mechanic powers. His diſciples were numerous, and he is regarded as the principal founder of the ſcience of architecture in modern Italy. Felibien, Vies des Archit.

BUSCHING, ANTHONY-FREDERICK, a well-known geographer, was born at Stadthagen, a town of Germany, in 1724, and inſtructed for ſeveral years by Hauber, afterwards paſtor of a German congregation at Copenhagen, in the Greek, Chaldaic, and Syrian languages, and alſo in aſtronomy, algebra, and other branches of the mathematics. In 1744, he entered as a theological ſtudent at Halle, where he derived ſingular benefit from the patronage of the celebrated profeſſor S. J. Baumgarten; and in 1746, he publiſhed his firſt work, which was "An introduction to the Epiſtle of Paul to the Philippians," with a preface by his patron. At the cloſe of his academical ſtudies be began his exegetical lectures on Iſaiah, which were followed by thoſe on the New Teſtament. In 1748, he was invited to ſuperintend the education of the eldeſt ſon of count Lynar, at Koſtritz; where he was alſo employed in reviſing a German edition of Vitringa on Iſaiah, and where he commenced an extenſive correſpondence with perſons of eminence in the literary world. In the following year he accompanied count Lynar to Peterſburgh; and in the courſe of his journey thither he formed the plan of a new geography, with a view of ſupplying the imperfections of Hubner's and Hager's works on this ſubject. After encountering ſome difficulties and diſcouragements in the progreſs of his undertaking, he determined to devote his whole time to it; and releaſing himſelf from his engagements as tutor, repaired, in 1752, to Copenhagen, where he enjoyed peculiar advantages for the completion of his work. During his reſidence in this city, he conducted a monthly publication, in which he gave an account of the ſtate of the arts and ſciences in Denmark. In 1754, he removed to Germany, and at Halle wrote a diſſertation, entitled "Vindiciæ Septentrionis," announcing alſo his intention to commence a courſe of lectures on the conſtitution of the principal ſtates of Europe; but he was diverted from proſecuting this plan by an invitation to the office of extraordinary profeſſor of philoſophy at Gottingen, with a ſalary of 200 rix-dollars to enable him to finiſh his geography. Accordingly, he accepted the invitation, and having ſettled at Gottingen, in 1754, he married in the following year a literary lady, ſeveral of whoſe poetical pieces he had previouſly publiſhed. This lady had been elected an honorary member of the German ſociety at Gottingen, and had alſo been named imperial poeteſs laureat by Haberlein, pro-rector of the univerſity of Helmſtadt. In the proſpect of a vacancy in the chair of theological profeſſor in, the univerſity of Gottingen by the death of Moſheim, Buſching was adviſed by his friends, in 1755, to offer himſelf as a candidate; but as he had conceived a diſlike to the theology of the ſchools, he thought it moſt honourable to announce his ſentiments to the public, before he undertook the office of theological profeſſor. Accordingly, on occaſion of his applying to the theological faculty of Gottingen for the degree of doctor, he delivered to them, in MS., his "Epitome theologiæ e ſolis ſacris literis concinnatæ, et ab omnibus rebus & verbis ſcholaſticis purgatæ," which he afterwards printed; and, after ſome oppoſition, he obtained the degree. This diſſertation was afterwards reprinted with additions; and as it contained ſome points of doctrine that were thought exceptionable, he was accuſed of heterodoxy, and ordered by a reſcript iſſued in 1757, to forbear publiſhing any thing on the ſubject of theology, till it had been ſubmitted to the inſpection of the privy-council of Hanover; and he was alſo commanded to abſtain from giving theological lectures, particularly on diſputed ſubjects. He remonſtrated againſt this treatment, and in a letter to Munckhauſen, the Hanoverian miniſter, he expreſſed his purpoſe in the following declaration: "If your excellency ſhould make me chancellor of the univerſity, with a ſalary of a thouſand dollars, on condition of my teaching nothing but the uſual theology of the ſchools, I would reſpectfully refuſe your offer." At this time Buſching had a ſalary of 400 dollars at Gottingen, beſides pecuniary preſents from the miniſter, and ſome privileges, which enabled him to expedite his great geographical works. In 1759, he was appointed public profeſſor of philoſophy, and the firſt part of his geography had already gone through three editions. He was now at leiſure to proſecute it; and, that he might not be interrupted, he declined accepting ſeveral advantageous offers. On the ſubject of education he had publiſhed a treatiſe, compiled from his lectures at Gottingen, which very much contributed to his reputation. In 1761, he undertook the office of paſtor to a Lutheran congregation at Peterſburgh; and here he founded a ſchool on a large ſcale for the benefit both of boys and girls. To this ſchool he paid particular attention; and in 1763, it had riſen to ſuch reputation, that it contained upwards of 300 ſcholars of various nations and ſects; and Catharine II. granted to it, by the recommendation of field-marſhal count Munich, ſeveral privileges. But on occaſion of a diſpute between Buſching and his congregation reſpecting this new inſtitution, he abandoned the direction of it, and determined to return to Germany; though the empreſs Catharine was very deſirous of retaining him in Ruſſia. Among other connections which he formed during his reſidence at Peterſburgh, he contracted an intimacy with Muller, the celebrated hiſtorian and traveller; and from the information he thus obtained with regard to Ruſſia, he was enabled to publiſh his "Hiſtorical Magazine." The place which he ſelected for his reſidence, with a view to the proſecution of his literary labours, was Altona; and here he continued, declining ſome advantageous propoſals, made to induce his return to Gottingen, and reſolving never to accept a penſion, till the year 1766, when he was appointed director of a gymnaſium at Berlin. In this capital he was treated with great reſpect; and beſides the employment of ſuperintending the ſeminary committed to his care, he engaged in writing various elementary treatiſes for the uſe of the different claſſes in the Latin and French languages, natural hiſtory, the hiſtory of religion, the fine arts, &c.; which were favourably received by the public. His inceſſant application, however, impaired his health, and brought on a pulmonary complaint with which he was afflicted for ſeveral years, and which terminated his uſeful life, in 1793, after he had been director of the gymnaſium at Berlin for 26 years. He was buried in his garden at mid-night, without pomp or ceremony, according to his own deſire expreſſed in his will. In his own delineation of his character, he acknowledges, that though he was candid and open-hearted, affable, ready to aſſiſt others, and of a compaſſionate diſpoſition, he had behaved with harſhneſs to many perſons, and on various occaſions. He expreſſes his confidence in the Supreme Being, his firm faith in the Saviour of the world, and his ſatisfaction with the diſpenſations of providence. His temper, he ſays, was warm, and occaſionally irritable; and his firmneſs had ſometimes aſſumed the appearance of obſtinacy; and his quickneſs had betrayed him occaſionally into precipitation. "I am moderate," ſays he, "in all things; contented with little, and maſter of my appetites. In my intercourſe with the world I expect too much from myſelf; I am therefore often diſſatisfied with my own conduct; and on that account wiſh to confine my intercourſe within a very narrow circle, and to ſhun ſociety. I am free from pride, but not void of ambition, though I often ſtruggle with this paſſion, and on reflection endeavour to ſuppreſs it. I am ſo much attached to labour, that it ſeems to me a requiſite to life, and that my impulſe to it is greater than to any ſenſual pleaſure whatever."

Buſching was a ready writer, ſo that his literary productions amounted to more than a hundred, conſiſting of elementary books, relating to ſchools and education, and ſuch as were theological, hiſtorico-geographical, and biographical. Although his works poſſeſs conſiderable merit, they abound with repetitions, and his ſtyle is diffuſe and inelegant. But the department in which he principally excelled was that of geography. His "Geography" comprehending Europe and the Ruſſian part of Aſia, contains a variety of intereſting and uſeful information; and was publiſhed after the year 1754, at different periods, in ſingle volumes, of which eight editions were publiſhed during the life of the author. His "Magazine for Modern Hiſtory and Geography" was compriſed in 22 parts, 4to. and publiſhed between the years 1767 and 1788: and his "Weekly Account of new Maps" appeared in detached parts, during an interval of 15 years, from 1773 to 1787. Gen. Biog.

BUSCHOFF, in *Geography*, a town of the duchy of Courland; 8 miles S. of Seelburg.

BUSCHWEILER, a town of France, in a diſtrict of the ſame name, in the department of the Lower Rhine, formerly Alſace.

BUSE, in *Ornithology*. See Falco Buteo.

BUSELAPHUS, *Caji*, in *Zoology*. See Antilope Bubalis.

BUSENTO, in *Geography*, a river of Italy, which runs into the ſea, near Policaſtro.

BUSEY, a town of the iſland of St. Domingo, ſituate near Port-au-Prince, and having a fort.

BUSH, a tuft or aſſemblage of boughs or branches.

Bush alſo denotes a coronated frame of wood hung out as a ſign at taverns. It takes the denomination from hence, that, anciently, ſigns where wine was ſold were *buſhes* chiefly of ivy, cypreſs, or the like plants, which keep their verdure long. And hence the Engliſh proverb "Good wine needs no *buſh*."

Bush, in *Geography*, the name of a river in Ireland, which after taking a winding courſe through the northern part of the county of Antrim, falls into the north channel about a mile weſt of the Giant's Cauſeway.

Bush-*town*. See Harford.

Bush-*harrow*, in *Agriculture*, an implement conſtituted of any ſort of buſhy wood, interwoven in a kind of frame conſiſting of three or more croſs bars, fixed into two end-pieces in ſuch a manner as to be wider behind than before, and very rough and bruſhy underneath. To the extremities of the frame before are generally attached two wheels, about eight or twelve inches in diameter, upon which it moves; ſometimes, however, wheels are not employed, but the whole rough ſurface is applied to, and dragged on the ground. See Harrow.

Bush *harrowing*, the operation of harrowing with an inſtrument of the kind deſcribed above. It is chiefly neceſſary on graſs-land, or ſuch as has been long in the ſtate of paſture, for the purpoſe of removing the worm-caſts and of breaking down and reducing the lumps and clods of the manures that may have been applied, and thereby rendering them more capable of being waſhed into the ground, or, in ſome meaſure, for removing the moſſy matter that may have formed on the ſurfaces of ſuch lands.

A rather dry time ſhould be choſen for the performing of the buſineſs, in order that theſe ſubſtances may be in a more pulverizable ſtate, and of courſe more readily broken down and applied to the roots of the graſs plants. It ſhould never be attempted when there is ſuch a degree of moiſture as to produce cloggineſs.

Bush-*vetch*, a plant of the vetch kind, which may probably be cultivated to advantage by the farmer, where lucerne and other plants of a ſimilar nature cannot be grown. It is obſerved by Mr. Swayne, in the third volume of the letters and papers of the Bath Society, that "its root is perennial, fibrous, and branching; the ſtalks many, ſome of them ſhooting immediately upwards, others creeping juſt under the ſurface of the ground, and emerging, ſome near to, and others at a conſiderable diſtance from the parent ſtock. The ſmall oval leaves are connected together by a midrib, with a tendril at the extremity: the flowers are in ſhape like thoſe of the common vetch, of a reddiſh purple colour; the firſt that bloſſom uſually come in pairs, afterwards to the number of four at a joint; the pods are much ſhorter than thoſe of the common vetch, larger in proportion to their length, and flatter, and are of a black colour when ripe; the ſeeds are ſmaller than thoſe of the cultivated ſpecies, ſome ſpeckled, others of a clay colour." Being a perennial plant, it ſhould ſeem, he thinks, "to be a very proper kind to intermix with graſs ſeeds for laying down land intended for paſture; and that it is as juſtly entitled to this epithet as any herbaceous plant whatever, having obſerved a patch of it growing in one particular ſpot of his orchard for 14 or 15 years paſt. It is not only a perennial, but an evergreen; it ſhoots the earlieſt in the ſpring of any plant eaten by cattle with which he is acquainted, vegetates late in autumn, and continues green through the winter, though the weather be very ſevere; add to this, that cattle are remarkably fond of it." See Vicia.

Theſe peculiarities ſhould make it particularly valuable to the farmer as a green food for ſheep in the winter and ſpring, when food of that denomination is ſo exceedingly ſcarce.

The ſame writer has likewiſe obſerved, that, "the chief reaſon which has hitherto prevented its cultivation has been the very great difficulty of procuring good ſeed in any quantity. The pods," he finds, "do not ripen altogether; but as ſoon almoſt as they are ripe, they burſt with great elaſticity, and ſcatter the ſeeds around; and after the ſeeds have been procured, ſcarce one-third part of them will vegetate, owing," as he ſuppoſes, "to an internal defect, occaſioned by certain inſects making them the neſts and food for their young."

It appears from this author's account alſo, that a crop of this kind of vetch "may be cut three or four times, and in ſome caſes even ſo early as the beginning of March;" a circumſtance of much importance to ſuch farmers as have a large ſtock of cattle. In his trials with this plant, cut in this way, a plat of good ſtiffiſh loamy land, of twenty-five ſquare yards, produced,

1ſt cutting,	16lb.	green,	ſuppoſed	4lb.	dry.
2d do.	130	do.	would have weighed	21½	dry.
3d do.	62	do.	would have weighed	14	dry.
4th do.	76½	do.	would have weighed	12½	dry.
Total	284½	green.		52	dry.

An acre, therefore, ſays he, reckoning 4840 ſquare yards to it, in the ſame circumſtances, would have produced the total amount of

Tons	cwt.	qrs.	lb.	
24	11	3	3	green.
4	9	3	15	dry-fodder.

And it is further added, "that at the time the firſt cutting was made there was ſcarce a green blade of graſs to be ſeen; and that the ſeaſon, till after the third cutting, was as unfavourable to vegetation as perhaps any in the memory of man."

It is ſaid to ſucceed beſt on ſoils of the clayey kind; but from the ſtems riſing ſo cloſely together there is danger, in moiſt ſeaſons, of their rotting at the root. See Vetch.

Bush, *burning*, in *Scripture Hiſtory*, denotes that buſh in which God manifeſted himſelf to Moſes at the foot of mount Horeb, as he was feeding the flocks of his father-in-law, by the ſchechinah or ſymbol of his preſence in a flame of fire. Exod. chap. iii. The emblem of the burning-buſh is uſed as the ſeal of the church of Scotland, with this motto: "Tho' burning, is never conſumed."

Bush-*lime*, among *Bird-Catchers*, denotes an arm or bough of a buſhy tree, full of thick and long, yet ſmooth and ſtraight twigs, daubed over with bird-lime, and placed on ſome hedge where birds frequent, uſed eſpecially for the taking of pheaſants and fieldfares. See Bird-*lime*.

BUSHEER, or Abuschæhhr, in *Geography*, the capital of an independent ſtate of Arabia of the ſame name, near the Perſian gulph, poſſeſſing a commodious harbour, in which ſhips can approach cloſe to the houſes. This circumſtance induced Nadir Shah to ſtation a fleet here. Since that time, this city has been better known, and become more conſiderable. It is at preſent the ſea-port town of Schiras; and the Engliſh, the only European nation who continue to trade with Perſia, have a factory in this place. The Arabs inhabating the diſtrict of Abuſchæhhr are not of the tribe of Houle, who poſſeſs all the ports on the whole coaſt from Bender Abbas to Cape Berdiſtan. Among them are three eminent families; the two firſt of which have been, from time immemorial, ſettled in this country. The third, named "Matariſch," came lately from Oman, where they were employed in fiſhing, entered into alliance with the other two, and found means to uſurp the ſovereign authority, which they have now held for ſeveral years. The preſent ſcheich of this family poſſeſſes likewiſe the iſle of Bahrein, by which he is enabled to maintain ſome ſhipping, and he has alſo conſiderable domains in Kermeſir. By abandoning the Sunnites, becoming a Shiite, and marrying a Perſian lady, he had rendered himſelf odious to his ſubjects and neighbours; and his children are no longer reckoned among the Arabian nobility. Abu-ſchæhhr lies ſouth from Bender-Rigk, which ſee.

BUSHEL, a meaſure of capacity for things dry; as grains, pulſe, dry fruits, &c. containing four pecks, or eight gallons, or one eighth of a quarter.

Du-Cange derives the word from *buſſellus*, *buſtellus*, or *biſſellus*, a diminutive of *buz*, or *buza*, uſed in the corrup- Latin for the ſame thing: others derive it from *buſſulus*, an *urn*, wherein lots were caſt; which ſeems to be a corruption from *buxulus*.

Buſſellus appears to have been firſt uſed for a liquid meaſure of wine, equal to eight gallons. "*Octo libræ faciunt galonem vini, & octo galones vini faciunt* buſſellum *London, quæ eſt octava pars quarterii.*" The word was ſoon after transferred to the dry meaſure of corn of the ſame quantity. "*Pondus octo librarum frumenti facit* buſſellum, *de quibus octo conſiſtit quarterium*"

By 12 Henry VII. cap. 5. a buſhel is to contain eight gallons of wheat: the gallon, eight pounds of wheat, troy weight; the pound, twelve ounces troy-weight; the ounce, twenty ſterlings; and the ſterling, thirty-two grains, or corns of wheat growing in the midſt of the ear.

This ſtandard buſhel is kept in the Exchequer; when, being filled with common ſpring water, and the water meaſured before the houſe of commons in 1696, in a regular parallelepiped, it was found to contain 2145.6 ſolid inches; and the ſaid water, being weighed, amounted to 1131 oz. and 14 penny weights troy. Greaves, Orig. of Weights, p. 25.

By act of parliament made in April 1697, it was determined, that every round buſhel with a plain and even bottom, being made 18½ inches wide throughout, and eight inches deep, ſhould be eſteemed a legal "Wincheſter buſhel," according to the ſtandard in his majeſty's exchequer. A veſſel thus made will contain 2150.42 cubic inches; and conſequently the corn gallon contains only 268⅘ cubic inches. Ward's Mathematics, p. 36.

Beſides the ſtandard or legal buſhel, we have ſeveral local buſhels, of different dimenſions in different places. At Abingdon and Andover, a buſhel contains nine gallons; at Appleby and Penrith, a buſhel of peaſe, rye, and wheat, contains 16 gallons; of barley, big, malt, mixt malt, and oats, 20 gallons. A buſhel contains at Carliſle, 24 gallons; at Cheſter, a buſhel of wheat, rye, &c. contains 32 gallons, and of oats 40; at Dorcheſter, a buſhel of malt and oats contains 10 gallons; at Falmouth, the buſhel of ſtricken coals is 16 gallons, of other things 20, and uſually 21 gallons; at Kingſton upon Thames, the buſhel contains eight and a half, at Newbury, 9; at Wycomb and Reading, eight and three fourths; at Stamford, 16 gallons. Houghton. Collect. tom. i. n. 46. p. 42. At Paris, by the old meaſures, the buſhel was divided into two half buſhels; the half buſhel into two quarts; the quart into two half quarts; the half quart into two litrons; and the litron into two half litrons. By a ſentence of the provoſt of the merchants of Paris, the buſhel was to be eight inches two lines and an half high, and ten inches in diameter; the quart four inches nine lines high, and ſix inches nine lines wide; the half quart four inches three lines high, and five inches diameter; the litron three inches and an half high, and three inches ten lines in diameter.—Three buſhels made a minot, ſix a mine, twelve a ſeptier, and an hundred and fourty-four a muid.

In other parts of France, the buſhel varied: fourteen one eighth buſhels of Amboiſe and Tours made the Paris ſeptier. Twenty buſhels of Avignon made three Paris ſeptiers. Twenty buſhels of Blois made one Paris ſeptier. Two buſhels of Bourdeaux made one Paris ſeptier. Thirty-two buſhels of Rochel made nineteen Paris ſeptiers. Oats were meaſured in a double proportion to other grains; ſo that twenty-four buſhels of oats made a ſeptier, and 248 a muid. The buſhel of oats was divided into four

picotins

cotins, the picotin into two half quarts, or four litrons. For ſalt four buſhels made one minot, and ſix a ſeptier. For coals eight buſhels made one minot, ſixteen a minc, and 320 a muid. For lime, three buſhels made a minot, and forty-eight minots a muid. See Measure and Weight.

By 31 G. III. c. 30. the buſhel by which all corn ſhall be meaſured and computed for the purpoſes of this act, ſhall be the Wincheſter buſhel, and a quarter ſhall be deemed to conſiſt of 8 buſhels: and the juſtices of each county, and the mayor of ſuch cities and towns as are counties of themſelves, or enjoy exempt juriſdictions, and from which returns are by this act directed to be made, ſhall cauſe a ſtandard Wincheſter buſhel to be provided and kept; and all meaſures ſhall be computed by the ſtricken and not by the heaped buſhel: and where corn ſhall be ſold by weight, 57lbs. avoirdupoiſe of wheat ſhall be deemed equal to one Wincheſter buſhel; and 55lbs. of rye; 49lbs. of barley; 42lbs. of beer or bigg, and 38lbs. of oats; and further, 56lbs. of wheat-meal, 45lbs. of wheat-flour, 53lbs. of rye-meal, 48lbs. of barley-meal, 41lbs. of beer or bigg meal, and 22lbs. of oat-meal, ſhall be deemed equal to every ſuch buſhel of corn unground. And for the more eaſy meaſuring ground corn in ſacks, the proper officer may make choice of and weigh two ſacks out of any number not exceeding twenty, and ſo in proportion; and thereby compute the quantity of the whole. And the inſpector of corn returns ſhall make a compariſon between the Wincheſter meaſure and that commonly uſed in the city or town for which he is inſpector; and within one month after his appointment, ſhall cauſe a ſtatement in writing of ſuch compariſon to be hung up in ſome conſpicuous place in the market and town-hall of ſuch city and town; and ſhall renew the ſame if defaced, and ſhall return a copy thereof, to the receiver of corn returns.

BUSHING. See Coaking.

BUSHMILLS, in *Geography*, a ſmall town of the county of Antrim, and province of Ulſter, in Ireland, where there is a bridge over the river Buſh. In the bed of the river, near the bridge, are ranges of baſaltic columns, ſimilar to thoſe of the Giant's-cauſeway; and alſo on the ſummit of an adjoining mountain. In the neighbourhood is the ruin of the caſtle of Dunluce, which is ſituated in a ſingular manner on an iſolated abrupt rock, perforated by the waves; which have formed under it a very ſpacious cavern. The only approach to this caſtle is along a narrow wall, built ſomewhat like a bridge; which circumſtance muſt have rendered it almoſt impregnable before the invention of artillery. Buſhmills is 120 miles north of Dublin, and about 6 miles eaſt of Coleraine. Hamilton's Antrim.

BUSHWICK, a ſmall but pleaſant town of America, in King's county, Long Iſland, New York. The inhabitants, 540 in number, are chiefly of Dutch extraction; and of theſe 99 are electors.

BUSHY Run, a north eaſt branch of Sewickly creek, near the head of which is General Boquet's field. The creek runs ſouth-eaſterly into Yonghiogeny river, 20 miles S. E. from Pittſburg, in Pennſylvania.

BUSIR, or Bousir, anciently *Buſiris*, the name of four different towns or villages of Egypt, viz. one on the weſt ſide of the Nile, at a ſmall diſtance from the pyramids, and 18 miles S.W. of Cairo. N. lat. 29° 56′. E. long. 31° 6′. —Alſo, another on the weſt ſide of the Nile, 7 miles N.W. of Achmounain or Hetſhmunein. N. lat. 28° 10′. E. long. 30° 44′. See Busiris.—A third near the weſtern banks of the Nile, 12 miles S.W. of Atfieh—A fourth in the Delta, on the weſtern ſide of the eaſt branch of the Nile; about 5 miles S. of Semennud, mentioned by Herodotus (l. ii. c. 59). See Busiris.

BUSIRIS, in *Entomology*, a ſpecies of Papilio, (Heſp. Urb.) with oblong entire wings of a black colour; on the anterior pair two yellow ſpots and dots; poſterior ones with a yellow diſk. This is a native of India. Donov. Inſ. Ind.

Busiris, in *Ancient Geography*, a city of Lower Egypt, now Busir, on the Buſiritic branch of the Nile, and capital of the Buſiritic nome in the Delta; ſaid to have been built by Buſiris, a cruel tyrant, who was ſlain by Hercules; but Strabo (Geog. vol. ii. p. 1154.) denies the exiſtence of ſuch a perſon. Iſis had a ſtately temple erected to her in this city, ſome ruins of which are ſaid to be ſtill remaining. The Buſiris of the Thebais, the ſecond Buſiris mentioned in the preceding article (Busir), having revolted from the Romans, was deſtroyed by Diocleſian in his expedition againſt Egypt, A. D. 296.

Busiris, in *Hiſtory*, the name of ſeveral kings, who, according to Diodorus Siculus (l. i. c. 17.) reigned in Egypt; one of whom is ſaid to have built the magnificent and powerful city to which the Greeks gave the name of Thebes. He acknowledges, however, that the barbarity of a certain Buſiris was fabulous; and that the fable was grounded on a cuſtom practiſed in Egypt, of ſacrificing all the red haired people they met with, moſt of whom were ſtrangers, as the natives of the country were ſcarcely ever of this colour, to the manes of Oſiris: Buſiris ſignifying, in the Egyptian tongue, the ſepulchre of Oſiris. Virgil ranks the barbarity of this tyrant among the fictions of the poets. Virgil, however, has been cenſured for applying the epithet "Inlaudati" to Buſiris (Georg. l. iii. v. 3.); as it does not ſufficiently expreſs the terror which the cruelty of ſuch a monſter tended to excite. Aulus Gellius (l. ii. c. 6.) has endeavoured to vindicate Virgil's uſe of this term, as implying a tacit condemnation and deteſtation of the character of Buſiris, becauſe a perſon who, in all things, and at all times, remains unpraiſed, "illaudatus," muſt be the worſt and the moſt wicked of wretches; and if "laudare" be conſidered as ſignifying, in old Latin, to name, "illaudatus" being the ſame as "illaudabilis" implies, in Virgil's uſe of it, that Buſiris did not deſerve to have his name repeated. Bayle, diſſatisfied with theſe apologies for the Roman poet, ſuggeſts that this verſe is one of thoſe in which poets are forced, upon account of the length or ſhortneſs of ſyllables (the different feet) to employ uſeleſs words, mere expletives, or even ſuch as prejudice the ſenſe. Although Iſocrates made a panegyric on the tyrant Buſiris, Bayle ſuggeſts that he only intended to cenſure the impertinent panegyric of Polycrates, a teacher of oratory in the iſland of Cyprus, who had written the elogium of Buſiris, and the accuſation of Socrates. Melancthon, from his reſearches (in Chron. lib. ii.) concludes, that Buſiris was probably the Pharaoh who occaſioned the deſtruction of the children of the Iſraelites. Oroſius places him 775 years before the foundation of Rome; and, according to Euſebius, he was contemporary with Joſhua, about 700 years before Romulus built Rome. Gen. Dict.

BUSITIS, in *Geography*, a diſtrict of Arabia Deſerta, ſaid to have derived its name from Bus or Buz, Nahor's ſecond ſon, and to have been the country of Elihu, the fourth interlocutor in the hiſtory of Job; called by the LXX. Buzetes.

BUSK, a town of the duchy of Courland; 18 miles S.S.W. of Mittaw.

BUSKIN, Cothurnus, an article of dreſs, ſomewhat in the manner of a boot, covering the foot and mid-leg, and tied beneath the knee: very rich and fine, and uſed principally on the ſtage by the actors in tragedy.

The buſkin is ſaid to have been firſt introduced by Æſchylus: it was of a quadrangular form, and might be worn indifferently on either leg. Its ſole was made ſo thick, as by means of it, men of ordinary ſtature might be raiſed to the pitch and elevation of the heroes they perſonated: in which it was diſtinguiſhed from the ſock, worn in comedy; which was a low, popular ſhoe. By aid of this appendage, the ſtature of the tragic actors was frequently increaſed to four cubits, or about ſix Engliſh feet and half an inch, the height of Hercules and the moſt ancient heroes. The buſkins raiſed them four or five inches; while gauntlets lengthened their arms; and their breaſt, ſides, and every part of the body, were rendered apparently thicker in proportion.

Dempſter obſerves, that the buſkin was not confined to actors only, but girls likewiſe uſed it to raiſe their height; and travellers and hunters to defend themſelves from the mire, &c.

As the buſkin was the diſtinguiſhing mark of tragedy on the ſtage, we find it in claſſic authors frequently uſed to ſignify "tragedy itſelf," and to expreſs ſtrong and vehement declamation or lofty ſtyle, which was uſually affected by theſe actors of coloſſal figure.

BUSKY, in *Geography*. See Buck.

BUSLEIDEN, John, in *Biography*, a native of Arlon, in Luxemburg, became maſter of the requeſts in the court of Charles V. and counſellor to the ſovereign council of Mechlin. He was alſo employed in embaſſies to pope Julius II. and the kings Francis I. and Henry VIII. As a man of literature he was diſtinguiſhed, and he was an intimate friend of ſeveral learned men, particularly of Eraſmus and ſir Thomas More. He founded, in the Univerſity of Louvain, the college of the three tongues, for teaching Latin, Greek, and Hebrew. On his journey to Spain, in 1517, he fell ſick, and died at Bourdeaux. The only piece of his writing is a letter prefixed to More's Utopia. Gen. Dict.

BUSODRA, in *Geography*, a town of Aſiatic Turkey, in the Arabian Irak; 90 miles N.W. of Baſſora.

BUSS, in *Navigation*, a ſmall ſhip, uſed by the Engliſh and Dutch in the herring-fiſhery, which ſee.

The word is originally Flemiſh, *buis*, or *buys*, which ſignifies the ſame.

The ſhip has three ſhort maſts, each in one piece. On each is carried a ſquare ſail, and ſometime a top-ſail above the mainſail. In fine weather are added a ſort of ſtudding ſail to the lower ſails, and a driver. Occaſionally is alſo added a jib forward, upon a ſmall bowſprit or ſpar. To ſhoot their nets, the ſeamen lower the main and fore-maſts, which fold on deck by large hinges, and ſtow aft upon crotches. The buſs is commonly from forty to ſeventy tons burthen. It has two apartments, one forward, and the other aft; the former of which is uſed as a kitchen. Every buſs has a maſter, an aſſiſtant, a mate, and ſeamen in proportion to the ſize of the veſſel. The maſter commands in chief, and without his expreſs orders the nets can neither be caſt nor taken up; the aſſiſtant has the command after him; and the mate is next in order, whoſe buſineſs is to ſee the ſeamen manage their rigging in a proper manner; to attend to thoſe who draw in their nets, and thoſe who kill, gut, and cure the herrings, as they are taken out of the ſea. The ſeamen generally engage by the voyage; and their proviſions conſiſt commonly of biſcuit, oat-meal, and dried or ſalt and freſh fiſh.

Buss, *Buſſa*, is alſo the name of a large ſort of veſſel of war, in uſe in the middle age, ſpoken of by antiquaries and hiſtorians under the ſeveral denominations of *buſſa*, *buſcia*, *burcia*, *buza*, *bucca*, and *bucia*.

BUSSCHOFF, Herman, in *Biography*, a Dutch phyſician, was born at Utrecht in the beginning of the 15th century, and reſided many years at Batavia, in the Eaſt Indies; and while in that country, was induced, he ſays, to make uſe of an Indian doctreſs, to cure him of the gout, by burning little conical pellets of moxa (the pith of a ſpecies of artemiſia,) on the parts affected; a mode of treatment in that and various other complaints, in great repute in China and Japan. The operation laſts, he ſays, about half an hour, and is attended with very little pain. It leaves ſmall ſcars on the parts, which in a few days are digeſted out, and the little ulcers that remain heal under any common applications. As ſoon as the operation was over, he fell into a profound ſleep, which laſted twenty-four hours. On waking he was entirely free from the pain of the gout, and the ſwelling and tenderneſs of the parts which remained were diſſipated in a few days. A ſecond attack of the gout, which occurred ſome years after, was cured in the ſame manner. He had known, he ſays, ſchirrous tumours, nodes, and lethargies relieved by the ſame application. Having collected accounts of a ſufficient number of cures effected in this way, he wrote a ſmall treatiſe on the ſubject, in the Dutch language, and ſent the manuſcript to Holland to be printed. He alſo ſent a parcel of the moxa, and of matches made of ſandlewood, which the Indians uſe to light the pellets with. The book was printed in 1675, at which time ſir William Temple was ambaſſador at the Hague, and on his being attacked with the gout (it was his firſt fit) he was eaſily induced to try the remedy, which procured him the promiſed eaſe. The following year he publiſhed an eſſay on the cure of the gout by moxa, with an account of the method of uſing it, and the benefit he had received from it. The ſame year Buſſchoff's book was tranſlated into Engliſh, on the recommendation, ſir William ſays, of the profeſſors of Greſham College, but no notice is taken of them in the title or preface to the tranſlation. It was publiſhed in 12mo. with chirurgical obſervations by Henry Van Roonhuyſen. The remedy became for a time extremely popular here; but, not being found to anſwer the expectations that had been raiſed, it is long fallen into diſuſe. It is probable, however, than in recent caſes, and in conſtitutions not broken by intemperance, ſome benefit might accrue from the application. Haller. Bib. Med. The Author's Preface, &c.

BUSSET, in *Geography*, a town of France, in the department of the Allier, and diſtrict of La Paliſſe; 5 miles S.E. of Caſſel.

BUSSETTO, a town of Italy, and capital of a ſmall diſtrict in the duchy of Placenza; 8 miles S.E. of Cremona.

BUSSI, Bussissi, or Boississi, an iſland of Africa, in the Atlantic, near the iſland of Biſſao.

BUSSIERE-*Badil*, a town of France, in the department of the Dordogne, and chief place of a canton in the diſtrict of Nontron; 8 miles N. of it. The place contains 1,230, and the canton 7,049 inhabitants: the territory includes 150 kiliometres, and 9 communes.

Bussiere-*Galande*, a town of France, in the department of the Upper Vienne, and diſtrict of Limoges; 5 leagues S.W. of it.

Bussiere-*Poitevine*, a town of France, in the department of the Upper Vienne, and diſtrict of Bellac; 10 miles N.W. of it.

BUSSIERES, John de, in *Biography*, a diſtinguiſhed writer of France, was born, in 1607, at Ville-Franche, in Beaujolois, and entered among the Jeſuits. His poems, written in French, are forgotten; but his Latin poems, firſt printed at Lyons, in 1658, 12mo. are ſtill read. Of theſe the principal is "Scanderbeg," an heroic poem in 8 books; beſides which there are "Rhæa Delivered," ſome Idylls and Eclogues. Buſſieres likewiſe wrote a "Hiſtory of France," 2 vols. 4to.; and an abridgement of univerſal hiſtory, entitled "Floſculi Hiſtoriarum." He died in 1678.

Bussieres, in *Geography*, a town of France, in the department of the Upper Marne, and diſtrict of Langres; 4 leagues S.E. of Langres.

BUSSORES, by corruption from *Buſſora* in Perſia, whence they were originally brought, a name given by ſome to that ſpecies of pigeon called the CARRIER.

BUSSOVATZ, in *Geography*, a town of Boſnia; 20 miles S. of Serajo.

BUSSY *le Grand*, a town of France, in the department of the Côte d'Or, and diſtrict of Semur, three leagues N.E. of it.

BUST. See Bost.

Bust, or Busto, in *Sculpture*, that portion of the human figure, which compriſes the head, neck, breaſt, and ſhoulders; the Italians alſo apply this term to the human figure as low as the hips, with or without the head and arms. This definition of the buſt agrees with that ſpecies of ſculpture which repreſents the portraits of illuſtrious Romans, either entirely round and mounted on pedeſtals, or in alto relievo on the ſides of ſarcophagi, or other ſepulchral monuments, and was moſt likely of Roman production; very different from the Ermæ of the Greeks, which we call Terms: The Erma was a four ſquare prop with the head of ſome divinity or man upon it.

The etymology of the Italian buſto is perhaps from the Latin, buſtum; Feſtus ſays "the place is properly called buſtum, in which the dead is burnt and buried, (quaſi bene uſtum,) as if well burnt; where it is only burnt, but buried in another place, the firſt is ſaid to be uſtrina, (ab urendo,) burning; but buſtum, the place of burial, which we call the ſepulchre:" as many of theſe buſtos have been principal ornaments of the ſepulchre, they may have derived their name from the ſituation, or, on account of their conſequence in it, have had its name transferred to them. The ſeries of Roman emperors in the capitol, and the fine bronze buſts in the king of Naples' collection at Portici, exhibit examples of every ſpecies in this kind of ſculpture. Bernini and other artiſts among the moderns, have likewiſe left examples of the ſeveral varieties.

Busts, *Communicative*, in *Acouſtics*, are two heads of plaſter of Paris, placed on pedeſtals on the oppoſite ſides of a room, and connected with each other by means of a tin tube about an inch in diameter, paſſing from the ear of one head, through the pedeſtal under the floor, and aſcending to the mouth of the other. The end of the tube which adjoins the ear of the one head, ſhould be conſiderably larger than the end which proceeds from the mouth of the other. The whole apparatus ſhould be ſo contrived, that there may not be the leaſt ſuſpicion of any communication. If a perſon ſpeak with a low voice into the ear of one buſt, the ſound will be reverberated through the length of the tube, and will be diſtinctly heard by every one who ſhall place his ear to the mouth of the other. By means of two tubes, one paſſing to the ear and the other to the mouth of each head, two perſons may converſe together, by applying their mouth and ear reciprocally to the mouth and ear of the buſts; and at the ſame time, other perſons that ſtand in the middle of the chamber, between the heads, will not hear any part of the converſation. If a buſt be placed on a pedeſtal in the corner of a room, and two tubes, ſuch as thoſe above mentioned, be ſo diſpoſed, that one may paſs from the mouth, and the other from the ear of the buſts through the pedeſtal and the floor, to an under apartment, we ſhall obtain what is called the "Oracular head." There may be likewiſe wires that paſs from the under jaw and the eyes of the buſt, by which they may be eaſily moved. A perſon placed in the under room, who, at a given ſignal applies his ear to one of the tubes, will hear any queſtion that is aſked; and may immediately reply, favouring the deception by moving at the ſame time the mouth and the eyes of the buſt, by means of the wires. Hooper's Rational Recreations, vol. ii. p. 203, &c.

BUSTA *Gallica*, was a place in ancient Rome, wherein the bones of the Gauls, who firſt took the city, and were ſlain by Camillus, were depoſited. It differed from

Busta *Gallorum*, a place on the Appennines, thus called by reaſon of many thouſands of Gauls killed there by Fabius.

BUSTARD, in *Geography*, a river of Upper Canada, which runs into the river St. Lawrence, weſtward of Black river, in a bay of its own name. It communicates within land, with ſeveral lakes in its extended courſe; and at its mouth lie the Oſiers iſlands. N. lat. 49° 20′. W. long. 68° 5′.

Bustard is alſo a bay on the eaſt coaſt of New Holland, with a good anchorage in five fathoms. S. lat. 24° 4′. E. long. 151° 42′.

Bustard, in *Ornithology*. See Otis.

BUSTIA, in *Geography*, a town of European Turkey, in the province of Albania; 52 miles W.S.W. of Delfino.

BUSTLETON, a poſt-town of America, in Philadelphia county, Pennſylvania, about ten miles N.W. of the city.

BUSTO *Grande*, a town of Italy, in the duchy of Milan; 16 miles N.W. of Milan.

BUSTUARIÆ *mœchæ*, a kind of public proſtitutes, who frequented the *buſta* or tombs, which it ſeems were ordinarily places of rendezvous for perſons of this deſcription. Others ſuppoſe that theſe were women hired to attend a funeral, and lament the loſs of the deceaſed.

BUSTUARII, a kind of gladiators, among the ancient Romans, who fought about the buſtum, or pile, of a deceaſed perſon, in the ceremony of his obſequies.

The practice at firſt was, to ſacrifice captives on the tomb, or at the buſtum, of their warriors: inſtances of which we have in Homer, at the obſequies of Patroclus, and among the Greek tragedians. Their blood was ſuppoſed to appeaſe the infernal gods; and render them propitious to the manes of the deceaſed. In after-ages, this cuſtom appeared too barbarous; and in lieu of theſe victims they appointed gladiators to fight; whoſe blood, it was ſuppoſed, might have the ſame effect.—According to Valerius Maximus and Florus, Marcus and Decius, ſons of Brutus, were the firſt, at Rome, who honoured the funeral of their father with this kind of ſpectacle, in the year of Rome 489.—Some ſay, the Romans borrowed this cuſtom from the Hetrurians; and they from the Greeks.

BUSTUM, in *Antiquity*, denotes a pyramid or pile of wood, whereon were anciently placed the bodies of the deceaſed, in order to be burnt. The Romans borrowed the cuſtom of burning their dead from the Greeks. The deceaſed, crowned with flowers, and dreſſed in his richeſt habits, was laid on the buſtum. (See Burning.) Some authors ſay, it was only called buſtum, after the burning, *quaſi bene uſtum*: before the burning it was more properly called *pyra*: during it, *rogus*; and afterwards, *buſtum*. When the body was only burnt there, and buried elſewhere, the place was not properly called *buſtum*, but *uſtrina*, or *uſtrinum*.

Bustum, in the *Campus Martius*, was a ſtructure whereon the emperor Auguſtus firſt, and, after him, the bodies of his ſucceſſors were burnt. It was built of white ſtone, ſurrounded with an iron paliſade, and planted within ſide with alder trees.

Bustum was alſo figuratively applied to denote any tomb. Whence thoſe phraſes, *facere buſtum*, *violare buſtum*, &c.

Bustum *of an altar*, was the hearth or place where the fire was kindled.

BUSULGINO, in *Geography*, a ſettlement of Siberia, on the Indigirda; 288 miles N.N.E. of Laſchiverſk.

BUSULUTZH, a diſtrict of Ruſſia, in the province of Orenburgh and government of Ufa, ſeated on the Samara, near the river Buſuluk; 172 miles S.W. of Ufa.

BUSZA, a town of Poland, in the palatinate of Braclaw; 52 miles S.W. of Braclaw.

BUTCHER, a perſon who ſlaughters cattle for the uſe of the table, or for ſale. The method of ſlaughtering cattle by a ſeparation of the ſpinal marrow, is now ſucceſsfully practiſed in many parts of the world, and is much recommended on the ground of humanity, as well as of expedition. Lord Somerville in his work "On the Syſtem of the Board of Agriculture," informs us, that with a view to the introduction of it into this kingdom, he made it his buſineſs during his reſidence in Portugal, to have a perſon inſtructed in the uſe of the knife which is uſed for this purpoſe with great adroitneſs. He has given a plate exhibiting the mode of operation, as well as the ſize and form of the knife with which it is performed. The animal, in this mode of ſlaughtering, is unnerved from head to foot at the firſt touch of the ſpinal marrow: and the term of "laying down cattle," which expreſſes the operation, beſpeaks the mildneſs with which it is executed. The perſon employed in this buſineſs has "laid" without being head-lined, 15 oxen in a row, with ſurpriſing regularity and expedition, and their fall is almoſt inſtantaneous. Holding them only by the horn in the left hand, and ſtanding in front of the animal, he paſſes the knife over its brow, through the vertebræ of the neck, into the ſpine. The method in that country of the carter walking at the head of his oxen, when at work, may probably induce them to ſtand more quietly than would otherwiſe be the caſe. Should that be the fact, cattle in this country may be head-lined as uſual, and the operation would then be as ſafe as it is eaſy.

Among the ancient Romans there were three kinds of eſtabliſhed butchers; viz. two colleges, or companies, compoſed each of a certain number of citizens, whoſe office was to furniſh the city with the neceſſary cattle, and to take care of preparing and vending their fleſh. One of theſe communities was at firſt confined to the providing of hogs, whence they were called *ſuarii*; and the other were charged with cattle, eſpecially oxen; whence they were called *pecuarii*, or *boarii*. Under each of theſe was a ſubordinate claſs, whoſe office was to kill, prepare, &c. called *lani*, and ſome times *carnifices*. Briſſonius, Modius, and others, mention a pleaſant way of ſelling meat, uſed for ſome ages among this people: the buyer was to ſhut his eyes, and the ſeller to hold up ſome of his fingers, if the buyer gueſſed aright, how many it was the other held up, he was to fix the price; if he miſtook, the ſeller was to fix it. This cuſtom was aboliſhed by Apronius, prefect of Rome; who in lieu thereof introduced the method of ſelling by weight.

The Jews have their own butchers; as they have a peculiar method of ſelling and preparing their meat. The exerciſe of this office has been conſidered among them as ſingularly important, and requiring previous inſtruction, for which, application has been ſometimes made to a learned rabbi, and for which, a formal licence has been thought neceſſary.

Some derive the term butcher from *buccarius*, of *bucca*, *mouth*; others from βȣθυτης, *killer of cattle*.

The French call a place ſet apart either for the ſlaughter of cattle, or expoſing their fleſh to ſail, *a butchery*, *boucherie*. The Engliſh diſtinguiſh, calling the latter a *fleſh ſhamble*, or *market*, the former a *ſlaughter-houſe*.—Nero built a noble edifice of this kind at Rome; on which occaſion was ſtruck that medal, whoſe reverſe is a building ſupported by columns, and entered by a perron of four ſteps; the legend, MAC. AVG. S. C. *Macellum Auguſti Senatus Conſulto*.

In London, the furniſhing of the markets with butcher's meat is cantoned into ſeveral offices. We have carcaſs butchers, who kill the meat in great quantities, and ſell it out to another ſort called retail butchers, diſperſed in all outparts, villages, and towns near the city. There are beſides cow-jobbers, or ſaleſmen, who buy and ſell cattle, acting between the butchers and the breeders, or feeders. Something like this alſo obtains at Paris.

The company of butchers was not incorporated until the third year of king James I. when they were made a corporation by the name of maſter, wardens, and commonalty of the art and myſtery of butchers; yet the fraternity is ancient. Their arms are azure, two axes ſaltier-wiſe argent, between three boars' heads couped, attired or, a boar's head gules, between two garbes vert. See Company.

There are ſome good laws made for the better regulation of butchers, and for preventing the abuſes committed by them.

By ſtat. 2 and 3 Edw. VI. 15. revived, continued, and confirmed by ſtat. 22 and 23 Car. II. c. 19. now expired, butchers (and others) conſpiring to ſell their victuals at certain prices are liable to 10l. penalty, or 20 days' impriſonment, with merely bread and water, for the firſt offence; 20l. or the pillory, for the ſecond offence; and 40l. or pillory, and the loſs of an ear, and infamy for the third offence: the offence to be tried by the ſeſſions or leet. By ſtat. 4 Hen. VII. c. 3. no butcher ſhall flay any beaſt within any walled town, except Berwick and Carliſle, on pain of forfeiting for every ox 12d. for every cow or other beaſt 8d. By the ordinance for bakers, butchers, &c. butchers ſelling ſwine's fleſh meaſled, or dead of the murrain, or that buy fleſh of Jews, and ſell the ſame to Chriſtians, for the firſt time ſhall be grievouſly amerced, the ſecond time ſuffer the pillory, the third time be impriſoned and fined, and the fourth time forſwear the town.

By ſtat. 3 C. I. c. 1. butchers are not to kill or ſell meat on Sundays, on the penalty of forfeiting 6s. 8d., one-third to the informer, and two-thirds to the poor. By 1 Jac. I. c. 22. and 9 Ann. c. 11. regulations are made as to the watering and gaſhing of hides, and penalties annexed to the violation of them; and alſo to the ſelling of putrefied or rotten hides; and alſo by the ſaid ſtat. 1 Jac. I. no butcher ſhall be a tanner or currier. See Cattle, Forestalling, and Victuals.

Butcher-*bird*, in *Ornithology*. See Lanius.

Butcher's *broom*, in *Botany*. See Ruscus *aculeatus*.

Butcher's *iſland*, in *Geography*, a ſmall iſland of the Eaſt Indies, about two miles long and one broad, diſtant about three miles from Bombay, and deriving its name from the cattle that are kept there for the uſe of that ſettlement. It has a ſmall fort.

BUTE, an iſland in the Frith of Clyde, ſituated a little to the weſt of Renfrewſhire, and a little ſouth of Argyleſhire. The name at different periods has been variouſly written, as *Bote*, *Both*, *Bothe*, and *Boote*, and is denominated *Botis* by the anonymous geographer of Ravenna. This iſland was from "very early times part of the patrimony of the Stuarts; large poſſeſſions of it were granted to ſir John Stuart, ſon of Robert II. by his beloved miſtreſs Elizabeth More; and it has continued in the ſame family to the preſent time." Bute iſle occupies an area of ground meaſuring on an average about 18 miles in length, by four in breadth, and containing about 20,000 acres, and 4000 inhabitants. The northern parts of it are rocky and barren, but its ſouthern parts are moſtly incloſed, well cultivated, and fertile. The whole is divided into two pariſhes, in one of which is the royal burg of *Rotheſay*, which is the principal town of the iſland and of the ſhire. The coaſt is rocky, and indented with ſeveral ſmall harbours, from which are annually fitted out a number of buſſes for the herring-fiſhery. This is the principal trade of the iſland, and has been promoted even at the expence of agriculture. The climate, as uſual in ſmall iſlands, is neceſſarily damp. Its produce is barley, oats, and potatoes; turnips with artificial graſſes have been lately cultivated. Indeed, from the example and recommendation of the marquis of Bute, who is the principal proprietor of the iſland, and derives his title from it, the ſyſtem of agriculture purſued here is far before moſt of the northern counties, and ſuch as is calculated to obtain the greateſt produce from the lands. The ſame nobleman has alſo directed the fiſhermen and farmers to be diſtinct, and each to attend to his reſpective purſuit. The farms are moſtly ſmall, as few exceed the rent of ſixty pounds a year, but the medium is about twenty-five. Arable land was let, when Mr. Pennant viſited the iſland, at nine or ten ſhillings an acre, and the price of labourers was eight-pence a day. Rents were moſtly paid in money, and the rent-roll of the iſland was about 4000l. a year. The government of Bute is managed by a deputy-ſheriff, who is always reſident, and determines moſt petty actions; but criminal actions are carried to Inverary, where the judges of the court of juſticiary meet twice a year. The marquis of Bute is admiral of the county, by commiſſion from his majeſty, and not at all dependent on the lord high admiral of Scotland. He has, therefore, full powers, either in himſelf, or by deputy, to judge and decide on all crimes of murder, piracy, &c. Among the remains of antiquity is part of a Druidical circle at Langal chorid. At Kin-garth are the ruins of a church, of which two cemeteries remain. One of theſe was excluſively appropriated to the interment of females, becauſe, obſerves Mr. Pennant, "in old times certain women being employed to carry a quantity of holy earth, brought from Rome, loſt ſome by the way, and ſo incurred this penalty for their negligence, that of being buried ſeparate from the other ſex." Near this place is a circular incloſure called the *Devil's Cauldron*; it is made of ſtones piled together without mortar, but trimmed in the inſide in a ſmooth and regular manner. The walls are about ſeven feet in height, and ten feet in thickneſs. The area is thirty feet in diameter, and the entrance gradually narrows, from the outſide of the wall inwards. Near Rotheſay are the remains of an ancient *caſtle*, with a fort, barracks, and drawbridge, which was formerly the reſidence of the kings of Scotland. See Rothesay.

Bute, a county or ſhire of Scotland, comprehending the above iſland, with thoſe of Arran, the two Cumbrays, and Inchmarnock. This county, with that of Caithneſs, combine to ſend one member to parliament alternately. See Pennant's Tour in Scotland, vol. ii. Sinclair's Statiſtical Account of Scotland.

BUTEA, in *Botany*, (in honour of the late earl of Bute, a munificent patron of botanical ſcience). Willd. 1323. Roxburgh Corom. i. p. 22. Claſs and order, *diadelphia decandria*. Nat. Ord. *Papilionaceæ*, Linn.—*Leguminoſæ*, Juſſ.

Eſſ. Ch. *Cal.* ſubbilabiate. *Cor.* ſtandard very long, lanceolate. *Legume* compreſſed, membranaceous, with one ſeed at the ſummit. Willd.

Species, 1. B. *frondoſa*. Roxb. Corom. i. tab. 21. (Plaſo, Rheede. Mal. 6. tab. 16, 17. Arbor ſiliquoſa trifolia indica, Ray Hiſt. 1721. Erythrina monoſperma, La Marck Encyc. tom. ii. p. 391.) "Little branches pubeſcent; leaflets roundiſh, emarginate." Willd. An evergreen tree. *Stem* about fifteen feet high; outer bark, cinereous, dry, brittle, clothed with a dark red cuticle; inner bark, ſoft, but thick, from which, when cut, exudes a gummy blood-red juice, of a ſweetiſh taſte. *Leaves* alternate, petioled, growing by threes, about ten inches long; leaflets about four inches long, even above, tranſverſely nerved beneath, reticulated between the nerves; the terminal leaflet at right angles with the other two, wedge-ſhaped at its baſe; the lateral leaves larger on the exterior ſide than on the interior, with ſhort and thick petioles. *Flowers* red, rather large, in racemes, on alternate, or ſcattered, ſomewhat tomentous, peduncles. *Calyx* ſhort, five-toothed. Wings of the *corolla* a little ſhorter than the ſtandard; keel ſhorter than the wings. *Legumes* elliptic-oblong, pubeſcent, from four to five inches long, and near two inches broad. Ray from Rheede, and La Marck from a dried ſpecimen, communicated by Juſſieu. A native of the Eaſt Indies, on the coaſts of Malabar and Coromandel.

Obſ. Juſſieu informed La Marck that from this tree is procured the gum lac of commerce; and in fact there are found here and there, on the branches of moſt of the ſpecimens in his Herbarium, reſinous lumps which greatly reſemble that ſubſtance. Theſe lumps are much divided, and not in entire maſſes, like thoſe of gum or reſin which proceed from various trees; ſo that they do not appear to be the inſpiſſated juice mentioned by Rheede, but, agreeably to the common opinion with reſpect to gum lac, may be elaborated by a ſpecies of ants, ſomewhat in the ſame manner as bees form their wax, and diſcharged on the ſame tree from which the crude juice was obtained.

2. B. *ſuperba*. Roxb. Corom. i. tab. 22. "Little branches ſmooth; leaflets attenuated at the baſe, roundiſh, obtuſe." Willd. Very ſimilar to the preceding, but differs in the particulars mentioned in the ſpecific character, and in having leaves three times as large, the leaflets being a foot long. A native of the coaſt of Coromandel.

Dr. Roxburgh has deſcribed theſe two ſpecies in the third volume of the Aſiatic Reſearches, p. 469, 8vo. The firſt is the Maduga of the Gentoos. The juice above-mentioned hardens into a ruby-coloured brittle aſtringent gum, ſoon loſing its beautiful colour when expoſed to the air; entirely ſoluble in water, and alſo in a great meaſure in ſpirits. Infuſions of the flowers dye cotton cloth, previouſly impregnated with a ſolution of alum, or alum and tartar, of a moſt beautiful bright yellow. The ſecond ſpecies is the Tida maduga of the Gentoos. This alſo yields a red gum from its bark, and its flowers afford the ſame beautiful yellow dye and pigment.

BUTEO, in *Ornithology*, the ſpecies of Falco we call the common buzzard in this country. It has the cere and legs yellow; the body brown, and the belly pale, with brown ſpots. This is rather larger than a kite in the body; its length about 20 inches.

BUTEONIS, in *Zoology*, a ſpecies of Echinorhynchus, of a very clear white colour, with the veſicles of the tail blueiſh and lentiform. Goeze. Length of this kind two inches and a quarter. Infeſts the inteſtines of the buzzard.

Buteonis, a ſpecies of Ascaris, that infeſts the inteſtines of the buzzard, *Falco buteo*, but of which no particular deſcription has been hitherto given. Goeze, Gmel. &c.

Buteonis, is alſo a ſpecies of Cucullanus, found in the inteſtines of the ſame bird, of which we have no deſcription.

BUTHROTUM, Butrinto, in *Ancient Geography,* a maritime town of Epirus, mentioned by Virgil, Strabo, and Pliny, who repreſents it as a Roman colony. It was ſeated on a river, called Xanthus, in Theſprotia, over-againſt Corcyra, as Butrinto is at preſent oppoſite to Corfu. Cæſar gives it this poſition; and Virgil ſays that Æneas landed there, and was aſtoniſhed to find a Trojan who reigned here, and who was Helenus the ſon of Priam. This king liberally ſupplied the wants of Æneas, and gave him uſeful advice with reſpect to his navigation.

BUTHROTUS, a river of Italy, in the country of the Brutians. Cluvier.

BUTHURUS, a town of Africa, in Libya Interior, and near the ſource of the river Bagrada. Ptolemy.

BUTHYSIA, *βȣθυσια*, in *Antiquity*, a ſacrifice of the greateſt kind: ſuch were the hecatombs. See Sacrifice and Hecatomb.

The Greeks frequently prefixed the particle *βȣ*, *bu*, to words, to denote things of extraordinary magnitude, as alluding to the bigneſs of oxen.

BUTI, in *Geography*, a town of Italy, in the duchy of Tuſcany, ſeated on the Arno, 20 miles N.N.E. of Leghorn. The mountains of Piſa form near this place a deep narrow hollow, called the valley of Buti, bounded by the ſides of the mountains, which are covered with pine, cheſnut, and olive trees. In the bottom is a ſmooth ground, cut by an impetuous torrent; and in the loweſt part of it is ſituated the land of Buti, in two diviſions, the higher, called the "caſtle," and the lower, the "town." It is continually expoſed to a cold moiſt air, except during ſome days in ſummer; it is often covered with a thick cloud, and ſubject to ſudden changes of weather, particularly to heavy rains; owing to its being below the high mountains of Piſa, and near to the lake of *Bientina*, which ſee.

BUTIGA, is an inflammation of the whole face, otherwiſe called *gutta roſacea*.

BUTIS, in *Ancient Geography* and *Mythology*. See Butus.

BUTLASS, in *Geography*. See Puddar.

BUTLER, or Botiler, an officer whoſe chief charge is over the cellar and liquors. See Arch-*Butler*.

Butlers, *buticularii*, among the Normans, denoted wine-taſters, appointed to examine liquors, and ſee that they were right and legal.

Butler *of France*, *buticularius Franciæ*, was one of the four great officers of the houſehold of the ancient kings of that country, who ſigned all the royal patents, or at leaſt was preſent at the diſpatch of them. His ſeat was among the princes, and he even diſputed the precedency of the conſtable of France. He had a right of preſiding at the chamber of accounts; and in the regiſters of that office of the year 1397, mention is made that John de Bourbon, grand butler of France, was admitted there as firſt preſident. But the title has been ſince aboliſhed, and, in lieu thereof, a new office of *grand echanſon*, or cup bearer, was erected.

Butler, James, duke of Ormond, in *Biography*, an accompliſhed Engliſh courtier and eminent ſtateſman, in the 17th century, was the ſon of Thomas Butler, eſq. a branch of the Ormond family, and by his mother, the grandſon of ſir John Poyntz, and born at Newcaſtle-houſe in Clerkenwell, London, in 1610. Upon the deceaſe of Thomas, earl of Ormond, his grandfather, ſir Walter Butler of Kilcaſh, aſſumed the title, and his father was called by courteſy viſcount Thurles. After the death of his father, who was drowned on his paſſage from Ireland to England, in 1619, and who left a widow and 7 children in embarraſſed circumſtances, this title devolved upon him. In 1620, he was ſent over to England by his mother, and placed under the tuition of a pariſh ſchoolmaſter at Finchley, near Barnet; but by the interpoſition of king James, who claimed the wardſhip of the young lord, he was removed to Lambeth, and his education was committed to the ſuperintendance of archbiſhop Abbot. In this ſituation he is ſaid to have enjoyed little advantage with regard to general inſtruction; but he acquired thoſe principles of the Proteſtant religion to which he maintained a ſteady attachment in the progreſs of his life. Upon the death of king James, he was taken home by his grandfather, the earl of Ormond, and no farther care ſeems to have been taken with regard to his education. At the age of 18, he attended the duke of Buckingham at Portſmouth, and after the aſſaſſination of this favourite by Felton, he returned to London; and marrying his couſin, the lady Elizabeth Preſton, in 1629, he brought to an amicable termination the diſputes that had long diſturbed the harmony and injured the intereſts of both families. In the following year he removed to Ireland, and purchaſed a troop of horſe. In 1632 his grandfather died, ſo that he ſucceeded to the title and eſtates of the earldom of Ormond; and in 1633, when lord Wentworth, afterwards earl of Strafford, became governor of Ireland, he was diſtinguiſhed by the peculiar attention of this eminent ſtateſman; who, on occaſion of their firſt interview, ſaid to his attendants, "that if his ſkill in phyſiognomy did not fail him, that young nobleman would make the greateſt man of his family." The connection thus formed between the lord-deputy and the young earl, ſubſiſted, with little interruption, during the whole of Strafford's adminiſtration. At the age of 24 he was ſworn of the privy council, and on occaſion of the troubles which broke out in Scotland, he was appointed to the command of the army levied in Ireland, under the lord-lieutenant. To the intereſt of lord Strafford he uniformly adhered; and this unfortunate nobleman teſtified the ſenſe he entertained of the importance of his ſervices, by requeſting that the king would confer his blue garter upon his friend the earl of Ormond; which, however, he declined accepting during this reign. Upon the commencement of the great rebellion in Ireland in 1641, the earl of Ormond was appointed lieutenant-general and commander in chief of the army, which conſiſted at that time of no more that 3000 men. With this inconſiderable force, and a few additional troops which he was able to raiſe, he reſiſted the progreſs of the rebels, and in 1642 diſlodged them from the Naes near Dublin, raiſed the blockade of Drogheda, and routed them at Kilruſh. His exertions, however, were impeded by the jealouſies of the lords juſtices, and afterwards of the earl of Leiceſter, the lord lieutenant; but the king, with a view of counteracting this oppoſition, gave him an independent commiſſion under the great ſeal, and, as a further mark of favour, created him marquis of Ormond. In 1643 he obtained a conſiderable victory with very inferior forces over the rebels under the command of the Iriſh general Preſton, but for want of ſuitable encouragement, he was under a neceſſity of concluding a ceſſation of hoſtilities, for which meaſure he was much blamed in England; though he availed himſelf of it by ſending over troops to the aſſiſtance of the king, who was then at war with the parliament. His majeſty, in recompence of his fidelity, and the ſervice rendered to the royal cauſe, created him lord-lieutenant of Ireland, in the room of the earl of Leiceſter; and he entered upon his government in the beginning of the year 1644. In the exerciſe of this office, he had to contend with many difficulties, occaſioned by the rebellious ſpirit of the old Iriſh, and the machinations of the Engliſh parliament. Having maintained an unſucceſsful ſtruggle for three years, he was at length, viz. in 1647, obliged to ſign a treaty with the parliament's commiſſioners, and to come over to England, where he waited on the king at Hampton-court, and obtained his majeſty's full approbation of all his proceedings. His circumſtances, however, were embarraſſed and perilous, ſo that he thought is moſt prudent to provide for his own ſafety by embarking for France.

During his ſhort reſidence in this country, he correſponded with the Iriſh for the purpoſe of inducing them to engage in the royal cauſe; and having engaged lord Inchiquin to receive him in Munſter, he landed at Cork, after eſcaping the imminent danger of ſhipwreck, in 1748. On his arrival, he adopted meaſures which ſeemed to revive the hopes of the king's friends. Theſe hopes were farther encouraged by the abhorrence excited through the country on occaſion of the king's death, and in conſequence of this favourable impreſſion on the public mind, the lord lieutenant cauſed Charles II. to be immediately proclaimed. But Owen O'Neile, inſtigated by the pope's nuncio, and ſupported by the old Iriſh, raiſed obſtacles in his way, which he determined to overcome by the bold enterpriſe of attacking the city of Dublin, then held for the Parliament by governor Jones. This enterpriſe, however, failed, with very conſiderable loſs on the part of the Marquis: and ſoon after Cromwell arrived in Ireland, and having ſtormed Drogheda, ſurrendered it to military execution, thus ſtriking terror into the Iriſh, ſo that they became diſſatisfied with the lord-lieutenant, and inſiſted on his leaving the kingdom. At the cloſe of the year 1650, he embarked for France, and there joined the exiled family. In order to retrieve his own affairs, the marchioneſs went over to Ireland, and having in ſome meaſure ſucceeded in exempting her own eſtate from forfeiture, ſhe remained in the country, and never ſaw her huſband till after the reſtoration. In the mean while the marquis was employed in various commiſſions in behalf of the king; and he rendered eſſential ſervice to his cauſe by reſcuing the duke of Glouceſter out of the hands of the queen-mother, and preventing her ſevere treatment from inducing him to embrace the Catholic religion. He was alſo inſtrumental in detaching the Iriſh Catholic regiments from the ſervice of France, one of which he was appointed to command, and in obtaining the ſurrender of the town of St. Ghilan, near Bruſſels, to the Spaniards. In a ſecret embaſſy to England for the purpoſe of inveſtigating the ſtate of the royal party, he eſcaped ſeveral hazards of diſcovery from the ſpies of Cromwell; and at length, when Charles II. was reſtored to the throne of his anceſtors, the Marquis accompanied him, and was liberally recompenſed for his faithful attachment and active ſervices. Beſides the reſtoration and augmentation of his large eſtates in the county of Tipperary, he was raiſed to the dignity of duke of Ormond, and he officiated as lord high-ſteward of England at the king's coronation. After his appointment to the lord lieutenancy, in 1662, he made ſeveral efforts, attended with conſiderable ſucceſs, for reducing the country to a ſtate of tranquillity, and he promoted various improvements, particularly with reſpect to the growth of flax, and manufacture of linen, which very much conduced to its ſubſequent proſperity. His attachment to earl Clarendon, however, involved him in the odium which purſued that great man; and though his conduct, after rigorous ſcrutiny, furniſhed no matter of juſt cenſure, he was nevertheleſs deprived of his government by the machinations of the duke of Buckingham, in 1669; but in the ſame year he was elected to the office of chancellor of the univerſity of Oxford. In 1670, a deſperate deſign was formed againſt him by colonel Blood, whom he had impriſoned in Ireland on account of his having engaged in a plot for the ſurpriſal of Dublin caſtle. Blood, being at this time in London, determined to ſeize his perſon, in his return from an entertainment given in the city to the prince of Orange; and in the proſecution of his purpoſe, his accomplices dragged the duke out of his coach, and placed him behind one of them who was on horſeback, in order to convey him to Tyburn, and execute him on the public gallows; or, as others ſay, to take him out of the kingdom, and compel him to ſign certain papers relating to a forfeited eſtate of Blood. The duke by his ſtruggles threw both the man and himſelf from the horſe, and by ſeaſonable aſſiſtance he was releaſed from the cuſtody of theſe aſſaſſins. This daring act of violence excited the king's reſentment; but Blood, for certain reaſons, having been taken into favour, his Majeſty requeſted the duke to forgive the inſult. To which meſſage he replied, "that if the king could forgive Blood for attempting to ſteal his crown, *he* might eaſily forgive him for an attempt on his life; and that he would obey his Majeſty's pleaſure without inquiring into his reaſons." For ſeven years the duke of Ormond, who was equally adverſe to papiſts and fanatics; and who poſſeſſed a ſpirit which would not ſtoop to the cabals formed by miſtreſſes and perſons deſtitute of honour, was neither in favour with the court nor employed by it; but at length, in 1677, he was ſurpriſed by a meſſage announcing the king's intention to viſit him. The object of this viſit was to diſcloſe his Majeſty's reſolution of appointing him to the lord-lieutenancy of Ireland; and this reſolution had been adopted by the influence of the duke of York, who had reaſon to imagine that the "cabal," or court-party, propoſed to introduce the duke of Monmouth into this high ſtation in the room of the earl of Eſſex, who had been removed. In order to counteract this plan, the duke of York recommended his grace of Ormond to the king, as the moſt likely perſon to engage general confidence, and to unite diſcordant parties in both countries. The king perſiſted in his reſolution, and the duke of Ormond took poſſeſſion of the government. Upon his arrival he adopted vigorous meaſures for diſarming the papiſts and maintaining public tranquillity; and though he did not eſcape calumny, the king determined to ſupport him againſt all attempts for removing him, and declared with an oath, "that while the duke of Ormond lived, he ſhould never be put out of that government." He was deſirous, indeed, of calling a parliament in Ireland for ſettling affairs, but to this meaſure the king would not give his conſent. In 1682, when he came over to England to acquaint the king with the ſtate of his government, he was advanced to the dignity of an Engliſh dukedom; but notwithſtanding this mark of royal favour, he had given ſuch offence by his importunity with reſpect to an Iriſh parliament, that immediately on his return he was appriſed of an intention to remove him. Upon the acceſſion of James, the duke cauſed him to be proclaimed, and ſoon after reſigned his office and came over to England. Although the duke's principles did not ſuit the projects of the new reign, he was treated with reſpect by the king, and received from him the honour of a viſit, whilſt he was confined to his chamber with the gout. He died at Kingſton-hall, in Dorſetſhire, July 21ſt, 1688, in the 78th year of his age, and was buried in Weſtminſter-abbey.

"The character of the duke of Ormond was that of a high ſpirited and liberal nobleman, upright in his intentions and ſteady to his political principles, which were thoſe of monarchy with large prerogatives, but not beyond the law. He was a ſteady friend to the church of England, and had in his family ſeveral men of learning who attained to eminence, among whom were Dr. Hough, the excellent biſhop of Worceſter, and the very ingenious Dr. Burnet of the Charter-houſe. From a low though honourable beginning, he arrived at great rank and proſperity, and left a numerous progeny, of which he lived to ſee the third generation. He was active and well verſed in buſineſs; and his talents, though not of the firſt claſs, enabled him to appear with reputation in ſeveral difficult conjunctures." Biog. Brit. Gen. Biog.

Butler, Joseph, an eminent prelate of the Engliſh church, was born at Wantage in Berkſhire, in 1692, and was intended by his father for the miniſtry among proteſtant diſſenters of the preſbyterian denomination. With this view, after having finiſhed his grammatical education at his native place, he was ſent to a diſſenting academy, kept by Mr. Samuel Jones, firſt at Glouceſter and afterwards at Tewkſbury. Of his application and proficiency as a theological ſtudent, he exhibited a ſignal evidence in two letters addreſſed to Dr. Clarke, and containing a ſtatement of doubts that had occurred to him concerning the concluſiveneſs of ſome arguments in the Doctor's "Demonſtration of the Being and Attributes of God." The firſt of theſe letters, dated Nov. 4, 1713, diſplayed a ſagacity and depth of thought which excited the particular notice of Dr. Clarke. Encouraged by this condeſcenſion, Mr. Butler addreſſed the Dr. again upon the ſame ſubject; and received an anſwer. The whole correſpondence, which compriſed three other letters, was annexed to the celebrated treatiſe above-mentioned, and retained in all the ſubſequent editions. The correſpondence was ſecretly conducted by Mr. Secker, the friend and fellow pupil of Mr. Butler; and procured for him, as ſoon as he became known, the friendſhip of Dr. Clarke. Whilſt he was engaged in the proſecution of his ſtudies at Tewkſbury, he entered into an examination of the principles of nonconformity: and the reſult of his inquiry was a reſolution of conforming to the eſtabliſhed church. His father was at firſt diſſatisfied with his purpoſe, and attempted to divert him from it; but, finding that his ſon's reſolution was fixed, he conſented to his removal to Oxford, where he was admitted a commoner of Oriel college in 1714. Here he formed an intimate friendſhip with Mr. Edward Talbot, ſecond ſon of biſhop Talbot, and to this circumſtance he owed all his future preferments in the church. Having taken orders ſoon after his admiſſion at Oxford, he was recommended, in 1718, by Mr. Talbot and Dr. Clarke to ſir Joſeph Jekyll, who appointed him preacher at the Rolls chapel. In this ſituation he continued till the year 1726, when he publiſhed, in one volume octavo, "Fifteen ſermons preached at that Chapel." Theſe ſermons eſtabliſhed his character as an acute and ſolid reaſoner; and as they are rather deep diſquiſitions, than popular diſcourſes, adapted ſolely to a learned and attentive audience, the author thought proper to make an apology for their abſtruſeneſs in a preface to a ſecond edition, reviſed and improved in 1729; in which preface he has alſo abridged and illuſtrated the principles laid down in his ſermons. The ſtyle of theſe compoſitions is deſtitute of that eaſe and perſpicuity, which might juſtly have been deſired, but which Butler was never able fully to attain. His friend Secker is ſaid to have taken pains in rendering more familiar the language both of theſe diſcourſes and of his other works. By the judicious reader, notwithſtanding theſe defects, they have been always held in high eſtimation. Under the patronage of Dr. Talbot, then biſhop of Durham, to whom Butler was recommended by his ſon on his death bed, he was preſented, firſt, viz. in 1722, to the rectory of Houghton near Darlington, and afterwards, viz. in 1725, to that of Stanhope in the ſame dioceſe. At this latter place, Mr. Butler, having reſigned the Rolls chapel in 1726, reſided during ſeven years, diligently diſcharging the duties of a good pariſh prieſt. The ſituation, however, was too retired and ſolitary for a perſon of his gloomy diſpoſition; and his friend Mr. Secker, who was appriſed of this circumſtance, was anxious to draw him out of ſolitude into a more active and conſpicuous ſcene. With this view he took the liberty of mentioning him to queen Caroline; who, apprehending that he was dead, aſked archbiſhop Blackburne, if this was not the fact: to which the archbiſhop replied, "No, madam, but he is buried." By the recommendation of Mr. Secker, the lord chancellor Talbot nominated him his chaplain; and Mr. Butler, accepting the nomination, came up to London by way of Oxford, in 1733, and was created doctor of laws. The chancellor alſo gave him a prebend in the church of Rocheſter, and it was ſtipulated that he ſhould continue to reſide half the year at Stanhope. In 1736, he was appointed clerk of the cloſet to queen Caroline, and in the ſame year he publiſhed his celebrated work, entitled "The analogy of Religion, natural and revealed, to the Conſtitution and Courſe of Nature."

The firſt edition of this work, which for depth and originality of thought and reaſoning, is one of the moſt maſterly performances that ever appeared in the world, was publiſhed in 1736 in 4to.: the ſubſequent editions have been in 8vo. and the laſt by Dr. Halifax, biſhop of Glouceſter, was publiſhed in 1788. The foundation of the mode of reaſoning purſued in this treatiſe had been laid by the author in his ſermons, and particularly in the laſt of them "On the Ignorance of Man." For a general account of it; ſee the article Analogy. To the "Analogy" are annexed two Diſſertations; one on Perſonal Identity, and another on the Nature of Virtue.

Whilſt queen Caroline lived, Dr. Butler attended her for two hours every evening; and by her urgent recommendation to the king, he was raiſed in the year following that of her death, viz. in 1738, to the ſee of Briſtol, and in 1740, to the deanery of St. Paul's in London, upon which he reſigned his rich living of Stanhope. Beſides attention to the various duties of his dioceſe and deanery, biſhop Butler preached ſeveral ſermons in the metropolis on particular occaſions, which were printed, and which have ſince been annexed to the later editions of the ſermons at the Rolls chapel. In 1746, he ſucceeded Dr. Egerton, biſhop of Hereford, as clerk of the cloſet to the king; and in 1750, he was tranſlated to the ſee of Durham. At his primary viſitation in 1751, he delivered a charge to his clergy, of which the principal ſubject was "External Religion." In recommending on this occaſion the utility of outward forms and inſtitutions towards fixing and preſerving in the minds of men a ſenſe of devotion and duty, he was thought by ſeveral perſons to have ſpoken too favourably of pagan and popiſh ceremonies, and to have countenanced, in a certain degree, the cauſe of ſuperſtition. He had alſo put up a plain marble croſs in his chapel at Briſtol. The charge was animadverted upon by an able and ſpirited writer in 1752, in a pamphlet entitled, "A Serious Inquiry into the Uſe and Importance of external Religion, &c." The circumſtance of the croſs at his chapel, and the offence taken by ſome perſons at this charge, might poſſibly have given riſe to the calumny which was advanced, almoſt 15 years after his death, in an obſcure and anonymous pamphlet, entitled "The Root of Proteſtant Errors examined;" and which charged him with having died in the communion of the church of Rome. The charge is abſurd and groundleſs, and hardly deſerves refutation. It is ſufficiently expoſed in biſhop Porteus's life of archbiſhop Secker; and the character of the worthy prelate has been more amply vindicated by Dr. Halifax, then biſhop of Glouceſter, in a preface to the ſecond edition of his charge, printed in 1786, containing an account of the character and writings of the author. Soon after his removal to his new biſhopric, the health of biſhop Butler began viſibly to decline; and having made ineffectual trial of the waters at Briſtol, he removed to Bath, where he died on the 16th of June, 1752. His remains were interred in the cathedral at Briſtol, where a monument, with an inſcription, is erected to his memory. For biſhop Butler's intellectual character, it will be ſufficient to refer to his invaluable writings. Of his piety we may obſerve, that it was ſincere and fervent, but perhaps inclining too much to the gloomy and aſcetic extreme. His benevolence was ardent and diffuſive. During his reſidence on the ſee of Briſtol he expended in the repairs and improvement of the epiſcopal palace the ſum of 4000l., which exceeded the whole amount of his receipts from that ſee. His benefactions were numerous and liberal. He maintained the hoſpitality and dignity of his dioceſe with ſpirit, ſetting apart three days in the week for the entertainment of the principal gentry of the county, and condeſcending to invite the pooreſt of his clergy to his table, and to viſit them in their pariſhes. At his deceaſe it is ſaid that he ordered all his MSS. to be burnt, without unfolding the covers of any of them. Biog. Brit. Halifax's Preface.

Butler, Samuel, a celebrated poet of the 17th century, was born at Strenſham, in Worceſterſhire, as ſome ſay in 1600, and according to others, in 1612. Having laid the foundation of grammar-learning in the free-ſchool at Worceſter, he was ſent to Cambridge, where he reſided, without being matriculated in that Univerſity, for 6 or 7 years. Upon his return to his native county, he lived as clerk with an eminent juſtice of the peace, in whoſe eaſy and reputable ſervice he had leiſure for applying to his favourite ſtudies, hiſtory and poetry, and alſo for amuſing himſelf with muſic and painting. Under the patronage of Elizabeth, counteſs of Kent, he had acceſs to a valuable library, and the opportunity of frequent intercourſe with the great Mr. Selden, who employed him in writing foreign letters, and tranſlating for him. He alſo lived for ſome time with ſir Samuel Lake, a gentleman of an eminent family in Bedfordſhire, and a famous commander under Oliver Cromwell. About this time he wrote his celebrated burleſque poem, entitled "Hudibras," under which character, as it is generally ſuppoſed, he intended to ridicule ſir Samuel. After the reſtoration, Butler was made ſecretary to Richard earl of Carberry, lord preſident of Wales, and by him appointed ſteward of Ludlow caſtle, when the court was revived there; about which time he married Mrs. Herbert, a lady of good family and ſome fortune. The firſt part of his "Hudibras" was printed in 1663, and it was introduced to the notice of the court by the "Mecænas" of that age, the earl of Dorſet, and yet though it was highly extolled by the prevailing party both in church and ſtate, and much admired as well as frequently cited, by the king, the author received no other recompence beſides praiſe and barren promiſes, and was ſuffered to paſs his days in an obſcure and neglected condition. The only boon which was conferred upon him by the king, (and even this grant is diſputed) was a donation, exempt from office fees, of 300l. which he honourably devoted to the diſcharge of his debts; but the profeſſions of regard and ſervice made to him by lord chancellor Clarendon, and by the duke of Buckingham, were futile and inefficient. Reſpected for his integrity and beloved for his ſocial qualities by his few intimate friends, he died in 1680, and was buried in the church-yard of St. Paul's, Convent-garden, at the expence of his friend Mr. Longueville of the Temple; and, in 1721, a monument was erected to his memory among the poets in Weſtminſter abbey, by alderman Barber, the printer. The inſcription ſanctions the common opinion of his poverty by the following words: "Ne cui vivo deerant ferè omnia deeſſet etiam mortuo tumulus:" *i. e.* leſt he who, when living, wanted almoſt every thing, ſhould, when dead, want alſo a tomb.

A monument has ſince been erected, by private ſubſcription, in the portico of the church, near which he was buried, bearing the poet's buſt, taken from that in Weſtminſter abbey; and on a ſtone beneath the medallion are inſcribed the following lines, contributed by Mr. O'Bryan:

"A few plain men, to pomp and pride unknown,
O'er a poor bard have raiſed this humble ſtone,
Whoſe wants alone his genius could ſurpaſs,
Victim of zeal! the matchleſs Hudibras!
What! tho' fair freedom ſuffered in his page!
Reader! forgive the author—for the age—
How few, alas, diſdain to cringe and cant,
When 'tis the mode to play the ſycophant!
But Oh! let all be taught from Butler's fate,
Who hope to make their fortune by the great,
That wit and pride are always dangerous things.
And little faith is due to courts and kings."

His poem, entitled "Hudibras" is one of the moſt original works, with regard both to its ſtyle and matter, that was ever written. It is of the burleſque kind, being uſually ſtyled a "mock-heroic," or "mock-epic," and much reſembles Homer's "Margites," which, according to Ariſtotle, bore the ſame relation to comedy, that the Iliad and Odyſſey do to tragedy. The hint of it was ſuggeſted by the inimitable Don Quixote; and it was intended as a general ſatire on thoſe times of anarchy and confuſion, during which the poet lived, and its leading aim was to expoſe by ridicule the religious and political principles of the Puritans, as they appeared after the civil war which overthrew church and ſtate in the reign of Charles I. Of this poem there are three parts, which were printed ſeparately; but the ſtory was left unfiniſhed. The diction and verſification are often groſsly familiar and negligent, though, upon the whole, they add to the humourous effect; and it is juſtly remarked by Dr. Johnſon, in oppoſition to the judgment of Mr. Dryden, that the heroic ſtyle and meaſure would not have been better adapted to the author's purpoſe. The frequent double rhymes, introduced by the author, although they are often very imperfect, ſeem to give a kind of comic tone to the whole, and to improve the wit by combining the moſt incongruous ideas. Butler, beſides the talent which he poſſeſſed of intereſting and amuſing the reader by odd and whimſical notions and aſſociations, was well acquainted with human life. To this purpoſe Dr. Johnſon (Lives of the Poets) obſerves, that "he had watched with great diligence the operations of human nature, and traced the effects of opinion, humour, intereſt and paſſion. From ſuch remarks proceeded that great number of ſententious diſtichs which have paſſed into converſation, and are added as proverbial axioms to the general ſtock of practical knowledge." Of the numerous editions of this poem, the moſt valuable is that of Dr. Zachary Grey, publiſhed in 1744, with copious annotations, and a preface in two volumes 8vo. The ſingular popularity of this poem produced ſeveral unſucceſsful imitations of it, and ſome vain attempts to tranſlate parts of it into Latin. But it is not eaſy or perhaps poſſible, to transfer the humourous turn of the phraſe, for which this performance is diſtinguiſhed, into any foreign language. The undertaking, however difficult, was attempted in a French tranſlation of Hudibras, in 3 vols. 12mo. with notes, by —— Townley, jun. eſq. of Townley in Lancaſhire. A collection of pieces, under the title of "The Poſthumous Works of Mr. Samuel Butler," was publiſhed after his death, in 3 vols. 12mo. but moſt of theſe are falſely aſcribed to him, and none of them are of much value. However, in 1759, there appeared a more reſpectable publication, entitled "Genuine Remains in Proſe and Verſe of Mr. Butler, from the original MSS. formerly in the poſſeſſion of W. Longueville, eſq." 2 vols. 8vo. The editor was Mr. Thyer of the Mancheſter library, who has eſtabliſhed the authenticity of theſe pieces, and accompanied them with notes. The poetical part contains a ſatire on the Royal Society; and the proſe conſiſts of "Characters," drawn with much force and humour, and "Thoughts" on various ſubjects. Biog. Brit.

Butler, Charles, Magd. Col. Oxford, Maſter of Arts, publiſhed, in 4to. 1636, the principles of muſic in ſinging and ſetting, with the twofold uſe thereof, eccleſiaſtical and civil. This tract, which is dedicated to Charles I. ſeems to have been the only theoretical or didactic work, publiſhed on the ſubject of muſic, during his reign. The author appears to have been a learned and ingenious man. He had previouſly publiſhed "The Principles of Grammar," in which he had propoſed a new and more ſimple orthography for our language, of which Dr. Johnſon has given an account in the grammar prefixed to his dictionary. The Saxon and new characters he uſes, in order to explode ſuch letters as are redundant, or of uncertain powers, render this muſical tract ſomewhat difficult to peruſe. It is, however, better digeſted, more compreſſed, and replete with uſeful information, than any work of the kind that appeared for more than a century after Morley's "Introduction." The quotations are perhaps too numerous, and the diſplay of muſical erudition may be thought to border on pedantry; yet, allowing theſe to be cenſurable, the book contains more knowledge, in a ſmall compaſs, than any other of the kind, in our language.

Butler, * * *, an eminent harpſichord maſter, who during many years had a conſtant and numerous ſucceſſion of ſcholars. He ſucceeded Keeble in playing the organ at Ranelagh; was organiſt of St. Ann's church, Soho; and afterwards of St. Margaret's, Weſtminſter: he played the harpſichord at Hickford's ſubſcription concert, and at frequent benefits there and elſewhere. He was a correct but not a brilliant or learned performer; and ſeems never to have attempted compoſition. Travelling to Naples, about the year 1775, to place his ſon under Piccini, after that important buſineſs was done, in returning, to Rome, through the Pontine marſhes, he was ſeized by the mall' aria, like poor Burton, and died on the road.

Butler, William, born at Ipſwich, about the year 1535, was educated at Clare-hall, in Cambridge, where ſettling and practiſing medicine, he became one of the moſt popular phyſicians in his time, and was frequently ſent for, in caſes of difficulty to diſtant parts of the country. Sir Theodore Mayerne gives an account of a cure performed by him, in a violent defluxion on the face; and Wood quotes a caſe, in his account of Francis Preſham, eſq. in which he pronounced a patient to have taken poiſon, from the change produced on a piece of gold he had directed him to hold in his mouth; probably, ſays Aikin, it was a preparation of mercury that had been ſwallowed.

Dr. Wittie, in his preface to his "Tranſlation of Primeroſe's Vulgar Errors," ſays, he was in ſuch repute, that many empirics, after his death, ſold preparations under his name, which were much ſought for. He appears to have been a humouriſt, from various ſtories current concerning him; and perhaps, like Dr. Radcliffe, he owed much of his fame and fortune to that diſpoſition. In the year 1612 he was called in to attend prince Henry, with ſir Theodore Mayerne. He pronounced the fever to be a peſtilence, and gave little hopes of his recovery. Five years after, viz. January 29th 1617, he died in the 83d year of his age, and was buried in St. Mary's church, Cambridge. He left no writings, but the following elegant inſcription was placed on his tomb:

"Gulielmus Butlerus, Clarencis quondam ſocius, medicorum omnium quos præſens ætas vidit facile princeps, hoc ſub marmore ſecundum Chriſti adventum expectat; et monumentum hoc privata pietas ſtatuit, quod debuit publica. Abi viator, et, ad tuos reverſus, narra te vidiſſe locum in quo ſalus jacet."

Butler, in *Geography*, a county of America, in Pennſylvania, containing 3916 inhabitants, and divided into 4 townſhips.

Butler's *ale*. See Ale.

Butler'e *bay*, in *Geography*, lies on the north ſide of an iſland, in the ſtraits of Magellan; it is ſmall and ſurrounded with rocks. S. lat. 53° 37'. W. long. 74° 9'.

Butler's *ſtone*, a medicinal preparation of which the ancient chemiſts relate wonders. See Boyle's Works, Abr. vol. i. p. 50.

The inventor, from whom it takes its name, was a Scotchman, in great favour with king James I. and is ſaid to have done wonders with it, not only in the ſpeedy cure of the moſt dangerous diſtempers, but in the making of gold out of lead and quickſilver.

The preparation of this ſtone is given by Morley, Collect. Chym. Leyd. cap. 375.

Butler's *town*, in *Geography*, a town of North America on the weſt ſide of the head waters of the Ohio.

BUTLERAGE, or Prisage, in *Political Economy*, a very ancient hereditary duty belonging to the crown, which is conſiderably older than the cuſtoms, being taken notice of in the great roll of the exchequer, 8 Rich. I. ſtill extant. Priſage was a right of taking two tons of wine from every ſhip (Engliſh or foreign) importing into England twenty tons or more; one before and one behind the maſt; which by a charter of Edward I. called "Charta Mercatoria," (31 Edw. I. c. 1. & 2. 27 Edw. III. c. 26.) was exchanged into a duty of 2s. for every ton imported by merchant-ſtrangers, and called *butlerage*, becauſe it was paid to the king's butler. See Customs.

BUTMENTS, in *Architecture*, thoſe ſupporters or props, on or againſt which the feet of arches reſt.

Butments of arches are the ſame with buttreſſes. They anſwer to what the Romans call *ſublices;* the French, *culees* and *butees*.

The word comes from the French *bouter*, to abut or terminate on any thing; or rather from *buter*, to prop.

The name butment is alſo given to little places taken out of the yard, or the ground-plot of a houſe, for butteries, ſculleries, &c.

Butments, or Abutments of a bridge, denote the two maſſives at the end of a bridge, whereby the two extreme arches are ſuſtained and joined with the ſhore on either ſide. The butments of bridges next the banks ſhould be built more firm and ſolid, as ſerving to ſuſtain the whole ſeries of arches, and hinder them from ſpreading. See Bridge.

BUTNERIA, in *Botany*, Duh. See Calycanthus *floridus*.

BUTOA, in *Ancient Geography*, an iſland placed by Pliny among thoſe of Crete, between Ophiuſſa and Arados.

BUTOMUS, in *Botany*, (*βουτομος*, from *βους* ox, and *τεμνω* to cut; a name given by Theophraſtus to an aquatic plant, on account of its being greedily cropt by oxen, or as others think, with leſs probability, becauſe the ſharp edges of its ſtem wound their tongues and lips. Heſychius defines it, φυτον βουσι δεδομενον τροφην οιον χορτον, a plant given to oxen for food like graſs: and Suidas, φυταριον παραπλησιον καλαμω οπερ εσθιωσι οι βοες, a plant allied to the reed eaten by oxen. Caſpar. Bauhine ſuppoſes it to be his juncus floridus, the plant before us, to which Linnæus has ſince given the ancient name; others, the ſparganium ramoſum of Linnæus; and others, a ſpecies of iris.) Linn. gen. 507. Schreb. 693. Willd. 804. Gært. 86. Juſſ. 46. Vent. vol. 2. 158. Claſs and order, *enneandria hexagynia*. Nat. ord. *Tripetaloideæ*, Linn. *Junci*, Juſſ. *Aliſmoideæ*, Vent.

Gen. Ch. *Cal.* Involucre ſimple, three-leaved, ſhort. *Cor.* Petals ſix, roundiſh, concave, withering; three outer ones alternate, ſmaller, more acute. *Stam.* Filaments nine, awl-ſhaped; anthers bilameliate. *Piſt.* germs ſix, oblong, acuminate, ending in ſtyles; ſtigmas ſimple. *Peric.* Capſules ſix, oblong, gradually attenuated, erect, one-valved, opening on the inner ſide. *Seeds* numerous, oblong-cylindrical, obtuſe at both ends, fixed to the inſide of the capſule.

Eſſ. Ch. *Cal.* none. *Petals* ſix. *Capſules* ſix, many-ſeeded.

Species. B. *umbellatus.* Flowering ruſh, or water gladiole. Gært. Tab. 19. f. 3. La Marck, Illuſt. Pl. 324. Curt. Flor. Lond. 1. 29. Eng. Bot. 651. (Juncus floridus, Matth. Camer. J. Bauh. C. Bauh, Ray. Park. Rudb. Gladiolus aquatilis. Dod. Gerard. Johns.) *Root* perennial, horizontal, tuberous. *Leaves* all radical, linear, triangular, very entire, ſmooth, flat in the upper part, acute, near three feet long, erect. *Scapus* ſolitary, ſimple, round, taller than the leaves. *Umbel* terminal, ſimple, many-flowered. *Involucre* of three membranaceous, pointed leaflets. *Peduncles* bracteate at the baſe. *Flowers* variouſly ſhaded with roſe-colour, purple and white. *Stamens* ſpreading, equal, placed in a regular circle on the receptacle; filaments white; anthers red. *Germs* keeled, red. *Styles* ſhort; ſtigmas emarginate. A native of watery ditches and ponds in many parts of Europe, and a favourite of the Britiſh botaniſt, on account of its being the only indigenous plant of its claſs.

BUTONES, in *Ancient Geography*, a people placed by Strabo in Germany, and ſaid to be ſubdued by Maroboduus.

BUTONICA, in *Botany*. Rumph. La Marck, and Boſc. See Barringtonia *ſpecioſa*.

Butonica, Rumph. See Eugenia *acutangula*, and *racemoſa*.

BUTORIUS, in *Ornithology*, a name by which ſome have called the common bittern, Ardea stellaris.

BUTOW, in *Geography*, a town of Germany, in the circle of Upper Saxony, and Farther Pomerania, 39 miles N.E. of New Stettin.

BUTRINTO, anciently Buthrotum, a ſea-port town of Albania, in a gulf to which it gives name, in the canal of Corfu, the ſee of a Greek biſhop, ſuffragan of Janina. It belongs to the Venetians; 56 miles W.S.W. of Delfino. N. lat. 39° 45′. E. long. 20° 40′.

BUTRIUM, or Butrio, in *Ancient Geography*, a town of Italy, in the country of the Cenomani, according to Ptolemy, and placed by M. d'Anville north of Ravenna.

BUTSKOPT, (Marten) in *Zoology*, ſynonymous with buts-kopper.

BUTS-KOPPER, (Egede). See Delphinus orca.

BUTT, in *Agriculture*, a provincial term a applied to ſuch ridges or portions of arable land as run out ſhort at the ſides or other parts of fields.

Butt, in our *Ancient Cuſtoms*, denotes a place erected for archers to ſhoot at, and in which a mark or white was fixed.

Butt, in *Commerce*, is uſed for a veſſel, or meaſure of wine, containing two hogſheads, or 126 gallons.—Otherwiſe called pipe.

A butt of currants is from fifteen to twenty-two hundred weight.

Butt, in *Ship-building*, the end of a plank, or ſtrictly ſpeaking, that end of a plank which was neareſt the root of the tree. Each end of a plank is ſecurely bolted to a frame or timber, to prevent its riſing from the bottom or ſide of the ſhip, which, in that caſe, would be ſaid to have ſprung or ſtarted a butt. At ſea this is very dangerous, and difficult to get ſecured if the plank is under water. Butt alſo ſignifies the ground or largeſt end of all timbers.

Butts, or Backs, a denomination given to that ſort of tanned leather, which is prepared from the ſtouteſt and heavieſt ox hides, and chiefly uſed for the ſoles of ſhoes. For the proceſs of preparing it, ſee Tanning.

BUTTA, in *Ancient Geography*, a town of Africa, ſituate between the two Syrtes, N. of Tege. Ptolemy.

BUTTELSTETT, in *Geography*, a town of Germany, in the circle of Upper Saxony, and principality of Weimar; five miles N. of Weimar.

BUTTEN, a town of Arabia, 28 miles E. of Chamir.

Butter, William, was born at a town in Derbyſhire, in the year 1726. After the uſual ſchool education, he went to Edinburgh, and in 1761 took the degree of Doctor in Medicine, and publiſhed for his inaugural theſis, "Diſſertatio Medica et Chirurgica de Arteriotomia," 8vo. He then returned to Derby, where he practiſed medicine for about ten years, when he came and ſettled in London. In 1773 he publiſhed a treatiſe on the kink-cough, the name he gives to the tuſſis convulſiva, or whooping-cough. In the cure he relied principally on the efficacy of the extractum cicutæ, which he conſidered as a ſpecific in the complaint. Two years after, he gave an account of the puerperal fever, as it appeared in Derbyſhire and ſome of the adjacent counties, 8vo. and in 1794, a treatiſe on the diſeaſe commonly called angina pectoris. This diſeaſe was firſt deſcribed by Dr. Heberden. His account of it is publiſhed in the ſecond volume of "Medical Tranſactions," by the Royal College of Phyſicians. Dr. Butter had no doubt of its being a gouty affection, and calls it the diaphragmatic gout, and thinks it generally curable. In the fit he gives opium with aromatics. For the cure he recommends pills with aloes and ſoap, to keep the body ſoluble. Theſe with temperance, he ſays, will uſually ſucceed in putting an end to the complaint. While he was at Edinburgh, where he appears to have reſided about ſeven years, he publiſhed "A Method of Cure for the Stone, chiefly by Injections," 12mo. 1754, and "Diſſertatio de Frigore quatenus Morborum Cauſa," 8vo. 1757. He died at his houſe in Lower Groſvenor-ſtreet, March 21ſt, 1805. European Mag.

BUTTER, in *Rural Economy*, a fat unctuous ſubſtance prepared from milk by the proceſs of churning. It is a matter naturally diſtributed through the whole ſubſtance of the milk in very ſmall particles, which are interpoſed betwixt the caſeous and ſerous parts, amongſt which it is ſuſpended by a ſlight adheſion, but without being diſſolved. It is in the ſame ſtate in which oil is, in emulſions: hence the whiteneſs of both; and hence, by reſt, the oily parts ſeparate from both theſe liquors, to the ſurface, and form a cream. When butter is in the ſtate of cream, its proper oily parts are not yet ſufficiently concentrated to form an homogeneous maſs. While ſeparated by the interpoſition of a large quantity of ſerous particles, the butter cannot be completely formed; but by preſſing out theſe heterogeneous parts by means of continued percuſſion, by the well known operation of churning, it then becomes an uniform ſoft maſs.

Meſſrs. Parmentier and Deyeux, in a memoir on milk, (Mem. qui a remporté le premier prix, &c. Paris, 1791), inſtituted ſeveral experiments to aſcertain whether butter really exiſts in the cream, and is merely ſeparated by agitation, or by the act of churning, or whether this proceſs effectuates a chemical change. They incline to the latter opinion; becauſe they found that the ſeparation of the particles of butter could not be produced in any other manner; cream left in the milk yields fat cheeſe, but not butter. The oily parts do not riſe into butter by expoſure of cream to heat, nor by boiling it. The application of acids by ſeparating the cheeſy matter blended with the cream, inſtead of facilitating, retards the fermentation of butter. Half an ounce of oil was mixed with four ounces of cream; this was gently agitated and expoſed to moderate heat; part of the oil ſwam on the ſurface, without uniting with the buttery particles in the cream; the other part rendered the fermentation of butter more difficult, and its conſiſtence ſofter. Thus, whether ſolvents were applied to attach the buttery or cheeſy particles of the cream, agitation was ſtill neceſſary, and the change into butter was rendered more difficult.

Different methods are employed in obtaining and preparing this ſubſtance from milk as well as in managing and preſerving it for uſe. See DAIRYING.

BUTTER, *Whey*, an inferior ſort of butter made from whey in extenſive cheeſe dairies. It is prepared in different methods in different dairy-diſtricts. See DAIRYING.

BUTTER, *Hiſtory of.* The word *butter* is formed from βȣτυρον, a compound of βȣς, *cow*, and τυρος, *cheeſe*; q. d. *cow's-cheeſe.* Some authors, from a regard to this etymon, affect to write the word *buttyr* and *butyr.* This is the etymology adopted by the Grecian and Roman authors. Cheeſe was known to them at a much earlier period than butter: and it is therefore poſſible, that, at firſt, they might have conſidered the latter as a kind of cheeſe, ſince it appears that τυρον once ſignified any kind of coagulated ſubſtance. But to the firſt ſyllable of the word, it has been objected, that the Greeks uſed the milk of ſheep and goats much earlier than cow's milk; and, for this reaſon, ſome have conjectured, that this firſt ſyllable was added, agreeably to the cuſtom of the Greeks, in order to magnify the object, or to expreſs a ſuperior kind of cheeſe. Varro, de Re Ruſtica, II. 5. p. 274. Vigerus, de præcipuis Græcæ Dictionis Idiotiſmis, Lugd. Bat. 1684. p. 40. Others have ſuppoſed, that the name βȣτυρον is not originally Greek, but that it might have been introduced into Greece from ſome foreign country, together with the theory which it expreſſes. Accordingly, the term has been thought to be of Scythian extraction.

Butter, though commonly uſed at preſent in moſt parts of Europe, was not known, or very imperfectly known to the ancients. The ancient tranſlators of the Hebrew writers, however, ſeem to have thought, that they found it mentioned in ſcripture, (Bochart Hierozoicon, II. 45. p. 473.) Accordingly, they have referred to the following paſſages: Gen. xviii. 8. Deuteron. xxxii. 14. Judges v. 25. 2 Sam. xvii. 29. Job. xx. 17. xxix. 6. Prov. xxx. 33. Iſaiah vii. 15. 22. But biblical critics agree, that the word חמאה, *chameah*, ſignifies milk or cream, or ſour thick milk; and ſome of them who doubt or deny the early uſe of butter among the Eaſtern nations, will not allow that it denotes butter. See Michaelis's Suppl. ad. Lexic. Heb. pars i. p. 807. The word, it is ſaid, plainly alludes to ſomething that is liquid; and it appears, that *chameah* was uſed for waſhing the feet, that it was drank, and that it had the power of producing intoxication; and it is known, that mare's milk, when ſour, will produce the like effect. It is further ſaid, that we may conceive of ſtreams of milk, but not ſtreams of butter. The error has been aſcribed to the LXX interpreters who have tranſlated the Hebrew term by the word βȣτυρον, *boutyron.* Theſe tranſlators who lived 200 years after Hippocrates, and who reſided in Egypt, might, as Michaelis ſuggeſts, have been acquainted with butter, or have heard of it; but it is highly probable, that they meant cream, and not our uſual butter. According to the common tranſlation, indeed, it may be concluded, that the paſſage in Proverbs, ch. xxx. deſcribes the preparation of butter by ſhaking or beating; but the original words מיץ חלב, *chaleb metz*, ſignify ſqueezing or preſſing, *frictio mulgentis educit lac;* ſo that milking and not making is ſuppoſed to be alluded to in this paſſage. It was late before the Greeks appear to have had any notion of butter. Homer, Theocritus, Euripides, and the other poets, make no mention of it: and yet they frequently ſpeak of milk and cheeſe; nor does Ariſtotle, who has collected ſeveral curious particulars relating to the other two, ſay any thing of butter. At firſt, indeed, he gives milk only two component parts, the watery and the caſeous; and he remarks afterwards, for the firſt time, and in a place where it would be little expected, (Hiſt. Anim. iii. 20. p. 388.) that in milk there is alſo a fat ſubſtance, which, under certain circumſtances, is like oil. Herodotus is the moſt ancient writer, who, in his account of the Scythians, (l. iv. 2.) particularly deſcribes the proceſs uſed among them for making butter; and this circumſtance affords a preſumption, that butter was not then in uſe among the Greeks, and that they muſt have acquired it from the Scythians. The word βȣτυρον firſt occurs in Hippocrates, (De Morbis, l. iv. ed. 1595. fol. 5. p. 67.) who was almoſt contemporary with Herodotus, as both of them flouriſhed in the fifth century before Chriſt. "The Scythians," ſays Hippocrates, "pour the milk of their mares into wooden veſſels, and ſhake it violently; this cauſes it to foam, and the fat part, which is light, riſing to the ſurface, becomes what is called butter, (ὃ βȣτυρον καλεȣσι.). The heavy and thick part, which is below, being kneaded and perfectly prepared, is, after it has been dried, known by the name of "hippace." The whey or ſerum remains in the middle."

In this paſſage the author ſpeaks very diſtinctly of butter, cheeſe, and whey. Butter is often mentioned by Hippocrates, and he preſcribes it externally as a medicine under the appellation πικεριον, *pikerion*, which ſeems to have been in earlier uſe among the Greeks than the term βȣτυρον, or butter. In the time of Galen this term *pikerion*, which the Greeks ſeem to have borrowed from the Phrygians, had ceaſed to be in uſe; and it is not to be found in Heſychius, Suidas, or Pollux. The poet Anaxandrides, who lived ſoon after Hippocrates, (ſee Fab. Bib. Græc. i. 666. 740.) deſcribing the wedding of Iphicrates, who married the daughter of Cotys, king of Thrace, and the Thracian entertainment given on that occaſion, ſays, that the Thracians ate butter, which the Greeks at that time conſidered as a wonderful kind of food. Athenæi, Deipnoſ. l. iv. p. 131, and Caſaubon. Animadv. in Athen. l. iv. c. 3. p. 248. Strabo, in three paſſages (viz. l. 3. v. i. p. 233. l. xv. vol. ii. p. 1031. and l. xvii. vol. ii. p. 1176.) refers to butter. In the former, he ſays, that the Luſitanians uſed butter inſtead of oil; and in the laſt he mentions the ſame circumſtance reſpecting the Æthiopians, who, as Ludolfus informs us, (Hiſt. Æthiop. l. iv. 4. 13.) were acquainted with butter; and in the third Strabo relates, that elephants, when wounded, drank this liquid in order to make the darts fall from their bodies. The genuineneſs

neſs of this latter paſſage is doubted, as Ariſtotle, Pliny, and Ælian ſay that theſe animals uſed oil for this purpoſe. Ælian, indeed, (lib. xiii. c. 7.) ſays, that the Indians anointed the wounds of their elephants with butter. Plutarch, (Adverſus Colotem, apud Op. t. ii. p. 1109. ed. Xyland.) informs us, that a Spartan lady paid a viſit to Berenice, the wife of Deiotarus, and that the one ſmelled ſo much of ointment, and the other of butter, that neither of them could endure the other. Dioſcorides, about the year 33 B. C. (Mat. Med. ii. 81. p. 107.), ſays, that good butter was prepared from the fatteſt milk, ſuch as that of ſheep or goats, by ſhaking it in a veſſel till the fat was ſeparated; and he aſcribes the ſame effects to it, when applied externally, as thoſe produced by our butter at preſent. Dioſcorides is the firſt writer who obſerves, that freſh butter might be melted and poured over pulſe and vegetables inſtead of oil, and that it might be employed in paſtry in lieu of other fat ſubſtances. From him alſo we learn, that a kind of ſoot was prepared from butter, for external applications, and that it was uſed in curing inflammation of the eyes and other diſorders. For this purpoſe the butter was put into a lamp, and, when conſumed, the lamp was again filled, till the deſired quantity of ſoot was collected in a veſſel placed over it. Galen, who diſtinguiſhes and confirms in a more accurate manner the healing virtues of butter, obſerves, that cow's milk produces the fatteſt butter; that butter made from ſheep's or goats' milk is leſs rich; and that aſſes' milk yields the pooreſt butter. He expreſſes his aſtoniſhment that Dioſcorides ſhould ſay, that butter was made from the milk of ſheep and goats; he aſſures us, that he had ſeen it made from cow's milk, and that he believes it had thence acquired its name. De Simplic. Med. Facult. l. x. p. 151. ed. Baſil. ii. p. 134. "Butter," ſays he elſewhere (De Aliment. Facult. iii. cap. 15. p. 54. ed. Baſil. iv. p. 340.) "may be very properly employed for ointments; and when leather is beſmeared with it, the ſame purpoſe is anſwered as when it is rubbed over with oil." In cold countries, which do not produce oil, butter is uſed in the baths; and that it is a real fat may be readily perceived by its catching fire when poured over burning coals. From the circumſtances above recited we may infer, that butter muſt have been very little known to, or uſed by, the Greeks and the Romans in the time of Galen, who wrote at Rome and lived at the end of the ſecond century of the Chriſtian æra.

The Roman writers, who give an account of the ancient Germans, relate, that they lived principally on milk. Some ſay, that they uſed cheeſe, whilſt others affirm that they were unacquainted with the method of preparing it. Strabo, (lib. iv. vol. i. p. 305), ſpeaking of the ancient Britons, ſays, that ſome of them were ſo ignorant, that though they had abundance of milk, they did not underſtand the art of making a cheeſe; but by his mode of expreſſion he intimates, that they were not all equally unacquainted with this art. Pliny, on the other hand, ſays, (N. H. lib. xxviii. c. 9. § 35.) that the barbarous nations not only made cheeſe, but butter, which they uſed as a moſt pleaſant kind of food, and that it diſtinguiſhed the rich from the poor; and to them he aſcribes the invention of it. By "barbarous nations," this author moſt commonly means the Germans and Britons, becauſe they were not thoroughly ſubjected to the Roman government, nor inſtructed in the Roman arts. He obſerves that butter was commonly made from the cow, the fatteſt from the ſheep, and that it was alſo made from goats' milk; that in cold weather the milk was warmed, but that in ſummer this precaution was not neceſſary. The veſſel, employed for making it ſeems, from his deſcription, to have reſembled ſuch are as now uſed; he ſays it was covered, and that in the lid there were holes. Whether Tacitus by "lac concretum," (De Moribus Germanorum, cap. 23.), which, according to him, was the moſt common food of the Germans, meant cheeſe or butter, is not eaſily determined.

From what has been above ſaid it appears, that butter is not a Grecian, much leſs a Roman, invention; but that the Greeks were made acquainted with it by the Scythians, the Thracians, and the Phrygians, and the Romans by the people of Germany. It appears alſo, that when they had learned the art of making it, they employed it only as an ointment in their baths, and particularly in medicine. Columella, (l. vi. 12. p. 582.) and not Pliny, is, as Voſſius thinks, the firſt Latin writer, who makes uſe of the word "butyrum." Pliny (l. xxviii. c. 19.) recommends it mixed with honey to be rubbed on children's gums, in order to eaſe the pain of teething, and alſo for ulcers in the mouth. The Romans, in general, ſeem to have uſed butter for anointing the bodies of their children to render them pliable; and we are told by Sidonius Apollinaris (carm. 12.) that the ancient Burgundians beſmeared their hair with it. Clemens Alexandrinus (Pædag. i. p. 107.), informs us, that the ancient Chriſtians of Egypt burnt butter in the lamps at their altars inſtead of oil; and the Abyſſinians have retained a ſomewhat ſimilar practice. It is certain, from the above detail, that butter was uſed neither by the Greeks nor Romans in cookery, or the preparation of food. It is never mentioned by Galen, and others, as a food, though they have ſpoken of it as applicable to other purpoſes. No notice is taken of it by Apicius; nor is any thing ſaid of it in that reſpect by the authors who treat on agriculture, though they have given particular information concerning milk, cheeſe, and oil. Indeed, the ancients had uſually accuſtomed themſelves to the uſe of good oil; and butter in later times has been very little employed in Italy, Spain, Portugal, and the ſouthern parts of France, where it has been ſold in the ſhops of apothecaries for medicinal purpoſes. In warm countries it has been found difficult to preſerve it for any length of time. In the Roman churches it was anciently allowed during Chriſtmas time, to uſe butter inſtead of oil, on account of the great conſumption of it in other ways. Accordingly, in the cathedral of Rouen, there is a tower called the "butter-tower," *tour du beurre*, becauſe George d'Amboiſe, archbiſhop of Rouen, in 1500, finding the oil fail in his dioceſe during Lent, permitted the uſe of butter, on condition that each inhabitant ſhould pay ſix deniers for the liberty, with which ſum this tower was erected. There are other butter-towers at Notre Dame, Bourges, &c.

From the account of the method of making butter tranſmitted to us by the ancients, we have reaſon to ſuppoſe, that they were not acquainted with the art of making it ſo compact and firm as that of more modern times; but it ſeems to have been in an oily, or almoſt liquid ſtate. Butter is ſpoken of as ſomewhat fluid. The moderns cut, knead, and ſpread butter; but the ancients poured it out like oil; and it is repreſented by the Greek tranſlators of the ſcripture as flowing in ſtreams. On this account the butter of the ancients would not be long kept or eaſily tranſported; and the uſe of it muſt have been very limited. See Beckmann's Hiſt. of Inventions, vol. ii.

In different ages and nations various proceſſes have been uſed for making butter. In Barbary, the effect of the operation, which we call "churning," is produced by putting the cream into a goats' ſkin turned inſide out, which the Arabs ſuſpend in their tents, and then preſs to and fro in one uniform direction. In this way they quickly occaſion the neceſſary ſeparation of the unctuous and wheyey parts. Shaw's Travels, p. 168. Dr. Chandler (Travels in Greece, p. 217.) took notice in his way from Athens to Corinth of another mode of churning practiſed in the Levant; which was that of treading on ſkins of cream in order to ſeparate the butter from its more watery part: and this practice, as ſome have ſuppoſed, throws light on a paſſage of Job (ch. xxix. 6), that has hitherto been ſomewhat obſcure. Harmer's Obſervations, vol. iii. p. 172.

In Bengal, butter is eaſily made by the ſlight turning of a ſtick in milk; and when they would make butter paſs for freſh when it is old and rank, they melt it and pour upon it ſour curdly milk; ſome hours after which they ſtrain it through a cloth for ſale. For an account of other proceſſes, relating to the making, curing, and preſerving of butter, ſee Dairying.

Butter, in *Commerce*. The trade of butter is very conſiderable. The butter made in the county of Eſſex, and well known under the name of Epping butter, is that which is moſt highly eſteemed in London and its vicinity. This appellation, in the more reſtricted uſe of it, is applied to that butter which is made from the milk of cows that feed during the ſummer months in Epping-foreſt, where the leaves and ſhrubby plants contribute to improve its flavour. For the method of making this butter, ſee Dairying. It is made up for market in long rolls, weighing a pound each; and in the county of Somerſet the ſame kind of butter is diſhed in half-pounds for ſale, rubbing ſalt round the inſide of the diſh, ſo as to make it in the working appear handſome. In many parts of the kingdom they colour their butter in winter; but by ſuch means they do not enhance its goodneſs. It rarely happens that the farmers in or near Epping uſe any colour, and if they do, it is very innocent. They procure ſome ſound carrots, the juice of which they preſs through a ſieve, and mix with the cream when it enters the churn, which makes it appear like May butter: nor do they at any time uſe much ſalt, though a little is abſolutely neceſſary. The Cambridgeſhire ſalt butter is held in the higheſt eſteem, and is made nearly after the ſame method as that of Epping; and, by waſhing and working the ſalt from it, the cheeſemongers in London often ſell it, at a high price, for freſh butter. It is depoſited, when made, in wooden tubs, or firkins, each containing 56 pounds, which are expoſed to the air for two or three weeks, and often waſhed; but the moſt ready method of ſeaſoning them is by the uſe of unſlaked lime, or a large quantity of ſalt and water well boiled, with which they ſhould be ſcrubbed ſeveral times, and afterwards thrown into cold water, where they ſhould remain three or four days, till they are wanted. They ſhould then be ſcrubbed as before, and well rinſed with cold water; but before they receive the butter, care muſt be taken to rub every part of the inſide of the firkin with ſalt. Then, if the butter be properly made and perfectly ſweet, it may be gently preſſed into the firkin; but it muſt be well ſalted when it is made up, and the ſalt ſhould be equally diſtributed through the whole maſs, and a good handful of it be ſpread on the top of the firkin; after which the head ſhould be immediately put on. They purſue nearly the ſame method in Suffolk and in Yorkſhire; nor is the butter made in thoſe counties much inferior to that made in Cambridgeſhire; indeed, it is often ſold in London for Cambridge butter. Uttoxeter in Staffordſhire has been long a market famous for good butter, with which the London cheeſemongers are ſupplied. It is bought by the pot, of a long, cylindrical form, weighing 14 pounds. The mountains of Wales, the highlands of Scotland, and the moors, commons, and heaths of England, produce excellent butter, under proper management; and though not equal in quantity, it is far ſuperior in quality to that which is produced from the richeſt meadows.

Butter, in its natural ſtate, contains a conſiderable proportion of mucilaginous matter which is more putreſcible than the pure oily parts. When it is propoſed, therefore, to expoſe the butter to the heat of warm climates, it ought to be freed from that mucilage, before it be covered and packed for keeping. In order to prepare butter for a diſtant voyage in warm climates, it ſhould be put into a veſſel of a proper ſhape, which ſhould be immerſed into another containing water. Let the water be gradually heated, till the butter be thoroughly melted; in that ſtate let it continue for ſome time, and be allowed to ſettle; the mucilaginous part will fall entirely to the bottom, and the pure oil will ſwim at top, perfectly tranſparent, while hot: but when it cools, it becomes opaque, aſſumes a colour ſomewhat paler than the original butter, before it was melted, and a firmer conſiſtence, more nearly reſembling that of tallow; and conſequently it will better reſiſt the heat of a warm climate than common butter. When this refined butter is become a little ſtiff, and while it is ſtill ſomewhat ſoft, the pure part ſhould be ſeparated from the dregs, then ſalted, and packed up in the ſame way with other butter; this will retain the ſalt better, and keep much longer ſweet, in hot climates, than if it had been cured in its original ſtate. This refined butter may be preſerved by adding to it, after it has been purified, a certain proportion of fine honey; mixing them well, ſo that they may thoroughly incorporate. This mixture has a pleaſant taſte, and ſpread on bread, is uſeful for coughs and colds. It will keep for years, without manifeſting the ſmalleſt tendency to rancidity; and of courſe butter might be thus preſerved in long voyages without ſpoiling. Dr. Anderſon ſuggeſts, that one ounce of honey might be ſufficient to preſerve 16 ounces of butter.

By 36 Geo. III. c. 86. the 13 & 14 C. II. c. 26. and ſo much of 4 W. c. 7. as diſcharges perſons from the effect of any part of 13 & 14 C. II. for preventing frauds in the ſellers of butter, after the factor or buyer hath contracted for the ſame, are repealed; and new regulations are made reſpecting the packing, weight and ſale of butter, which are as follows:—every cooper or other perſon, who ſhall make any veſſel for the packing of butter, ſhall make the ſame of good and well-ſeaſoned timber, light and not leaky, and ſhall groove in the heads and bottoms thereof: and every ſuch veſſel ſhall be a tub, firkin, or half-firkin, and no other, capable of containing the ſeveral quantities of butter hereinafter mentioned; viz. every tub ſhall weigh of itſelf, including the top and bottom, not leſs than 11lb. nor more than 15lb. avoirdupois weight, and neither ſuch top nor bottom ſhall be more than $\frac{5}{8}$ths of an inch thick in any part thereof, and ſhall be capable of containing 84lb. of butter, and not leſs; every firkin ſhall weigh of itſelf, including the top and bottom, not leſs than 7lb. nor more than 11lb. and neither the top nor bottom ſhall be more than $\frac{4}{8}$ths of an inch thick in any part, and ſhall be capable of containing not leſs than 56lb. of butter: and every half-firkin ſhall weigh of itſelf, including the top and bottom, not leſs than 4lb. nor more than 6lb. and neither the top nor bottom ſhall be more than $\frac{3}{8}$ths of an inch thick in any part, and ſhall be capable of containing not leſs than 28lb. of butter, on pain of forfeiting by the cooper or other perſon making the ſame, 10s. for every ſuch veſſel. The maker ſhall brand on the outſide of the bottom with an iron, his name at full length in permanent and legible letters, together with the exact weight or tare thereof, on the like penalty. And by 38 Geo. III. c. 73. every maker ſhall mark in like manner his place of abode, or dwelling, after his name, on the ſame penalty. By 36 Geo. III. c. 86. every dairy-man, or ſeller of butter, or perſon packing butter for ſale, ſhall pack it in ſuch veſſels, properly ſoaked and ſeaſoned, branding his name after ſuch ſeaſoning on the bottom within, and on the top without; and alſo on the outſide of the top, and on the bouge or body thereof, the true weight or tare of ſuch empty veſſel ſo ſeaſoned, and his name on the body, acroſs two different ſtaves; and he ſhall diſtinctly and at full length, imprint his name upon the top of the butter in ſuch veſſel when filled; on pain of forfeiting 5l. for every ſuch offence: the quantities to be packed, ſhall be, excluſively of the tare of the veſſel, in every tub not leſs than 84lb.; firkin 56lb. and half firkin 28lb. of good and merchantable butter; and no butter which is old or corrupt, ſhall be mixed or packed up into any ſuch veſſel, with that which is new churned; nor ſhall any whey butter be packed or mixed with that which is made of cream; and no butter ſhall be ſalted with great ſalt, but with fine ſmall ſalt, and not intermixed with more than is needful for its preſervation, on pain of forfeiting 5l. Any fraud with regard to the veſſel or butter, marks or ſtaves, &c. ſhall render the perſon concerned in it liable to a forfeiture of 30l. for every ſuch offence. Factors buying or ſelling butter in veſſels not legally marked according to the acts, ſhall forfeit 20s. for every ſuch offence: and cheeſemongers and other dealers in butter, having in their poſſeſſion any veſſel containing butter for ſale, not externally marked, ſhall forfeit 10s. for every ſuch offence: and they are required to deliver the full quantity, or be liable to an action for recovery of ſatisfaction with coſts: nor ſhall they repack butter for ſale, on pain of forfeiting 5l. for every tub, firkin, or half firkin ſo repacked. Foreign butter, however, may be repacked in ſuch veſſels, the name of the original ſeller being eraſed, and the name of the perſon ſelling being marked with an iron brand, in words at length, together with the words, "foreign butter," upon the body of every ſuch veſſel: counterfeiting, or forging marks ſubjects to a penalty of 40l. All penalties above 5l. are to be recovered in the courts at Weſtminſter; and thoſe not exceeding 5l. may be determined by one juſtice, and levied by diſtreſs and ſale of the offender's goods, for the uſe of the informer; or for want of ſufficient diſtreſs, the offender may be committed to the gaol or houſe of correction, without bail, for a time not exceeding 3 calendar months, not leſs than 28 days. Every information or proſecution muſt be commenced, within four months after the offence committed.

The ſtatute 4 W. c. 7. regulates the ſhipping of butter and cheeſe for London; the perſon ſhipping ſhall receive for his pains 2s. 6d. for every load; and if he ſhall make default, he ſhall forfeit on conviction before one juſtice; for every firkin of butter 10s. and for every weigh of cheeſe 5s. half to the poor, and half to the informer, to be levied by the conſtable by diſtreſs and ſale. He ſhall keep a book of entry, for receiving and ſhipping the goods, under the penalty, of 2s. 6d. for every firkin of butter, &c. The maſter of a ſhip refuſing to take in butter or cheeſe, before he is full laden, ſhall forfeit for every firkin of butter 5s. and for every weigh of cheeſe 2s. 6d. This act does not extend to any warehouſe in Cheſhire or Lancaſhire. In the act of 8 Geo. c. 27. there are ſpecial directions concerning the ſale of butter in the city of York; and in 17 Geo. II. c. 8. concerning the ſame in New Malton.

Butter, in its reference to *diet* and *medicine*, may be regarded as reſembling in its ſenſible qualities, and in conſequence of a chemical analyſis, the expreſſed and unctuous oils of vegetables, and animal fats. Butter, by diſtillation in the water bath, gives out a portion of watery fluid, that either remained interpoſed between its parts from the firſt, or was taken up during the waſhing which it undergoes in the proceſs of making. A ſtronger heat, carefully managed, expels firſt a ſtrong acid of a penetrating ſmell, which is followed by a concrete coloured oil, poſſeſſing the ſame odour. Very little coal remains: the acid appears to be of the ſame nature as that diſtinguiſhed by the name of the acid of fat; and it may be alſo obtained from butter by means of lime, or an alkali. See Fat and Oil. Butter, like the other mild and fat oils, is liable to a change called "Rancidity;" and it becomes rancid ſooner than moſt other fat oils, probably on account of the water, which may favour the developement of its acid. Waſhing with water, or ardent ſpirit, reſtores it in ſome meaſure to its former ſtate, by carrying off the diſengaged parts of the acid. Butter, not well freed from the milk, more readily becomes rancid, than that which is more entirely ſeparated from it; and butter by being melted, and freed from a depoſit which it makes, on being kept for ſome time in a melted ſtate, may thus be longer preſerved from rancidity. By the application of ſalt, the rancidity of butter is obviated; and the more perfect the ſalt is, the greater is its efficacy, and a leſs quantity will ſuffice: and if at the ſame time we aſſiſt its antizymic power, by the addition of a ſmall quantity of nitre, ſugar, and honey, we may then preſerve butter very long in a condition fit to be uſed as an aliment. The rancidity of butter, according to the experiments of Parmentier and Deyeux, (Memoire qui a remporté le premier prix, &c. 1790,) is found to proceed entirely from the coagulable, or cheeſy matter which is mixed with it. The quantity of this mixture is increaſed by the economical method of warming the milk, in order to increaſe the quantity of cream, and by leting the cream remain for too long a time before it is churned. Thus the cream that riſes without the aid of warmth, and that is formed into butter, while perfectly freſh, will yield the moſt delicate kind, and may be preſerved for the longeſt time. Whether the oily part of milk is moſt ſafely employed in the ſtate of cream, when it is joined with ſome portion of the caſeous and ſerous parts, or when it is more entirely ſeparated from theſe in the ſtate of butter, is a queſtion that has not been abſolutely determined. Dr. Cullen (Mat. Med. Vol. i. p. 349,) expreſſes his opinion, that a quantity of oil in the ſtate of cream will be more eaſily digeſted than an equal quantity of the oily part in the ſtate of butter. Some difference, however, in this matter may ariſe from the difference of ſtomachs, more or leſs diſpoſed to digeſt oils; and perſons have been known, who could digeſt cream better than butter. Another difference may alſo ariſe from the ſtomach being more or leſs diſpoſed to acidity; and in the more aceſcent ſtomach, cream may be more offenſive than butter. Butter, as a wholeſome aliment, ſhould be freſh and free from rancidity, and not fried or burnt; otherwiſe it will diſorder digeſtion, and be injurious. As to its medical effect, butter, as well as the other olea blanda, or mild oils, is conſidered as a laxative. To this purpoſe Dr. Cullen obſerves, that a perſon, being adviſed to take as a medicine, every morning, four ounces of freſh butter, found its conſtant effect to be that of producing a ſtool or two more than uſual. By ſome it has been ſuppoſed, that it has a tendency to ſtop in the capillaries and glands, and to foul the viſcera; whence proceed blotches and cutaneous diſeaſes.

Butter, *clarified*, is newly churned butter, without ſalt, melted over a clear fire, and having the curdly part ſkimmed off. Two ſpoonfuls of the clarified remainder have been recommended

commended to be given twice or thrice a day, as a ſort of ſpecific againſt the bloody flux, and defluxions of the eyes and breaſt.

BUTTER, *May*, BUTYRUM *Majale*, is a medicine in ſome repute among good women, for ſtrains, aches, and wounds. It is made of butter churned at that time, and expoſed to the ſun of the whole month, till, by repeated fuſions, it be brought to a whiteneſs. Helmont calls it *magiſtery of graſs*. Quincy affirms it is no better that plain lard.

Naturaliſts ſpeak of ſhowers and dews of butter. See DEW.

BUTTER-*milk*, in *Rural Economy*, the milk which is left after the butter has been ſeparated by means of churning or other proceſſes.

In ſome diſtricts this ſort of milk is either ſold to the poor, or made uſe of by the farmer's ſervants. But in large dairies it is moſt frequently employed as a food for hogs, and in moiſtening the bran which is given to the poultry in the farm-yard. See DAIRYING.

Butter-milk is commonly procured from milk after it has been kept ſome time, and has become more or leſs acid; but it may be procured from any recent milk, and in this caſe, it is not acid, and only differs from entire milk by the abſence of its oily parts. In this ſtate it is ſtill tolerably nouriſhing; and being often more eaſily digeſted than entire milk, it has been employed in phthiſical caſes with greater advantage than either the entire milk, or the watery parts of it in a more acid ſtate. It is however, in this laſt ſtate, that it is moſt commonly employed; and it is highly uſeful in all caſes where the refrigerant powers of milk are required. As the longer it has been kept it ſeems to have its acidity increaſed, ſo it proves more powerfully refrigerant. Some have imagined, that in certain caſes it might be dangerous, but unleſs when drank in very large quantity, or when the body is very warm, Dr. Cullen ſays, that he has not perceived its bad effects; and in the laſt caſe, it is probable that cold water would have been equally injurious. With reſpect to the acid of butter milk, or other acid ſtates of the watery part of milk, it is worth obſerving, that ſuch acid does not increaſe the aceſcency of the ſtomach, or occaſion the flatulency that recent vegetable acids and aceſcents commonly do; and therefore it is more ſafely than theſe employed by dyſpeptic perſons. Cullen, Mat. Med. vol. i. p. 353.

BUTTER-*bump*, or *bittern*, in *Ornithology*. See ARDEA *ſtellaris*.

BUTTER-*bur*, in *Botany*. See TUSSILAGO *petaſites* and *hybrida*.

BUTTER-*cup*. See RANUNCULUS *acris*.

BUTTER *jags*. See MEDICAGO *falcata*.

BUTTER-*nut*, a fruit in New England, whoſe kernel yields a great quantity of ſweet oil.

BUTTER-*wort*. See PINGUICULA.

BUTTER, *Butyrum*, is alſo uſed to expreſs ſeveral chemical ſubſtances—as *butter* of ANTIMONY, of ARSENIC, of BEN, of BISMUTH, of CACAO, of FLAX, of SATURN, of TIN, of WAX, &c. on account of their form of conſiſtence reſembling that of butter.

BUTTER *of ſtone*, a kind of mineral drug found on the higheſt mountains, and hardeſt rocks of Siberia, being drawn by the ſun's heat, in the way of tranſudation, from the dry ſubſtance of the ſtones themſelves, and adhering to the ſurface thereof like a ſort of calx, which having received its full coction, is ſcraped off by the inhabitants under the name of *kamine maſla*. The Ruſſians aſcribe many virtues to it. It is much uſed for the dyſentery and venereal diſeaſes; but its operation is ſo violent, however corrected by other ingredients, that none but the Ruſſians dare uſe it.

BUTTER, *vegetable*. See SHEA-*trees*.

BUTTERANT, in *Geography*, a village of the county of Cork, in Ireland, remarkable for the ruins of ſeveral eccleſiaſtical buildings. It was formerly a corporate town, governed by a mayor and aldermen, but it is now gone to decay. The ruins, which are ſituated on a precipice above the river Owbeg, have a very pictureſque appearance. The poet Spencer lived in this neighbourhood. Diſtance S.W. from Dublin 130½ miles, and 21 miles N. by W. from Cork.

BUTTERFELDE, a town of Germany, in the circle of Upper Saxony, and New Mark of Brandenburg; 5 miles N. of Barwalde.

BUTTERFIELD, a ſettlement of America, in Cumberland county, and diſtrict of Maine, containing 189 inhabitants, and lying about 43 miles N. from Falmouth, on Caſco bay; having Butterfield-ſlip on the north, and Bucktown on the ſouth.

BUTTERFISH, in *Ichthyology*, a ſmall ſpecies of the BLENNIUS genus, called ſpecifically by naturaliſts *gunnellus*, and the *ſpotted blenny*: it is diſtinguiſhed by the name of *butterfiſh* by the inhabitants on ſeveral of the Engliſh coaſts. Donov. Brit. Fiſhes. See BLENNIUS GUNNELLUS.

BUTTERFLY, in *Entomology*. See PAPILIO.

BUTTER-FLY, *ſatyrion*, in *Botany*. See ORCHIS.

BUTTERFLY *fiſh*, in *Ichthyology*, an Engliſh name of the ocellated blenny, *Blennius ocellaris*, a fiſh found in the Mediterranean ſea: and which is diſtinguiſhed by having a large black ocellar ſpot in the anterior part of the dorſal fin, whence this fiſh is ſuppoſed to bear a fanciful reſemblance to the wing of a butterfly.

BUTTERHILL, in *Geography*, a high round hill of America, on the weſt bank of Hudſon river, at the northern entrance of the High-lands.

BUTTERIS, in *Farriery*. See BUTTRESS.

BUTTERMERE, in *Geography*, a village of Cumberland, in England, is ſeated in a part of the country which has been frequently admired and deſcribed by topographers and touriſts. The majeſtic mountains, and tranſparent lakes of this diſtrict, preſent thoſe wild and delightful features of landſcape, which cannot fail to awaken ſenſations of pleaſure and delight. The village has nothing peculiar to excite notice, but the water or lake, which gives name to the place, is particularly beautiful. It occupies an area of about one mile and a half in length, by half a mile in breadth. Its weſtern ſhore is hemmed in by a range of rugged mountains, riſing abruptly from the margin of the water. Theſe aſſume a dark and heavy aſpect, and are known to the ſhepherds, who are almoſt the only perſons that trace their craggy ſteeps, by the names of Hay-cock, High-crag, High-ſtile, and Red-pike. The eaſtern ſhores riſe more gently, are partially wooded, and admit of cultivation at a ſhort diſtance from the lake; the north end is ſkirted by the verdant vale of Buttermere, and the ſouthern extremity is bounded by Honiſter-crag, which forms an abrupt termination to a chain of mountains. From this ſteep, numerous torrents are continually pouring down their foaming waters into the lake: one of theſe cataracts falls between four and five hundred yards. The river which furniſhes the principal ſupply of water to the lake, flows through Gateſgarth-dale, which is deſcribed by Mr. Gilpin as a moſt ſingular and tremendous ſcene. It winds ſlowly and ſolemnly in one large ſegment; being a narrow concave valley, the ſides of which are almoſt perpendicular, and compoſed of a broken craggy rock. The river which runs through this valley, is as wild as the valley itſelf. It has no banks, but the fragments of rocks, no bed but a channel compoſed of rock ſtrata, among which the water forces its courſe. The middle of the valley is adorned, as theſe valleys in ſome parts are, by a craggy hill; on the top of which ſtands the fragment of a rock, that looks, in Oſſian's language, like the *ſtone of power*, the rude deity of deſolation to which the ſcene is ſacred. Gilpin's Tour to the Lakes, &c.

Butter-*nuts*, a poſt-town of America, in St. Jago county, New York, 25 miles S.W. of Coopers-town, containing 1388 inhabitants.

BUTTERY.—Officers in the king's buttery are a gentleman, yeoman, and three grooms of the buttery. The buttery among us is uſually placed near the cellar; being commonly the room next the top of the cellar ſtairs.

BUTTHARD, in *Geography*, a town of Germany in the circle of Franconia, and biſhopric of Wurzburg.

BUTTING, *imbotare*, in *Middle Age Writers*, is uſed for tunning of wine, or putting it into butts.

Butting-*pillar*. See Pillar.

BUTTLINGEN, in *Geography*, a town of Germany, in the circle of Lower Saxony, and duchy of Lunenburgh Zell.

BÜTTNERA, or Byttnera, in *Botany*, (in honour of D. S. A. Büttner, profeſſor of botany at Gottingen,) Linn. Gen. 268. Schreb. 366. La Marck. Illuſt. 383. Willd. 417. Juſſ. 217. Vent. vol. iii. 198. Claſs and order, *pentandria monogynia*. Nat. Ord. *Malvaceæ* Juſſ.

Gen. Ch. *Cal.* one-leafed, five-cleft, deciduous; ſegments ovate-lanceolate, acute, widely ſpreading. *Cor.* petals five, oblong, arched inwards, a little connivent, dilated and three-lobed at their ſummit; the middle lobe extended into a long filiform kind of awn, reflected outwards. *Nectary* ſurrounding the germ, pitcher-ſhaped, five-toothed. *Stam.* filaments five, awl-ſhaped, inſerted between the teeth of the nectary; ſhort, ſtretched outwards, covered by the arches of the petals: anthers ovate, twined. *Piſt.* germ ſuperior, globular, five-furrowed: ſtyle awl-ſhaped, ſhort; ſtigma obtuſe, pentagonal. *Peric.* capſule globular, muricate, five-grained; grains two-valved, opening at the inner ſide. *Seeds* ſolitary, ovate.

Eſſ. Ch. *Cal.* five-cleft; petals five, arched, three-lobed at their ſummit, the middle lobe prolonged into a filiform kind of awn. *Capſule* five-grained, muricate.

Sp. B. *ſcabra* Linn. ſpec. "Leaves lanceolate, rib and petioles prickly." (Loef. it. 313. Aubl. Guian. 1. 241, t. 96.) *Root* perennial. *Stem* ſhrubby at bottom; branches alternate, long, angular, armed with ſhort, reflexed, cartilaginous prickles. *Leaves* linear-lanceolate, alternate, toothed, midrib armed with recurved prickles; lower ones petioled, upper ſeſſile: ſtipules two, deciduous. *Flowers* axillary, ſingle, on ſhort peduncles. Found by Aublet in Guiana, between Cayenne and Couron. 2. B. *carthaginenſis*, Linn. Mant. "Leaves ovate; rib and petioles prickly." (B. aculeata Jacq. Americ. 76. pict. 41.) *Root* perennial. *Stem* with branches ſpreading on every ſide in the manner of the common bramble, rather woody, five-cornered; the furrows and angles obtuſe, armed with crooked, reflexed prickles, tender branches, round, prickly, alternate. *Leaves* ſmooth, quite entire, or with only one or two ſerratures, alternate, deciduous; thoſe on the old branches ovate, acute, four inches long or more, on the younger lanceolate-acuminate, leſs. *Racemes* ſhort, aggregate, and axillary on the younger branches. *Flowers* without ſmell, ſmall, white, very numerous. A native of Carthagena and St. Domingo. Obſ. La Marck and Willdenow unite the two preceding; but in concurrence with profeſſor Martyn, we have not ventured to oppoſe the authority of Jacquin, who affirms that his aculeata and Aublet's plant are not the ſame ſpecies. 3. B. *ovata*. La Marck. "Leaves ovate, ſerrated; petioles unarmed; branches five-angled, prickly; ſtem erect." (La Marck Illuſt. Pl. 140. Cavan. Diſſ. 5. t. 149. f. 1). *Root* perennial. *Stem* four or five feet high, without prickles; branches all aſcending, rather ſlender, green, ſmooth, ſupple, prickly at the angles. *Leaves* about an inch long. *Flowers* axillary, in a ſmall corymbus or umbel, from three to ſix together, on ſhort peduncles. *Calyx* with five acute, expanded diviſions. *Petals* trifid at their ſummit; the middle ſegment a very long purple or violet thread. Found in Peru by Joſeph de Juſſieu, who ſent ſeeds to the royal garden at Paris. Deſcribed from the living plant by La Marck. 4. B. *cordata*. La Marck (Büttnera aculeata Dombey Herb. Peruv.) "Leaves cordate, acuminate, ſerrated, pubeſcent beneath; petioles without prickles. *Stem* prickly." A Sarmentoſe ſhrub about eight feet high. *Stem* five-angled; prickles on the angles incurved. *Leaves* three inches broad. *Flowers* whitiſh, in ſmall peduncled, axillary umbels. *Capſules* round, ſlightly hiſpid. Found by Dombey in the neighbourhood of Lima in Peru. 5. B. *tereticaulis*. La Marck. "Leaves ovate-lanceolate, acuminate, very entire: branches prickly, round." La Marck. Ill. Pl. 140. f. 2. *Branches* a little pubeſcent. *Leaves* petioled, two inches long, about half an inch broad. *Capſules* ſmall, round, more hiſpid than the preceding. Native of Peru, gathered by Joſeph de Juſſieu. 6. B. *microphylla*. Linn. Mant. "Branches zigzag, even; leaves ovate, obtuſe, on ſhort peduncles." La Marck. A ſhrub. *Stem* four or five feet high, much branched at its ſummit; prickles ſolitary, ſtipular, horizontal; branches green, ſmooth, ſupple, obtuſely angular. *Leaves* ſometimes emarginate, entire, ſmooth, about half an inch long. *Flowers* ſmall, whitiſh green, peduncled, axillary, from three to five together. *Calyx* one-leafed, with five ſpreading diviſions. *Petals* trifid; ſegments linear, the lateral ones the ſhorteſt. *Capſule* thorny all over. La Marck. A native of America, cultivated in the Imperial garden at Vienna. 7. B. *herbacea*. Willd. "Leaves heart-ſhaped, toothed, without glands; ſtem herbaceous, without prickles." Willd. Roxb. Corom. 1. tab. 29. A native of the Eaſt Indies, on the ſummits of mountains. 8. B. *catalpæfolia*. Willd. "Leaves heart-ſhaped, very entire; ſtem climbing, without prickles." Jacq. Hort. Sch. t. 46. A native of Caracas in South America.

BUTTOCK, in *Ship Building*, that part of the after-body of a ſhip, bounded by the counter and quarters, and having the ſtern-poſt in the middle. The buttock is the ſupport of the after-part of the ſhip; it ought not, however to be too full, becauſe then the ſhip would be difficult to ſteer, nor too lean, as, in a rough ſea, the after-part will fall down too much.

BUTTOCKS *of a horſe*, in the *Manege*, are ſituated below the crupper and the origin of the tail, and extend to the place where the hind-leg joins the body.

BUTTON, in its moſt ordinary acceptation, ſignifies a well known appendage to garments for conveniently faſtening them together.

Trifling as this article may appear to ſome of our readers to be in itſelf, there is certainly no manufacture which includes ſuch an infinite variety of operations as that of the button-maker. The number of ſubſtances of which they are made is almoſt inconceivable, and each requires a diſtinct ſet of manipulations. Amongſt them are gold, ſilver, plated copper, white-metal, pinchbeck, ſteel, japanned tin, glaſs, foil ſtones, mother of pearl, ivory, bone, horn, tortoiſe-ſhell, jet, cannel-coal, paper, leather, and a thouſand others; excluſive of thoſe buttons which conſiſt of a mould of wood or bone covered with ſilk or mohair, and the manufacture of which belongs to a different claſs of artiſans. It would very far exceed the limits of a work like the preſent if we were to enter into all the details of ſo multifarious a buſineſs as this; we ſhall therefore only trace a few outlines of the proceſſes moſt ordinarily in uſe.

Of the manufacture of metal buttons. Theſe are originally formed in two different ways; the blanks are either pierced out of a large ſheet of metal with a punch driven by a fly-preſs, or caſt in a pair of flaſks of moderate ſize, containing 10 or 12 doz. each. In this latter caſe, the ſhanks are previouſly fixed in the ſand, exactly in the centre of the impreſſion formed by each pattern, ſo as to have their extremities immerſed in the melted metal when poured into the flaſk, by which means they are conſequently firmly fixed in the button when cooled. See FOUNDERY. The former proceſs is generally uſed for yellow buttons, and the latter for thoſe of white metal.

We ſhall firſt give an inſtance of the former mode of procedure as uſed in the manufacture of gilt buttons. The *gilding metal* is an alloy of copper and zinc, containing a ſmaller proportion of the latter than ordinary braſs, and is made either by fuſing together the copper and zinc, or by fuſing braſs with the requiſite additional proportion of copper. This metal is firſt rolled into ſheets of the intended thickneſs of the button, and the blanks are then pierced out as before mentioned. The blanks thus formed, are, when intended for plain buttons, uſually planiſhed by a ſingle ſtroke of a plain die driven by the ſame engine, the fly-preſs; when for ornamented buttons, the figure is frequently alſo ſtruck in like manner by an appropriate die, though there are others which are ornamented by hand. The ſhanks which are made with wonderful facility and expedition by means of a very curious engine, are then temporarily attached to the bottom of each button by a wire clamp like a pair of ſugar-tongs, and a ſmall quantity of ſolder and reſin applied to each. They are in this ſtate expoſed to heat on an iron plate containing about a groſs, till the ſolder runs, and the ſhank becomes fixed to the button, after which, they are put ſingly in a lathe, and their edges turned off ſmoothly.

The ſurface of the metal, which has become in a ſmall degree oxidated by the action of the heat in ſoldering, is next to be cleaned, which, in this, as in a great variety of other inſtances in the manufacture of metallic articles, is effected by the proceſs of *dipping* or *pickling;* that is, ſome dozens of them are put into an earthen veſſel pierced full of holes like a colander; the whole dipped into a veſſel of diluted nitric acid; ſuffered to drain for a few ſeconds: again dipped ſucceſſively into four or five other veſſels of pure water, and then dried.

The next operation is the *rough burniſhing*, which is performed by fixing the buttons in the lathe, and applying a burniſher of hard black ſtone from Derbyſhire: the minute pores occaſioned by the ſucceſſive action of the heat and the acid are thus cloſed, and the ſubſequent proceſs of gilding conſiderably improved, both with regard to economy and perfection.

The firſt ſtep towards the gilding of all the alloys of copper conſiſts in covering the ſurface uniformly with a thin ſtratum of mercury, by which means the amalgam, which is afterwards applied, attaches itſelf to it much more readily than it would otherwiſe do. This part of the proceſs is called *quicking*, and is effected by ſtirring the buttons about with a bruſh in a veſſel containing a quantity of nitric acid ſuperſaturated with mercury; which latter is, of courſe, by the ſuperior elective attraction of the copper for the acid, precipitated in its metallic ſtate on the buttons, whoſe ſurfaces become uniformly and brilliantly covered with it. The mercury which hangs in looſe drops on the buttons is then ſhaken off by jerking the whole violently in a kind of earthen colander made for the purpoſe; and they are then ready for receiving the amalgam.

The amalgam is made by heating a quantity of grain gold with mercury in an iron ladle, by which means the former is ſoon diſſolved, and the whole is then poured into a veſſel of cold water. The ſuperabundant mercury is ſtrongly preſſed out through a piece of chamois leather, and the remaining amalgam, which is of about the conſiſtence of butter, is then fit for application.

This is performed by ſtirring the buttons, whoſe ſurfaces are already thinly covered, or wetted with mercury, in an earthen veſſel with the requiſite proportion of amalgam and a ſmall quantity of diluted nitric acid, by which means the amalgam alſo attaches itſelf to their ſurfaces with a conſiderable degree of equality. The neceſſary quantity of gold is about five grains to a groſs of buttons of an inch in diameter.

The next proceſs is the volatiliſation of the mercury by heat, which is uſually called by the workmen *drying off.* This is performed by firſt heating the buttons in an iron pan, ſomewhat like a large frying pan, till the amalgam with which they are covered becomes fluid, and ſeems diſpoſed to run into drops, on which they are thrown into a large felt cap, called a *gilding cap,* made of coarſe wool and goat's hair, and ſtirred about with a bruſh to equalize the covering of the ſurface by the gold. After this, they are again heated, again thrown into the gilding cap and ſtirred, and theſe operations ſucceſſively repeated till the whole of the mercury is volatiliſed. This part of the proceſs, as will will readily be conceived, is extremely unwholeſome, and has the moſt terrible effects on the conſtitution of the workmen, ſo that it would be no ſmall deſideratum, (and it does not ſeem to be difficult), conveniently to effect this agitation and friction of the heated buttons in a covered veſſel; in which caſe alſo, though of inferior importance, the volatiliſed mercury might be ſaved. For preventing the waſte and injury attending this proceſs, an apparatus reſembling that delineated in *Plate* II. *Miſcellany*, *fig.* 1. has been partially and ſucceſsfully adopted by Mr. Mark Sanders, an eminent button-maker of Birmingham.

“ A hearth of the uſual height is to be erected. in the middle of which a capacity for the fire is to be made; but inſtead of permitting the ſmoke to aſcend into the top A, made of ſheet or caſt iron, through which the mercury is volatiliſed, a flue for that purpoſe ſhould be conducted backwards to the chimney B. An iron plate, thick enough to contain heat ſufficient to volatiliſe the mercury, is to cover the fire-place at the top of the hearth C. There muſt be an aſh-hole, D. under the fire-place. The ſquare ſpace E, ſeen in the fire-place, is the flue, which ſerves to carry the ſmoke back under the hearth into the chimney B. The door of the fire-place and aſh-pit may either be in front, as repreſented in the plate, or at the end of the hearth at F, which will perhaps leſs incommode the work-people. It would be of great advantage if the ſpace between A and the iron plate C was covered up with a glaſs window coming down ſo low as only to leave ſufficient room for moving the pan backwards and forwards with facility. If the ſides were alſo glaſs inſtead of brick-work it would be ſtill better, as the work-people would be able to have a full view of their work without being expoſed to the fumes of the mercury, which, when volatiliſed by heat communicated to the pan by the heated iron plate over the fire-place, would aſcend into the top A, appropriated for its reception, and deſcend into the tub G, covered at top and filled pretty high with water. By this means the hearth would, in fact, become a diſtilling apparatus for condenſing and recovering the volatiliſed mercury. In the tub G the principal part would be recovered; for, of what may ſtill paſs on, a part would be condenſed in aſcending the tube H, and fall back, while the remainder would be effectually caught in the tub or caſk I, open at the top, and partly filled with water. The latter tub ſhould be on the outſide of the building, and the deſcending branch of the tube H ſhould go down into it at leaſt 18 inches, but not into the water. The chimney or the aſh-pit ſhould be furniſhed with a damper to regulate the heat of the fire.

The water may be occaſionally drawn out of the tubs by a ſiphon, and the mercury clogged with heterogeneous matter may be triturated in a piece of flannel till it paſſes through, or placed in a pan of ſheet iron, like a dripping-pan, in a ſufficient degree of heat, giving it a tolerable inclination, ſo that the mercury, as it gets warm, may run down and unite in the lower part of the pan. But the mercury will be moſt effectually recovered by expoſing the reſiduum left in the flannel bag to diſtillation in a retort made of iron or of earthen ware.

When the mercury is volatiliſed from the buttons, or, as the workmen denominate it, when the buttons are dryed off, they are finally burniſhed, and are then finiſhed and fit for carding.

The reader unacquainted with this branch of manufacture will be ſurpriſed to learn how far a ſmall quantity of gold, incorporated with mercury, will ſpread over a ſmooth ſurface of copper. “ Five grains, worth one ſhilling and threepence, on the top of a groſs, that is, 144 buttons, each of one inch diameter, are ſufficient to excuſe the manufacturer from the penalty inflicted by an act of parliament; yet many, upon an aſſay are found to be deficient of this ſmall quantity, and the maker fined and the buttons forfeited accordingly. Many hundred groſſes have been tolerably gilt with half that quantity; ſo extremely far can gold be ſpread, when incorporated with mercury, over the ſurface of a ſmooth piece of copper.” Philoſophical Magazine, N° *33*. p. 19, &c.

The white metal buttons which are compoſed of braſs alloyed with different proportions of tin, after having been caſt as before mentioned, are poliſhed by turning them in a lathe, and applying ſucceſſively pieces of buffalo ſkin glued on wood, (or *buffs* as the workmen call them) charged with powdered grindſtone and oil, rotten ſtone and crocus martis. They are then *white-boiled*, that is, boiled with a quantity of grain tin in a ſolution of crude red tartar, or argol, and laſtly finiſhed with a buff with finely prepared crocus.

Glaſs buttons. Theſe articles are alſo frequently wholly compoſed of glaſs of various colours in imitation of the opal, lapis lazuli, and other ſtones. The glaſs is in this caſe kept in fuſion, and the button nipped out of it whilſt in its plaſtic ſtate, by a pair of iron moulds, like thoſe uſed for caſting piſtol ſhot, adapted to the intended form of the button: the workmen previouſly inſerting the ſhank into the mould ſo that it may become imbedded in the glaſs when cold.

Mother of pearl buttons. This ſubſtance is alſo frequently uſed in the manufacture of buttons; in which caſe, the mode of fixing in the ſhank is ſomewhat ingenious. It is done by drilling a hole at the back which is under-cut, that is, larger at the bottom than the top, like a mortiſe, and the ſhank being driven in by a ſteady ſtroke, its extremity expands on ſtriking againſt the bottom of the hole, and it becomes firmly rivetted into the button. To theſe, foil-ſtones are alſo frequently added, in which caſe, they are uſually attached with iſinglaſs-glue. Steel ſtuds are alſo often rivetted into buttons of this and various other kinds. See FOIL-STONES and STUDS.

Shell buttons. This name is given to thoſe buttons which conſiſt of a back which is generally of bone without any ſhank, but corded with catgut, and covered in front with a thin plate of metal ſtruck with a die. They are now, however, much leſs in uſe than formerly. The backs are cut out with a brace whoſe bit is a circular ſaw, like that of a ſurgeon's trephine, and the four holes through which the catgut paſſes are drilled by four drills moving parallel to each other, and acting at once. They are then corded by children who tie the catgut on the inſide; the cavity is filled with melted reſin, and the metal ſhell applied warm. The button is then preſſed between two centres in a lathe, which are forced together by a weight acting on a lever, (an ingenious application of this engine frequently made uſe of in this manufacture), and the edge of the ſhell turned down during its revolution with a ſmall burniſher.

In the year 1790, a patent was granted to Mr. Henry Clay of Birmingham for a new method of maufacturing buttons of ſlate, or flat ſtone; and in 1800, Mr. Joſeph Barnett of the ſame place obtained a patent for an improved mode of making buttons, by fixing two ſhanks, or other faſtening, on one button, one on each ſide, on the under ſurface, oppoſite to each other, inſtead of only one in the centre.

The practice of wearing buttons conſiſting merely of a mould covered with the ſame kind of cloth as the garment itſelf, being at preſent extremely general, it may perhaps be proper to remark, that this is prohibited on pain of pecuniary penalties, from 40s. to 5l. per dozen, by ſeveral ſtatutes which have been made at different times for the promotion of this manufacture; and under which, ſeveral convictions have taken place within a few years. Theſe are, 10 W. 3. c. 2. 8 Ann. c. 6. 4 Geo. c. 7. and 7 Geo. c. 12. The importation of buttons is prohibited on pain of forfeiture, and penalty of 100l. on the importer, and 50l. on the ſeller, by 13 & 14 C. II. c. 13. § 2. and 4 W. III. c. 10. § 2.

By 36 Geo. III. c. 60. any perſon putting falſe marks on gilt buttons, eraſing any marks except ſuch as expreſs the real quality, or any other words, except *gilt* or *plated*, incurs the penalty of forfeiting ſuch buttons, and alſo 5l. for any quantity not exceeding 12 dozen; and if above, after the rate of 1l. for every 12 dozen. The penalty, however, does not extend to thoſe who mark the words *double* and *treble gilt*, provided, in the caſe of double gilt buttons, gold ſhall be equally ſpread upon their upper ſurface, excluſively of the edges, in the proportion of 10 grains to the ſurface of a circle 12 inches in diameter; and in that of treble gilt, the gold ſhall amount to 15 grains in the ſame proportion. The penalty on making falſe bills of parcels, expreſſing any other than the real quality of ſuch buttons, is 20l.; and that on mixing buttons of different qualities, forfeiture of the ſame, and 5l. for any number between one and 12 dozen, and above this number 1l. for every 12 dozen. In order to aſcertain what ſhall be deemed gilt or plated buttons, gilt buttons ſhall have gold equally ſpread upon the upper ſurface in the proportion of five grains to the ſurface of a circle 12 inches in diameter; and plated buttons ſhall have the ſuperficies of the upper ſurface made of a plate of ſilver fixed upon copper, or a mixture of it with other metals, previouſly to its being rolled into ſheets or fillets. All pecuniary penalties may be recovered by action or ſuit within three calendar months, in the courts of Weſtminſter, and one juſtice may, by warrant, cauſe metal buttons liable to forfeiture, to be ſeized and kept in ſafe cuſtody, to be produced as evidence upon any action, or cauſe them to be deſtroyed. Pecuniary penalties may alſo be adjudged by two juſtices in the place where the offender reſides, or the offence is committed. This act, however, does not extend to buttons made of gold, ſilver, tin, pewter, lead, or mixture of tin and lead, or iron tinned, or of Bath or white metal, or any of theſe metals inlaid with ſteel, or buttons plated upon ſhells.

Button, in *Botany*, a term ſometimes uſed for a bud, in the technical language of the French naturaliſts; it is the middle ſtate between the eye and the burgeon.

Button, in *Building*, denotes a ſlight faſtening for a door or window, made to turn on a nail.

Button *of a lock*, denotes a round head ſerving to move the bolt.

Button, in *Chemiſtry*, ſignifies the metal which is collected generally in a roundiſh maſs at the bottom of a crucible after fuſion, or which remains in the cupels after cupellation.

Button, in *Fencing*, ſignifies the end or tip of a foil, being made roundiſh, and uſually covered with leather, to prevent making contuſions in the body.

Button *of the reins of a bridle*, in the *Manege*, is a ring of leather, with the reins put through it, running all along the length of the reins. See Bridle.

To put a horſe under the button, is when he is ſtopped, having no rider on his back, by the reins being laid on his neck, and the button lowered, ſo far that the horſe's head is brought in by the reins, and fixed to the true poſture or carriage.

Buttons, in reference to the *Rigging* of a ſhip, denote ſmall pieces of thick leather under the heads of nails that are driven through ropes.

Button *and Loop*, a ſhort piece of rope, having at one end a walnut knot, crowned, and at the other end an eye. It is uſed as a becket to confine ropes in.

Button's *Bay*, in *Geography*, lies on the weſt ſide of Hudſon's bay, north of, and near to Churchill river. It is ſo called from ſir Thomas Button, who, attempting to diſcover a north-weſt paſſage, loſt his ſhip, and came home in a ſloop built in the country.

Button's *Iſles*, are five ſmall iſlands at the ſouth end of Hudſon's ſtraits near the north coaſt of Labrador, and near the entrance of cape Chidley. N. lat. 60° 18′. to 60° 40′. W. long. 65° 10′.

Button *Iſland*, called alſo *Bern iſland*, an iſland of the Indian ocean, north of Java, and near Banca and Billiton. S. lat. 5° 49′. E. long. 105° 48′ 30″. This iſland, as well as the *Cap* in the ſame longitude and S. lat. 50° 58′ 30″, are ſteep and rugged, and difficult of acceſs. At a little diſtance they appear like the remains of old caſtles, mouldering into ruin, with tall trees growing upon the tops of them; but, at a nearer view, they exhibit traces of a volcanic origin. In the Cap are two caverns, running horizontally into the ſide of a rock, and containing a number of the birds' neſts, ſo much prized by Chineſe epicures. See Birds' *Neſts*.

Button-*ſtone*, in *Natural Hiſtory*, a kind of figured ſtone ſo denominated from its reſembling the button of a garment.

Dr. Hook gives the figure of three ſorts of button-ſtones, which ſeem to have been nothing elſe but the filling up of three ſeveral ſorts of ſhells. They are all of them very hard flints, and have this in common, that they conſiſt of two bodies, which ſeem to have been the filling up of two holes or vents in the ſhell. Poſth. Works, p. 284. Dr. Plott deſcribes a new ſpecies of button-ſtone, finely ſtriated from the top, after the manner of ſome hair buttons, on which account it may be denominated *porpites*, unleſs we ſhould rather take it for a new ſpecies of *echinites*. Hiſt. Oxf. chap. 5. § 178.

This name is alſo given to a peculiar ſpecies of ſlate found in the marquiſate of Bareith, in a mountain called Fichtelberg; which is extremely different from the common ſorts of ſlate, in that it runs with great eaſe into glaſs in five or ſix hours time, without the addition of any ſalt, or other foreign ſubſtance, to promote its vitrification, as other ſtones require.

It contains in itſelf all the principles of glaſs, and really has mixed in its ſubſtance the things neceſſary to be added to promote the fuſion of other ſtony bodies.

The Swedes and Germans make buttons of the glaſs produced from it, which is very black and ſhining, and it has hence it name button-ſtone. They make ſeveral other things alſo of this glaſs, as the handles of knives, and the like, and ſend a large quantity of it unwrought in round cakes, as it cools from the fuſion, into Holland.

Button-*tree*, or *Button-wood*, in *Botany*. See Cephalanthus and Conocarpus. In North America the *Platanus occidentalis* is alſo called button-wood.

Button-*weed*. See Spermacoce.

BUTTONNESS, in *Geography*, a cape of Scotland, on the ſouth-eaſt extremity of the county of Angus, in the German ocean, at the north-weſt of the entrance into the frith of Tay; 9 miles E. of Dundee. N. lat. 56° 26′. W. long. 1° 33′.

BUTTRESS, a *butment*, or maſs of ſtone, or brick, ſerving to prop or ſupport the ſides of a building, wall, or the like, on the outſide; where it is either very high, or has any conſiderable load to ſuſtain on the other ſide, as a bank of earth, &c. See Arch, and Arc-boutant.

The theory and rules of *buttreſſes*, or props for eaſing walls, is ranked among the deſiderata of architecture. They are uſually placed leaning againſt the edifice they are to ſuſtain. We find them uſed againſt the angles of ſteeples, churches and other buildings of ſtone; alſo along the walls of ſuch buildings as have great and heavy roofs, which would otherwiſe be ſubject to thruſt the wall out. They are alſo placed as ſupports againſt the feet of arches turned croſs great halls, in old palaces, &c. and are much uſed in fortification.

Buttress, Buttrice, or Butteris, likewiſe denotes a tool, made of ſteel and fitted to a wooden handle, uſed by farriers, to pierce the ſole of a horſe's foot, which is overgrown; to pare the hoof; to fit the ſhoe; and to cut off the ſkirts of the ſole that overcaſt the ſhoe.

BUTTS, William, in *Biography*, born towards the end of the 15th century, was educated at Gonville college in Cambridge, where he appears to have taken his degree of doctor in medicine. Being diſtinguiſhed for his ſuperior abilities, he was appointed phyſician to king Henry VIII.; and though he was not one of the founders of the College of Phyſicians, as Granger calls him, he was one of their early members, being admitted in the year 1529; and was in ſuch repute for his learning, that Dr. Caius dedicated his works to him. It is alſo probable, that he aſſiſted the ſurgeons in procuring their charter, as his portrait is among thoſe of the members who were preſent when it was delivered to the company. Goodall's College of Phyſicians. Aikin's Biog. Mem. of Medicine.

BUTTSTADT, or Buttstett, in *Geography*, a town of Germany, in the circle of Upper Saxony, and principality of Weimar, ſituated on the Loſſe, and carrying on a great trade in cattle with Poland and Hungary; 9 miles N. of Weimar.

BUTUA, Budoa, in *Ancient Geography*, a town of Illyria, named *Buthoe* by Steph. Byz. and *Butua* by Ptolemy. See Budoa.

BUTUNTUM, or Bytontum, a town of Italy, in that part of Apulia called Peucetia, ſouth-eaſt of Bavium, on the Trajan way.

BUTUS, in *Entomology*, a ſpecies of Sphinx (*Zygaena*, Fabr.), the wings of which are greeniſh and ſhining, at the tips darker; abdomen fulvous. Fabricius. Inhabits South America.

Butus, *Sphinx butus* of Cramer, is the ſpecies deſcribed by Fabricius under the name of Gnoma, which ſee.

Butus, or Butis, in *Ancient Geography*, a town of Lower Egypt, ſeated on the weſt of that branch of the Nile anciently called *Hermopoliticus*, and which running near to Sebennytus, now called Samanoud, diſcharges itſelf into the lake of Bourlos or Berelos. It was famous for an oracle of Latona, called Butis, and in ſome reſpects the ſame with Iſis, which was conſulted by perſons that repaired to it from all parts of Egypt. The temple of this divinity was ſpacious and magnificent; ſurrounded by a portico fifty feet high, which was ſupported by marble columns, and the ſanctuary was formed out of an enormous maſs of granite, 60 feet ſquare and ſix thick, and weighing 15,000,000 pounds. It was hewn in a quarry in the iſle of Philé, near the cataracts, and conveyed on rafts, through a diſtance of 200 leagues, to the place where it was depoſited. Butus was alſo decorated with two temples in honour of Apollo and Diana. Herodotus, l. xi. c. 155. Strabo, l. 17. vol. ii. p. 802.

BUTZBACH, in *Geography*, a town of Germany, in the circle of the Upper Rhine, and principality of Upper Heſſe, ſituate in a marſhy, but fertile, plain; 7 miles S.S.W. of Gieſſen.

BUTZOW, a town of Germany, in the circle of Lower Saxony, and principality of Schwerin; 24 miles N.E. of Schwerin.

BUUDER, or Budenstade, a trading place and fiſhing port of Iceland.

BUVETTE, or Beuvette, in the *French Laws*, an eſtabliſhed place in every court, where the lawyers and counſellors may retire, warm themſelves, and take a glaſs of wine by way of refreſhment, at the king's charge.

There is one for each court of parliament, but theſe are only for perſons belonging to that body; there are others in the *palais* whither other perſons alſo reſort.

BUXALOONS, in *Geography*, an Indian town of America, on the north-weſt bank of Alleghany river; nearly 25 miles from Fort Franklin, at its mouth.

BUXBAUM, John Christian, in *Biography*, applied himſelf ſolely to the ſtudy of botany, in which he acquired conſiderable celebrity. His firſt work, "Enumeratio Plantarum in agro Halenſi, lociſque vicinis naſcentium," was publiſhed in 1721 at Halle in Saxony, near which place he appears to have been born. Haller commends this catalogue, which contains many of the minuter plants, moſſes, and funguſes, ſome of which were then firſt noticed. This procured him ſo much credit, that he was ſent for to Ruſſia and made member of the academy at Peterſburg. He then went to Conſtantinople, and viſited ſeveral of the iſlands in the Archipelago, attentively examining all the varieties of plants, found in thoſe rich countries. As the fruit of theſe travels, he publiſhed, in 1728, 4to. "Centuria prima Plantarum circa Byzantium et in Oriente obſervatarum. Petrop." in which he briefly deſcribed ſome new and many very rare plants. He died the following year, but had previouſly prepared a ſecond, third, and fourth centuries, which were publiſhed in 1729, 1733, and 1740. A fifth century, with an appendix, was added. Beſides theſe, he was author of ſeveral communications on the ſubject of botany, which were publiſhed in the firſt, ſecond, third, and fourth volumes of the Commentaries of the Imperial Academy at Peterſburg. Hall. Bib. Bot.

BUXBAUMIA, in *Botany* (from Buxbaum, a German botaniſt, who travelled in Ruſſia, and publiſhed deſcriptions of new plants.) Linn. gen. 562. Schreb. 1659. Juſſieu 12. La Marck Enc. Claſs and order, *Cryptogamia muſci*. Nat. ord. *Muſci* Linn. and Juſſ.

Gen. Ch. *Capſ.* ovate, oblique, gibbous, on one ſide. *Periſtome* double; outer one of ſixteen teeth truncate; inner membranaceous, plaited.

Species, 1. B. *aphylla*. "Capſule on a fruit ſtalk; leaves none." Linn. Amæn. 5. tab. 1. Dill. Muſc. tab. 68. 5. Flor. Dan. 44. La Marck. Ill. Pl. 872. *Fruit ſtalk* ſwelling at the baſe into a black, ſomewhat villous, ſmall bulb; half an inch long, dark, red, gloſſy, erect. *Capſule* of an uniform pale colour, ovate, gibbous, about the ſize of a common pea. The only moſs known without leaves. Turner. Spic. Muſc. Hib. This curious plant was firſt diſcovered by Buxbaum on the banks of the Volga, near Aſtracan; afterwards by Monti in Italy, and Celſius ſen. in Sweden, both of whom ſent ſpecimens to Dillenius; and by Haller in Switzerland, and by others in different parts of Europe. It has lately been found near the lake of Killarney in Ireland. 2. B. *folioſa* (B. ſeſſilis Semid Hed. Phaſcum Flor. dan. t. 249. upper fig. Phaſcum montanum Hud. Maximum Light. Sphagnum acaulum maximum Dill. tab. 32. f. 13.) "Stem none; capſule nearly ſeſſile, leaves linear-lanceolate." Dr. Smith. La Marck Illuſt. Pl. 872. f. 2. Eng. Bot. 329. *Stem* very ſhort, or rather none. *Leaves* numerous, lanceolate, flat, keeled, acuminate; inner ones with a briſtly tooth on each ſide towards the ſummit. *Capſule* ſolitary, nearly ſeſſile, the ſize of a grain of wheat, ovate oblique, ſmooth green; calyptra awl-ſhaped, red; lid conic, ſtriated; exterior fringe obſolete; interior membranaceous, white, plaited, cloſed. Dr. Smith. A native of England, and other parts of Europe.

BUXE Fiord, in *Geography*, a bay on the weſt coaſt of Weſt Greenland. N. lat. 64° 15′. W. long. 49° 40′.

BUXENTUM, now *Poli-caſtro*, in *Ancient Geography*, a town of Italy, in the eaſtern part of Lucania, called by the Greeks *Pyxus*. It was founded by Micythus, a prince of Meſſana in Sicily, and afterwards deſerted. It was colonized by the Romans. Strabo, Livy. According to Strabo (l. 6. vol. i. p. 253.) Pyxus was the name of a promontory, port, and river.

BUXI, in *Entomology*, a ſpecies of Tipula (*Tipula flava* of Schrank). The colour is yellow; head and thorax black; wings brown and incumbent. A native of Europe, Gmel. &c.

Buxi, a ſpecies of Chermes, having ſetaceous antennæ, and yellowiſh brown wings, *Pſylla Viridis*, &c. Geoffroy.

BUXTEHUDE, Dietrich, in *Biography*, ſon of John Buxtehude, organiſt at St. Olaus at Elſineur, was a diſciple of John Thiel, and organiſt of the church of St Mary in Lubec. Mattheſon, in his **Vollkommene Capellmeiſter**, p. 130. celebrates him as a famous organiſt and compoſer, and ſpeaks of ſix ſuites of leſſons for the harpſichord of his compoſition, in which the motion of the planets is repreſented or delineated. With this is printed a choral compoſition to German words, being a lamentation on the death of his father. In 1696 he publiſhed two ſets of ſonatas *a violino,* *viola da gamba, e cembalo.* Mattheſon, in his Life of Handel, tells us, that "he and Handel travelled together to Lubec, upon there being a vacancy in an organiſt's place, and in the *waggon*, compoſed ſeveral double fugues, *da monte* not *da penna*. Buxtehude was then at Lubec, and an admirable player on the organ; however, Handel's powers on that inſtrument aſtoniſhed even thoſe who were accuſtomed to hear that great performer.

Buxtehude, in *Geography*, a town of Germany, in the circle of Lower Saxony, and duchy of Bremen, ſeated on the Eſte, which fills the ditches. The fortifications have been razed: 16 miles W.S.W. of Hamburg.

BUXTON, Jedediah, in *Biography*, a perſon deſerving to be recorded on account of his ſingular memory and powers of calculation, was the ſon of a ſchool maſter at Elmeton, a ſmall village near Cheſterfield, in Derbyſhire, and born, probably, in 1704 or 1705. His education, notwithſtanding the profeſſion of his father, was ſo much neglected that he was never taught to read or write. His whole attention ſeems to have been abſorbed by the different denominations and relative proportions of numbers to ſuch a degree that he took hardly any notice of external objects, except with reſpect to their numbers. When any interval of time was mentioned to him, he immediately gave the amount of it in minutes; and he aſſigned alſo the number of hair-breadths in any diſtance that chanced to be ſpoken of, although no queſtion was propoſed to him. To ſuch a degree was he capable of abſtraction and of fixing his attention, that no noiſe diſcompoſed him, and that no incidental queſtion or occurrence could divert his thoughts, or occaſion any confuſion, ſo as to prevent his renewing and purſuing his calculation, which he performed by mere memory, without the aid of pen or paper. It would be endleſs to recite particular inſtances of his powers of computation, and of the methods he uſed for ſolving the moſt operoſe and intricate queſtions relating to numbers. By merely ſtriding over a piece of land he could tell the contents of it as accurately as if he had meaſured it by the chain. His conſtant application to figures prevented his making the ſmalleſt acquiſition in any other branch of knowledge; nor did his ideas ſeem to be extended beyond matters of mere calculation. In 1754 he viſited London, and was introduced to the Royal Society, before which he gave ſeveral ſatisfactory evidences of his peculiar talents for computation. In this viſit his curioſity was excited by a ſtrong deſire to ſee the king and royal family, but in this he was diſappointed. At the play-houſe he ſeemed to be altogether unintereſted by the ſplendour of the ſcenery or the action of the performers; and during the dances his attention was engaged in reckoning the number of ſteps. After a fine piece of muſic, he declared that the innumerable ſounds produced by the inſtruments perplexed him beyond meaſure, but he counted the words uttered by Mr. Garrick in the whole courſe of the entertainment, and affirmed that in this he had perfectly ſucceeded. He was married and had ſeveral children. He ſubſiſted by labour, and remained contented in obſcurity; and prolonged his life to the age of about 70 years. Biog. Dict.

Buxton, in *Geography*, a large handſome village of Derbyſhire, in England, is celebrated for its mineral waters, the fame of which occaſions it to be much frequented by valetudinarians, and many other perſons, who reſort hither for health or pleaſure. It is ſituated in two pariſhes, but the principal part forms a chapelry to Bakewell. Buxton lies in an extenſive hollow, with bleak elevated tracts of moor land completely ſurrounding it. Several plantations have, however, been made of late years on the adjacent hills, and ſome land cultivated. The late Dr. Gale, as appears from a manuſcript of his quoted in Gough's Additions to the Britannia, placed the Aquis of Ravennas at Buxton; though he had previouſly conjectured it to be at Aidon, in Northumberland. That its warm ſprings were known to the Romans, is evident from various concurring circumſtances. Several ancient roads concentrate at this ſpot, particularly one called the Bath-way, or Bathomgate, which commences at Brough, a Roman ſtation, near Hope, and was traced by the late Mr. Pegge; and another, that came from Mancheſter, and is known in different parts of its courſe by the appellations of High-ſtreet, Street-fields, Street-lane, Old gate, &c. Specimens of Roman workmanſhip have alſo been diſcovered here at different times. Biſhop Gibſon mentions a Roman wall "cemented with red Roman plaiſter, cloſe by St. Anne's well, where are the ruins of the *ancient bath*." This wall was taken down in the year 1709, when Sir Thomas Delves of Cheſhire, in memory of a cure he had received from the waters, erected a ſtone alcove over the well. Some capacious leaden ciſterns, and different articles, apparently Roman, were found in digging the foundation. The ſhape and dimenſions of the ancient bath, which was about ſix yards from the preſent bath-room, were clearly diſcovered when the building of the Creſcent commenced in the year 1781. Its form appeared to be an oblong ſquare; it meaſured from eaſt to weſt 30 feet, and 15 in a contrary direction. The ſpring was ſituated at the weſt end; and at the eaſt might be perceived a flood-gate, by which the water was let out. The wall was built with limeſtone, covered on the outſide with a ſtrong cement; the floor conſiſted of lime mixed with coarſe ſand, ſaturated with blood. Near one end a cavity was formed in the floor reſembling the figure of a boat, extending circularly in length almoſt from one ſide wall to the other; its breadth was about two yards; and its depth below the level of the floor, at the deepeſt part of the curvature, about eighteen inches: the water was conveyed into this room by a leaden pipe. Though the very early uſe of the Buxton waters is apparent from the above circumſtances, we have no record of their being in uſe in the middle ages; or of their having obtained any high reputation till the ſixteenth century, when Dr. Jones gave them celebrity by a treatiſe on their beneficial qualities. About this time the earl of Shrewſbury erected a houſe for the reception of viſitants, on the ſite of the building now called *The Hall*, part of which belonged to the old fabric. This hall becoming inſufficient to accommodate the increaſing number of viſitors, moſt part of it was taken down in 1670, when a new enlarged edifice was erected on the ſpot by William, third earl of Devonſhire. This building, which has been frequently improved, is ſtill the principal hotel for the reception of company. Within it are the baths, adjoining, but in diſtinct apartments, five in number; the gentlemen's, the ladies', the poor's, and two private. The ſprings have been calculated to throw up about ſixty gallons of water every minute. The time requiſite to fill the baths is two hours and fifty minutes. The water is uſually drank at St. Anne's well, a modern, but elegant little building in the antique ſtyle, where it is conveyed into a white marble baſon, from the original ſpring, through a narrow grit ſtone channel. This well is regarded as one of the ſeven wonders of the Peak; chiefly from the circumſtance that both hot and cold ſpring water may be obtained within twelve inches of each other, from a double pump, ſituated on the oppoſite ſide of the building to that which contains the baſon. The principal ornament of Buxton is its *Creſcent*, a magnificent range of building, which was erected by the duke of Devonſhire within the laſt twenty years, from the deſign and under the ſuperintendance of Mr. Carr, the architect. It conſiſts of three ſtories; the loweſt ruſtic, forming a beautiful colonnade, which extends the whole length of front, and is ſeven feet wide within the pillars and eleven feet high. The diviſions between the windows above, are formed by Ionic pilaſters, which extend to an elegant baluſtrade that ſkirts the whole front, the ſpan of which is 257 feet. The Creſcent is built with grit-ſtone obtained near the ſpot, and faced with fine free-ſtone, procured from a quarry about two miles diſtant. Near the back of the Creſcent are the *ſtables*, an extenſive pile, which was alſo conſtructed at the charge of his grace of Devonſhire, who is ſaid to have expended 120,000. in completing the whole. The poor who reſort to Buxton, on bringing a certificate from the miniſter of their pariſh, and medical attendant, vouching for their being proper objects of charity, are admitted to partake of the benefit of a fund formed by collecting one ſhilling from every viſitor who ſtays here more than a day. This is appropriated to the purchaſe of neceſſary medicines, and ſupplying fourteen indigent perſons with ſix ſhillings weekly for one month; they are alſo permitted to bathe gratis. Buxton ſeaſon generally commences in June, and concludes in October. In theſe months aſſemblies are held three days in the week, and a ſmall theatre is opened on the other three days.

Buxton contains about 100 houſes, chiefly of ſtone; the inhabitants, generally reſident, are about 400. The viſitors in the bathing ſeaſon are uncertain, but are eſtimated at 700 annually, who are the principal ſupport of the inhabitants. Several ſhops for the manufacture and ſale of ornaments of fluor ſpar and alabaſter are eſtabliſhed in this village. The place where the cryſtals, denominated Buxton diamonds, are found, is about two miles ſouth-weſt from the village: it is a waſte uneven piece of land, ſeveral acres in extent, and called the *Diamond Hill.*

Between one and two miles weſtward of Buxton, in the vaſt maſs of lime-ſtone, which ranges in this part of the county, is a fiſſure, or cavern, called Poole's Hole, from an ancient tradition, that an outlaw, named Poole, once made it his reſidence. This being conſidered a great natural curioſity, we ſhall be rather particular in our deſcription of it. Nothing grand nor pictureſque marks the entrance into this cavity, neither does its interior preſent any of the magnificence which ſo eminently diſtinguiſhes the Peak cavern at Caſtleton. It opens with a crevice ſo low and contracted that the curious viſitant is obliged to proceed with caution in a ſtooping poſture nearly twenty-five yards, when the paſſage widens into a ſpacious vacuity, from whoſe roof depends a quantity of ſtalactite, produced by the droppings of water impregnated with calcareous matter. Part of this ſubſtance adheres to the roof, and gradually forms thoſe pendant ſpiral maſſes called ſtalactites, or (locally) *water-icicles*; another portion drops with the water to the ground, and attaching itſelf to the floor is there depoſited, and becomes the *ſtalagmite*, a lumpy maſs of the ſame matter. One of the former, of immenſe ſize, called the *Flitch of Bacon,* occurs about the middle of the cavern, which here becomes very narrow; but, after a ſhort ſpace, ſpreads again to a greater width, and continues large and lofty, till we reach another ſurpriſingly large maſs of ſtalactite, to which the name of *Mary Queen of Scots' Pillar* is attached, from the tradition of that queen having viſited this cavern and advanced thus far into its receſſes. As this pillar cannot be paſſed without ſome difficulty, few people venture beyond it; and, indeed, the remaining part of the cavern offers few objects to repay the fatigue of exploring it. The money given by viſitants is divided among ten aged women who reſide here, and act as guides by the permiſſion of the duke of Devonſhire, to whom the ground belongs. The extent of the cavern does not exceed three hundred yards.

The ſtone in this neighbourhood, though of ſeveral kinds, is moſtly applied to the making of lime, many hundred tons of which are here burnt annually. The workmen and their families, like the Troglodytes of old, reſide in *caves;* for any other name would be ill adapted to deſcribe their habitations. which are ſcooped out of the hillocks or ſmall mounts, formed with the refuſe of the lime-kilns. The cruſt of theſe heaps of rubbiſh having been conſolidated by time and the weather, is now impervious to the rain; and being left of ſufficient thickneſs, forms a ſubſtantial roof. Each habitation contains two or three rooms; but few have any other light than is admitted through the chimney and door-way.

About three miles from Buxton and two from Chapel-in the-Frith, in a paſture field, is a natural curioſity, called "The Marvel Stones," of which Mr. Bray gives a particular deſcription in his Tour through Derbyſhire, and to which probably Dr. Stukely alluded, when he mentions having heard of what appeared to him a druidical work near Hope. Near the northern extremity of an eminence called *Combe-Moſs*, three miles from Buxton, are ſome ancient military works, conſiſting of two deep trenches, which run parallel to each other to an extent of about two hundred yards.

Buxton is ſituated 163 miles N.W. from London. Warner's Northern Tour, vol. i. Pilkington's View of the preſent State of Derbyſhire, 2 vols. 8vo. 1789.

Buxton *Water.* The native warm ſprings that have given ſo much celebrity to this town are very numerous, and afford a great abundance of water for every purpoſe both of bathing and domeſtic ſupply.

Buxton water is perfectly clear and colourleſs, entirely void of ſmell and taſte, nor has it any quality, beſides its temperature, which diſtinguiſhes it from the pureſt of the numerous ſprings with which all mountainous countries uſually abound. The heat is very uniformly 82° in all ſeaſons and circumſtances, taken in the ſtone reſervoir which firſt receives it, and hence, though to the touch this water is poſitively cold, or rather cool, it is entitled to be conſidered as a warm ſpring, being uniformly of a much higher temperature than common ſprings. In St. Anne's well, the original and principal reſervoir, a quantity of thin ſteam is conſtantly given out from the water which hovers over its ſurface and contributes to keep up the heat during the bathing.

Along with the water, which riſes up through the crevices of the floor of the well, a conſiderable number of air-bubbles are conſtantly ſeen to riſe at the ſame time, and paſſing through the water break at its ſurface. Theſe may readily be collected by immerſing a bottle and funnel full of water in an inverted poſition and intercepting them in their paſſage upwards. Dr. Pearſon was the firſt chemiſt who aſcertained the nature of this gas, and he found it to conſiſt almoſt entirely of azotic gas mixed with a ſmall portion of atmoſpherical air, and not carbonic acid gas as had been conjectured by preceding obſervers. A ſmall portion of the ſame gas alſo is found in combination with the water, which is readily ſeparable by boiling. The water then yields about a ſixty-fourth part of its bulk of this air.

The analyſis of the water exhibits a few ſaline ſubſtances, but in very minute proportion and perfectly inſignificant; for, in fact, it is by its purity and warmth that this natural ſpring is diſtinguiſhed. By Dr. Pearſon's experiments a gallon of the water yielded on evaporation only 15 grains of reſiduum, of which $1\frac{3}{4}$ grain was eſtimated to be muriat of ſoda, $2\frac{1}{2}$ to be ſulphat of lime, and $10\frac{1}{2}$ to be carbonat of lime held in ſolution by a ſlight exceſs of carbonic acid.

The water of Buxton is employed largely both for external and internal uſe. Its uniformity of temperature and the great abundance of the ſupply give to Buxton uncommon advantages as a tepid bath. A ſlight ſhock of cold is felt on the firſt immerſion, which is immediately ſucceeded by a very agreeable glow over the whole body; and it is to be obſerved that the ſhock is ſo ſlight, owing to the ſmall difference between the heat of the water and that of the body, as to be borne without inconvenience by very delicate and irritable habits, in whom the rougher operation of the cold bath or immerſion in the ſea often occaſions permanent head-ach, ſickneſs, languor, catarrh, and other inconveniences.

There is not, however, the leaſt reaſon to ſuppoſe any thing peculiar, or any occult ſalutary qualities in the Buxton bath, more than in any other pure water heated to 82° and confined in a ſtone reſervoir ſo as to retain the ſame temperature during the whole time of bathing. Therefore all the regulations and medical directions for its uſe may be entirely referred to the article Bathing.

Buxton water is alſo taken internally by invalids, and many important virtues have been attributed to it, thus uſed. That it contains nothing deleterious may be ſafely pronounced, both from the evidence of chemical analyſis, and (what is more to the point) from the well-known fact that moſt of the water uſed at the principal hotels for making tea and other common purpoſes is derived from the ſame ſource. Therefore, whatever ſtreſs may be laid on its ſuppoſed inflammatory tendency in certain caſes, it cannot be doubted but that to the reſt of the world it is a pure, ſalutary, innocent beverage.

Like other warm pure waters it is highly advantageous in many painful complaints of the kidnies and bladder and urinary paſſages; like them it powerfully relieves many of the moſt diſtreſſing dyſpeptic ſymptoms, and like them it ſhews no decided action on the bowels, its uſe being ſometimes attended with diarrhœa, ſometimes with the oppoſite ſtate, which laſt generally demands the aſſiſtance of active purgatives.

The caſes for which Buxton is reſorted to are moſtly chronic, ſuch as gout, rheumatiſm, derangement of the biliary and digeſtive organs, diſeaſes of the urinary paſſages, and the like, and it is no ſmall additional recommendation to the invalid to be abundantly furniſhed with every thing that can contribute to convenience, comfort, and amuſement.

Buxton, in *Geography*, a townſhip of America, in the county of York and diſtrict of Maine, ſeated on Saco river; 8 miles north-weſterly from Pepperel-borough, at the mouth of the river, and 118 miles N.E. from Boſton; containing 1938 inhabitants.

BUXTORF, John, in *Biography*, an eminent Hebrew ſcholar, was born at Camen in Weſtphalia, in 1564. As to his religious perſuaſion, he was a Calviniſt; and having ſettled at Baſil, he was appointed by the magiſtrates profeſſor of the Hebrew and Chaldee languages, which he taught with great reputation till his death in 1629. In order to perfect himſelf in theſe languages, he obtained the aſſiſtance of many learned Jews, and thus acquired a predilection in favour of rabbinical learning. His works, in the department of literature to which he was devoted, were numerous, learned, and uſeful. Theſe are as follow; viz. "Lexicon Chaldaicum, Thalmudicum, et Rabbinicum," Baſil. for 1639; a ſmall "Hebrew and Chaldaic Dictionary," compoſed of words from the Bible only, 12mo.; "Theſaurus Linguæ Hebraicæ," 2 vols. 8vo.; a ſmall "Hebrew Grammar," much eſteemed; the Leyden edition of which was reviſed by Leuſden; a large "Hebrew Bible, with the Rabbinical and Chaldaic Paraphraſes, the Maſſora, Tiberias, &c." 4 vols. fol. Baſil. 1618 and 1619: "Synagoge Judaica," a collection of Jewiſh modes and ceremonies, intended to expoſe the Jews, but abounding too much with puerilities intermixed with a maſs of learning; "Inſtitutio Epiſtolaris Hebraica," a collection of Hebrew letters; "Concordantiæ Hebraicæ," 8vo. 1632; "Bibliotheca Rabbinica," with a treatiſe "De Abbreviaturis Hebræorum." Nouv. Dict. Hiſt.

Buxtorf, John, ſon of the preceding, was born at Baſil in 1599, and directing his attention to ſtudies ſimilar to thoſe of his father, he became profeſſor of the oriental languages in his native city. Beſides tranſlations of ſome of the rabbinical writings, ſuch as the Moreh Nevochim of Maimonides, and the book called Coſri, he publiſhed "A Chaldaic and Syriac Lexicon," 4to. 1621; and having adopted his father's ſentiments with regard to the Hebrew vowel points, he defended them againſt Ludovicus Capellus in a book entitled, "Tractatus de Punctorum Vocalium et Accentuum in Libris Veteris Teſtamenti Hebraicis Origine, Antiquitate et Authoritate," Baſil, 1648; and afterwards in a more conſiderable work, entitled, "Anti-critica, ſeu Vindiciæ Veritatis Hebraicæ adverſus Ludovici Capelli Criticam, quam vocat Sacram," Baſil, 1653. He publiſhed likewiſe "Diſſertations on the Old and New Teſtament;" "Exercitationes Philologico-criticæ;" "Florilegium Hebraicum;" and other works. He died at Baſil in 1664.

There are two other *Buxtorfs*, *John-James* and *John*, ſucceſſively profeſſors in the ſame chair at Baſil, and both writers on ſubjects of literature. In general, the ſchool of the Buxtorfs has been reproached, notwithſtanding its acknowledged learning, with too great predilection for the rabbinical doctrines; and their deciſions with regard to the authority of the Hebrew points have been gradually loſing ground, and have now comparatively few advocates, after having been very prevalent through Germany and other Proteſtant countries. Nouv. Dict. Hiſt.

BUXUS, in *Botany*, *box* (a corruption of πυξος, the Greek name in Theophraſtus for the ſame plant, ſo called δια τȣ πυκνον τȣ ξυλȣ, on account of the denſity of its wood). Linn. gen. 1053. Schreb. 1420. Juſſ. 388. Vent. 3. 491. Gært. 630. Claſs and order, *monœcia tetrandria*. Nat. ord. *Tricoccæ*, Linn. *Euphorbiæ*, Juſſ. and Vent.

* Male flowers prominent from the buds. Gen. Ch. *Cal.* perianth three-leaved; leaves roundiſh, obtuſe, concave, ſpreading. *Cor.* petals two, roundiſh, concave, ſimilar to thoſe of the calyx but larger. *Stam.* filaments four, awl-ſhaped, erect, expanding, rather longer than the calyx; anthers erect, twin. *Piſt.* rudiment of a germ without ſtyle or ſtigma.

* Female flowers from the ſame bud generally ſingle, ſurrounded by eight or ten males. *Cal.* perianth four-leaved, ſimilar to thoſe of the male. *Cor.* petals three, ſimilar to thoſe of the male. *Piſt.* germ roundiſh, obtuſely three-cornered; ſtyles three, ſhort, permanent; ſtigmas obtuſe, hiſpid. Linn. *Peric.* capſule globular, very ſmooth, gloſſy, coriaceous, three-grained, before it opens three-beaked, three-valved; valves two-horned; grains of a paper-like ſubſtance, two-valved, opening elaſtically. *Seeds* two in each cell, ovate, attenuated upwards, triangularly compreſſed, obliquely truncate at the ſummit, ſomewhat ſpongy, ſmooth. Gært.

Eſſ. Ch. Male. *Cal.* three-leaved; petals two, rudiment of a germ. Female. *Cal.* four-leaved. *Pet.* three; ſtyles three; capſule three-beaked, three-celled; ſeeds two in each cell.

Species, 1. B. *balearica*, La Marck. "A tree; leaves oblong-ovate, an inch and half long: ſtamens very long." *Branches* ſtraight, four-cornered. *Leaves* oppoſite, on ſhort decurrent petioles, entire, ſmooth, ſhining, coriaceous. *Flowers* in large bunches; anthers linear. A native of Majorca, &c. Cultivated in the royal garden at Paris, but is tender, and does not endure ſevere froſts. 2. B. *arboreſcens* (Sempervirens, Linn.). "Leaves ovate-oblong, attenuated towards the ſummit; anthers ovate; ſtem arboreſcent." La Marck. A ſhrubby tree, from twelve to ſixteen feet high. Stem twiſted, branched. *Leaves* oppoſite, permanent, very entire, emarginate, ſhining, often reddiſh in winter. *Flowers* in ſmall or moderate bunches; filaments not more than the ſixth of an inch long. There is a variety with narrow leaves which, as well as the next ſpecies, is ſaid by Miller to be ſpecifically diſtinct. Its wood is of a cloſe grain, very hard and heavy, and on that account is much uſed by the turner, engraver, carver, mathematical inſtrument maker, comb, and pipe, or flute maker, and a variety of other artizans. A native of moſt parts of Europe, from Britain ſouthward. It is found abundantly in the ſouth of France, Savoy, and Italy, and in the temperate parts of Aſia and America. In England it has given name to Box-hill in Surrey, Boxwell in Glouceſterſhire, and Boxley in Kent, all which are mentioned by Ray as producing it; but on account of the value of the wood, the quantity is now much diminiſhed. Mr. Woodward has more recently obſerved it on the chalk hills near Dunſtable. 3. B. *ſuffruticoſa*, dwarf box. "Leaves ſmall, obovate; ſtem a low under ſhrub." La Marck agrees with Miller in treating this as a diſtinct ſpecies, though nearly related to the preceding. When ſuffered to grow freely, it never riſes to a greater height than about three feet, and grows in thick, much branched tufts. Its leaves alſo are ſmall, and rather ovate or roundiſh oval, with a white line on their back, more ſtrongly marked than in the preceding ſpecies. It grows wild in many parts of France, by the road ſides, about villages, and in ſtony waſte places. It is ſingular that it does not flower when cultivated in England, and was never ſeen in that ſtate by Mr. Miller, though encouraged to grow many years in the greateſt luxuriance. La Marck does not mention this circumſtance, nor, indeed can it be ſuppoſed to be thus barren in France, where it is ſaid to be truly indigenous. 4. B. *myrtifolia*, myrtle-leaved box. "Leaves ſmall, oblong, rather narrow; ſtem a low under ſhrub." La Marck. It reſembles the preceding in its ſize, but differs both in habit and foliage, not forming a thick tuft or buſh, but having an elongated ſtem like a tree, with open branches; its leaves are rather narrow, with ſcarcely any appearance of a white line on their ſurface. A ſmall branch in flower, communicated to La Marck, had no female flowers. Native place not known. Encyc. Methodique. Box was formerly employed as a medicine in various diſeaſes, but in Ray's time was grown into diſuſe on account of its offenſive ſmell; and before his time even its medical virtues began to be called in queſtion. Dr. Withering, however, has recently recommended it; obſerving, that an empyreumatic oil diſtilled from its ſhavings is often uſed as a topical application for the piles; that it frequently relieves the tooth-ach, and has been given internally in epilepſies, and that the powdered leaves deſtroy worms.

Propagation and Culture. The arboreſcent box was much admired by our anceſtors on account of its being eaſily clipped into the ſhape of animals, and other fantaſtic appearances. It was in equal requeſt with the Romans for the ſame purpoſe. The younger Pliny, in particular, gives a florid deſcription of the pleaſure grounds at one of his country ſeats, in which, among other curious devices, the letters of his own name, and of other words, were orderly expreſſed in rows of ſhorn box. Theſe extravagancies have now given way to a juſter taſte in ornamental gardening; but box is ſtill cultivated in our nurſeries as a beautiful evergreen; and, left to its natural growth, is a pleaſing addition to the ſhrubbery. It has the additional recommendation of thriving under the thickeſt ſhade, and is able to withſtand the ſevereſt weather of our climate. The dwarf box is uſed to divide the beds from the walks of flower-gardens; and though it has been condemned as affording ſhelter for noxious inſects, the ſame objection will lie, in ſome degree, againſt every other kind of vegetable bordering; but ſuppoſing it to be peculiarly liable to this inconvenience, the evil is conſiderably counterbalanced by its cloſeneſs and durability. It may be propagated by cuttings, layers, and ſeed. The cuttings ſhould be planted, about the time of the autumnal rains, at the diſtance of four inches from each other; they ſhould be a foot long, and rather more than half of the length ſhould be covered by the ſoil. A ſlip of the laſt year's growth, ſtripped from the wood, is an excellent ſet. The cuttings or ſlips may ſtand three years, and ſhould then be tranſplanted into the nurſery in moiſt weather, any time between Auguſt and April. The layers ſhould be earthed between Michaelmas and March. This, as profeſſor Martyn obſerves, is one of its natural methods of propagation, for when it breaks down by its own weight, or by a fall of ſnow, it ſends out fibres ſoon after it has come into contact with the ground. The ſeed ſhould be ſown, as ſoon as it is ripe, on a light loam or ſand in a ſhady border, and regularly watered. Some will come up the next ſpring, but ſome will lie in the ground till the next ſeaſon. They ſhould then have the ſame treatment as the cuttings. This is ſaid to be the only method in which large trees can be raiſed. The beſt time for removing the tree is October. Martyn's Miller.

BUXY, in *Geography*, a town of France, in the department of the Saône and Loire, and chief place of a canton in the diſtrict of Chalons-ſur-Saone, and 8 miles S.W. of it. The place contains 1602, and the canton 14,085, inhabitants; the territory includes 277½ kiliometres and 31 communes.

BUY DE MORNAS, CLAUDE, in *Biography*, was born at Lyons and died at Paris in 1783. He is principally known as the author of an inſtructive and uſeful Atlas of Geography and Hiſtory, Paris, 1762 and 1770, 4 vols. 4to. He alſo publiſhed a Coſmography, on the ſame plan, in 1770.

BUY, in *Geography*. See BUIS.

BUYING, the act of making a purchaſe, or of acquiring the property of a thing for a certain price.

Buying ſtands oppoſed to ſelling, and differs from borrowing or hiring, as in the former the property of the thing is alienated for perpetuity, which in the latter is not.

By the civil law, perſons are allowed to buy hope, *ſpem pretio emere*, that is, to purchaſe the event or expectation of any thing: e. gr. the fiſh or birds a perſon ſhall catch, or the money he ſhall win in gaming.

There are divers ſpecies of buying in uſe among traders; as buying on one's own account, oppoſed to buying on commiſſion; buying for ready money, which is when the purchaſer pays in actual ſpecie on the ſpot; buying on credit, or for a time certain, is when the payment is not to be preſently made, but, in lieu thereof, an obligation given by the buyer for payment at a time future; buying on delivery, is when the goods purchaſed are only to be delivered at a certain future time.

Buying *the refuſal*, is giving money for the right or liberty of purchaſing a thing at a fixed price, in a certain time to come; chiefly uſed in dealing for ſhares in ſtock. This is ſometimes alſo called by a cant name, *buying the bear*.

Buying of *titles*. See Maintenance.

Buying *the Small-pox*. See Small-Pox, *Inoculation of*.

BUYTRAGO, in *Geography*, a ſmall town of Spain, in New Caſtile, on the confines of Old Caſtile, in front of which the mountain-ſtream Lozoya winds along a deep rocky bed: while, on the other ſide, the town, with its towers and ſteeples, leans romantically againſt a ſteep aſcent in a receſs among the mountains, that ſeparates the two Caſtiles. Theſe mountains are rich in minerals; and the environs of this city, which is epiſcopal, are famous for the wood which they furniſh. It is 36 miles N. of Madrid, and 18 E. of Segovia.

BUYTRON, a town of Spain, in Andaluſia; 27 miles N. W. of Seville.

BUZANÇAIS, a town of France, in the department of the Indre, and chief place of a canton in the diſtrict of Chateauroux, 11 miles W.N.W. of it. N. lat. 46° 38′. E. long. 1° 29′. The town contains 3199, and the canton 11,130, inhabitants: the territory includes 422½ kiliometres and 13 communes.

BUZANCY, a town of France, in the department of Ardennes, and chief place of a canton in the diſtrict of Vouziers, 2 leagues N. of Grandpré. The town contains 7 4, and the canton 8275, inhabitants; the territory includes 265 kiliometres and 24 communes.

BUZARA, in *Ancient Geography*, a mountain in the eaſtern part of the interior of Africa. Ptolemy.

BUZARAS, a town of Africa, in Mauritania Cæſarienſis.

BUZAW. See Butzo.

BUZERI, a people of Aſia, in Cappadocia, on the weſt of the Euxine.

BUZES, a people of Africa, in Marmarica.

BUZET, in *Geography*, a ſmall town of France, in the department of the Upper Garonne, 4½ leagues N.E. of Toulouſe. N. lat. 43° 47′. E long. 1° 45′.

BUZIKINA, a town of Siberia, 220 miles E. of Eniſeiſk.

BUZIM, a town of Siberia, on the Tchulim, 80 miles N.N.E. of Tomſk.

BUZULEITSK. See Busulutsk.

BUZWARAH. See Bezoara.

BUZY, a town of France, in the department of the Meuſe, and diſtrict of Verdun, 13 miles E. of it.

BUZZARD, in *Ornithology*, the trivial name of ſeveral ſpecies of the falcon tribe, as, for inſtance, the common buzzard, *falco buteo*, greater buzzard, *falco gallinarius*, American buzzard, *falco borealis*, honey buzzard, *falco apivorus*, Java buzzard, *falco Javanicus*, &c.

Buzzard, *American*, of Latham, *red-tailed falcon* of Arctic Zoology, is the Falco *borealis*; the cere and legs are pale yellow; the body is brown above and white below, the tail is of a pale ruſt colour, having a tranſverſe duſky or black narrow bar near the end. It inhabits North America, particularly Carolina. Its ſize is about that of the common buzzard.

Buzzard, *Honey*. See Apivorus.

Buzzard, *Moor*, *falco æruginoſus*, the *milvus æruginoſus* of Aldrovand and Ray, and the *buſard* of Buffon, has the cere greeniſh, the body browniſh-grey, the crown of the head, chin, axillæ, arm-pits, or ſpace below the root of the wings, and legs, yellow. It inhabits Europe, building its neſt in marſhy places, and ſubſiſting on aquatic birds, fiſh, and rabbits.

Buzzard's *Bay*, in *Geography*, a bay of America, in the ſtate of Maſſachuſetts, lying between 41° 25′ and 41° 42′ N. lat. and between 70° 38′ and 71° 10′ W. long. This and Barnſtaple bay on the north-eaſt form the peninſula, whoſe extremity is called cape Cod. It runs into the land about 30 miles N.E. by N. and its mean breadth is about 7 miles.

BUZZARDET, in *Ornithology*, the whitiſh falcon, *Falco albidus*.

BYAREM, in *Geography*, a town of Hindooſtan, in the country of the Nizam, 89 miles N.E. of Hydrabad, and 60 E. of Warangole.

BYBASSUS, in *Ancient Geography*, a maritime town of Aſia Minor, in Caria, probably ſituated in the country called by Pliny *Bubaſſus*.

BYBE, a country of Thrace.—Alſo, a town of Italy, on the confines of Peucetia. Steph. Byz.

BYBERRY, in *Geography*, a townſhip of America, in the county of Philadelphia, and ſtate of Pennſylvania; containing 579 inhabitants.

BYBLIS, in *Ancient Geography*, a mountain of Aſia Minor, before the town of Miletus.

BYBLOS, or Byblus, a maritime town of Phœnicia, ſituate between Berytus and Botrys, 18 miles S. from Tripoli according to the Itinerary of Antonine. The ancient inhabitants of this town ſerved in all the maritime expeditions of Tyre, and as they excelled in all arts relating to wood, they were employed in building Solomon's temple at Jeruſalem, 1 Kings chap. v. At this time they were ſubject to the Tyrians; but when Phœnicia was reduced under the dominion of the Perſians, they had their own kings. According to Arrian (de Exped. Alex.) their ſhips formed a part of the fleet of Darius: but when Alexander had entered Phœnicia and made himſelf maſter of Byblus, they deſerted Darius and united their naval force with that of Alexander. Under the ſucceſſors of Alexander, Byblus ſometimes belonged to Egypt and ſometimes to Syria. Strabo informs us (l. 16. vol. ii. p. 755.), that Pompey reſcued them from the oppreſſive tyranny of one of their ſovereigns by cutting off his head. From him we learn, that it was ſeated on an eminence at a ſmall diſtance from the ſea, and that it was the royal reſidence of Cinyras, and that it was the ſeat of the famous ſuperſtition practiſed in its temples in memory of Adonis. See Adonis. The river Adonis flowed from the adjacent mountains, and paſſing by Byblus, diſcharged itſelf into the ſea about two leagues S. of the town. This river, called Ibrahim and Obrahim Baſſa, has the only bridge to be ſeen, that of Tripoli excepted, from thence to Antioch. It conſiſts of a ſingle arch, 50 feet wide and upwards of 30 high, of a very light architecture, and appears to have been a work of the Arabs. Byblus is now known by the name of Djebail or Gibyle, and is the moſt conſiderable town in that diſtrict of the pachalic of Tripoli, denominated Kefrouan, and extending from Nahr-el-kelb, by Lebanon, as far as Tripoli. It has not, however, above 6000 inhabitants. Its ancient port reſembles that of Latakia or Laodicea, but is in a worſe ſtate, ſcarcely any traces of it remaining. Volney's Travels in Egypt and Syria, vol. ii. p. 176.

Byblos, a fortified place of Egypt, ſeated on the Nile. Steph. Byz.

BYCE, Buges, or Sacra Palus, in *Geography*, a lake of Cherſoneſus Taurica, in European Sarmatia, to the weſt of the *Palus Mæotis*, from which it is ſeparated by an iſthmus. It is mentioned by Ptolemy, Pliny, and Strabo, who aſſigns to it a circuit of 4000 ſtadia.

BYDEAS-KIRCHE, a town of Sweden, in Weſt Bothnia, near Umea.

BYEFIELD, a pariſh of Newbury, in Eſſex county, and ſtate of Maſſachuſetts, North America, having a quarry of limeſtone, in which is found aſbeſtos, and, in its vicinity, beautifully variegated marble. A flouriſhing woollen manufactory is alſo eſtabliſhed in this place, together with machinery for cutting nails. Dummer academy is in this pariſh.

BYGLAND, a lake of Norway, in the dioceſe of Chriſtianſand, and diſtrict of Raabygdelagat, formed by the river Otterae, on the weſt ſide of Byglefield, and precipitating itſelf at the waterfall of Fennie, in the pariſh of Esje.

BYHORS, an iſland of the Eaſt Indies, lying weſt of Borneo.

BYK, a river of European Turkey, which runs into the Dnieſter, 6 miles N.W. of Bender.

BY-LAWS, thoſe private ordinances of ſubordinate communities, by which their affairs are governed and regulated; the rights of the individuals compoſing them defined; and wrongs relative to their joint concerns, prohibited and puniſhed.

The word is formed from the Saxon *by*, *habitation*, *vill*, and *laxa*, q. d. *lex villæ*, or *town-law*.—They are alſo called *birlaws*, *byrlaws*, and *burlaws*, *bilager*, or *bellagines*. Such is the cuſtom in Kent of deciding controverſies among neighbours about boundaries, by the ſeneſchals, or bailiffs.

In Scotland, thoſe are called *laws of burlaw*, or *byrlaw*, which are made and determined by neighbours, elected by common conſent in burlaw-courts; wherein cognizance is taken of complaints betwixt neighbour and neighbour.—The men thus choſen as judges or arbitrators are called *burlaw-men*, or *byrlaw-men*.

Every body of men united by common intereſts, and having affairs of common concern, muſt neceſſarily have ſome general rules for the regulation of their conduct with reſpect to them. Without theſe nothing like unity or concurrence of action could poſſibly exiſt, whatever were the objects of the aſſociation. Theſe regulations may be divided into two claſſes, with regard to the nature of the body to which they relate. Societies which are formed merely by the voluntary aſſociation of their members muſt have their rules or by-laws, as well as thoſe communities which have a known deſcription, and are recognized as forming part of the general conſtitution of the country: the former, however, receive no aid from the general law of the land in the enforcement of obedience to their rules, and have no ultimate remedy for their infraction but the expulſion of the diſobedient member; whereas, the general law will enforce obedience to the by-laws of the latter, when in themſelves legal and reaſonable, and duly made on a ſubject within the juriſdiction of the legiſlating body. Thus, the inhabitants of a pariſh or town not incorporated may make a by-law for the repair of the church or of a highway, or concerning any thing within their diſtrict of which the public weal requires the regulation, and in ſuch caſe the majority ſhall bind the whole. 5 Co. 63, a. Hob. 212. 3 Salk. 76. The reſiants in a leet, or the tenants of a manor, may make a by-law relative to any thing which concerns the common intereſt; as, in the latter caſe, to regulate the exerciſe of their rights of common. Mo. 75. 579. 584. 1 Rol. Abr. 366. Hob. 212.

From what has been already ſaid, it will naturally be inferred, that this power, which is, under ſome circumſtances, conceded even to ſuch bodies as are not incorporated, muſt, *à fortiori*, belong to ſuch as are; the very exiſtence of whoſe rights depends on that of the body itſelf, and does not ariſe, as in the former caſe, from thoſe of the members conſidered as individuals. This right of legiſlation belongs originally, unleſs it be otherwiſe ſpecified in the charter of incorporation, to the body at large; but they may afterwards delegate it to a ſelect body, who then become the repreſentatives of the whole, and may exerciſe this authority as extenſively as the community itſelf might have done. Rex v. Spencer, Burr. 1837. In many inſtances, however, this power of making by-laws has been originally veſted in a ſelect body by the ſame charter by which the corporation itſelf was created, and in this caſe it ſeems that the body at large does not poſſeſs it. Rex v. Head, Burr. 2521. The king may, if he pleaſes, at the time of creating a new corporation aggregate, enact a code of by-laws by which it ſhall be governed, as may alſo the founder of an eleemoſynary corporation, each having a right to ſtipulate on what terms alone the creature of his bounty ſhall be endued with exiſtence; but neither the one nor the other can afterwards, without expreſs reſervation of ſuch right or the conſent of the body, change or alter ſuch code; nor will ſuch by-laws, as to their general legality or operation, have any other force or effect than they would have had if enacted by the corporation itſelf. Skin. 513. Hob. 210.

With regard to the *ſubſtance* of a by-law, it is not only neceſſary that it ſhould not militate againſt the expreſs proviſions of the law of the realm; but it muſt alſo be reaſonable and conſiſtent with its general principles, which reaſonableneſs and legality are to be determined by the judges of the ſuperior courts, whenever its validity ſhall come in queſtion before them. To ſtate the various poſſible caſes in which a by-law would be void, would be therefore to enumerate all thoſe proviſions, and the principles and maxims on which they are founded. We ſhall, however, mention a few of the moſt general caſes in which ordinances of this kind have been holden to be invalid. A by-law cannot direct the forfeiture of goods, 8 Co. 125, a; or the levying of money on any ſubject, except in thoſe caſes in which a burthen is to be borne by a particular ſociety of which he is a member; as in that already mentioned, of aſſeſſing pariſhioners or townſmen, for the repair of a church or highway. Jeffrey's Caſe, 5 Co. 66, a. Nor can it operate *ex poſt facto*. 1 Keb. 733. Or alter a conſtitution given by the crown. Rex v. Breton & an. Burr. 2260). It muſt not operate in reſtraint of trade. Harriſon v. Godman, Burr. 12. Heſketh v. Braddock, Burr. 1847. 1 Roll. Abr. 363; though it may regulate it and prohibit fraud. 5 Co. 52, b. Nor can it direct a penalty to be ſued for in a court in which the jurors muſt neceſſarily be intereſted as members of the corporation. Burr. 1855.

As to the power of a by-law to bind thoſe who are not members of the legiſlating body, there ſeems to be a diſtinction between thoſe corporations which are inveſted with a local juriſdiction, and thoſe which, being eſtabliſhed for purpoſes with which locality has no connection, have only a juriſdiction over their own internal concerns. When the corporate body has a juriſdiction over a certain territory, a by-law made by them for the public good, and whoſe object is general, without being limited to people of any particular deſcription, binds every body coming within the limits of the juriſdiction, whether ſtrangers or members of the corporate body; for every man, ſays Holt, who comes within the local juriſdiction of a corporation muſt take notice of their by-laws at his peril. Skin. 35.

This right of making by-laws for their own government, not contrary to the law of the land, was allowed by the law of the twelve tables at Rome. But no trading company is, with us, allowed to make by-laws, which may affect the king's prerogative, or the common profit of the people, under penalty of 40l. unleſs they be approved by the chancellor, treaſurer, and chief juſtices, or the judges of aſſiſe in their circuits; and even though they be ſo approved, ſtill, if contrary to law, they are void. Stat. 9 Hen. VII. c. 7. 11 Rep. 54.

BYLAZORA, in *Ancient Geography*, a town of Europe, in Pæonia, advantageouſly ſituated on the confines of Macedonia and Dardania. It was taken by Philip, and is mentioned by Livy. Polybius.

BYLOT's Bay, in *Geography*. See Baffin's *bay*.

BYLTÆ, in *Ancient Geography*, a Scythian nation bordering on the weſt of Imaus, according to Ptolemy, and correſponding to Baltistan or Little Thibet, which ſee.

BYMASUS, a town of Greece, in Pœonia. Steph. Byz.

BYNG, George, in *Biography*, lord viſcount Torrington, an eminent naval officer, deſcended from an ancient family in Kent, was born in 1663. At the age of 15 he entered into the ſea-ſervice; but quitted it in three years, for the purpoſe of ſerving under general Kirk, governor of Tangier, who advanced him from the ſtation of a cadet, firſt to that of an enſign, and then to a lieutenancy. In 1684, he returned to the naval department; and in the following year, he was in great danger of loſing his life by engaging and boarding a Zinganian pirate; which ſunk with him, ſo that he was taken out of the ſea in a wounded ſtate, and almoſt expiring. In 1688, being on board the fleet that oppoſed the landing of the prince of Orange, he was confidentially employed in negociating its ſurrender to the prince's party. Soon after he was raiſed to the poſt of captain, and ſerved under admirals Rooke and Ruſſell in the Channel and Mediterranean. In 1702, he had the command of a third rate at the taking and burning of the French fleet at Vigo; and in the following year he was made a rear-admiral, and ſerved with ſir Cloudeſly Shovel in the Mediterranean, by whom he was deputed to negociate a peace with the Algerines. In 1704, he commanded the ſquadron that attacked and cannonaded the garriſon of Gibraltar, and induced a capitulation; and he ſo much diſtinguiſhed himſelf in the battle of Malaga, that, as a recompence of his ſervices, he was knighted by queen Anne. In 1706, he was diſpatched with a ſquadron of 20 ſhips of war for the relief of Barcelona, and he performed various important ſervices on the coaſts of Spain and Portugal during that and the following year. On his return home he was ſignally preſerved from ſhipwreck, when ſir Cloudeſly Shovel, under whom he ſerved, was loſt on the rocks, called the "Biſhop and his Clerks." In 1708, he was advanced to the rank of admiral of the blue, and commanded a ſquadron that was employed to prevent an invaſion of Scotland by the pretender, by means of a French army from Dunkirk. He purſued the French fleet to the Scots coaſt, and obliged it to return without landing its troops. Soon after his arrival in London, he was appointed to the command of a fleet deſtined for a deſcent on the coaſt of France, and in the ſame year he had the honour of conducting the queen of Portugal to Liſbon, where he received a commiſſion appointing him admiral of the white, and a very valuable preſent from her majeſty of her picture ſet in diamonds. In 1709, he commanded a ſquadron in the Mediterranean; and on his return he was made a lord of the admiralty. But diſapproving the meaſures of adminiſtration towards the cloſe of the queen's reign, he was removed. However, on the acceſſion of George I. he was reinſtated in his office, and created a baronet. In 1717, when an invaſion of Great Britain was projected by Charles XII. of Sweden, ſir George was ſent to the Baltic with a fleet, which acted in concert with the Danes, and remained there till the Swedes had abandoned their deſign. In the following year, the Spaniards landed an army in Sicily, and ſir George Byng was deputed with a fleet to counteract their operations. This was conducted in a manner that redounded very highly to his reputation and to the honour of the Britiſh flag. Upon his arrival in the bay of Naples, he found that the Spaniards had made themſelves maſters of the town of Meſſina, and were engaged in the ſiege of the citadel. The Engliſh were obliged, by their treaties with the emperor, to defend the Sicilians; but as England and Spain were not at war, the admiral attempted to negociate with the Spaniſh commander a ceſſation of hoſtilities; his efforts, however, were ineffectual, and he proceeded, according to his inſtructions, to make uſe of force. Having deſcried the Spaniſh fleet, conſiſting of 27 ſail of ſhips of the line and frigates, he commenced the attack; and in the running fight which enſued, took ſeven Spaniſh ſhips, the admiral's being one of them; and ſeveral more were afterwards captured and deſtroyed by a detachment under captain Walton, who, in the laconic ſtyle of an officer, who valued himſelf more in performing than in deſcribing a gallant action, informs the admiral, "We have taken and deſtroyed all the Spaniſh ſhips and veſſels which were upon the coaſt, the number as per margin." The damage ſuſtained by the Engliſh fleet, which, indeed, was of ſomewhat ſuperior force, was very inconſiderable. The Spaniards complained of being taken by ſurpriſe, and when they had no apprehenſion of hoſtilities. The conduct of ſir George Byng, however, who executed the orders with which he had been entruſted, was not cenſurable; and the action was very important to the ſtate of political affairs at the period in which it occurred. The admiral remained in the Mediterranean, aſſiſting the German troops to recover Sicily, and preventing the eſcape of the Spaniſh troops, till all affairs were ſettled, and the court of Spain had acceded to the quadruple alliance. The talents diſplayed by the admiral on this occaſion, both as a negociator and as a commander, were ſuch as to enſure the confidence of all parties. Upon his return, his ſervices were rewarded with the office of treaſurer of the navy, and the rank of rear-admiral of Great Britain; and in 1721, he was raiſed to an Engliſh peerage by the title of viſcount Torrington and baron Byng of Southil, Bedfordſhire. He was alſo created a knight of the bath in 1725. On the acceſſion of George II. he was placed at the head of the admiralty, in which ſtation he died of an aſthma, in January, 1733, in the 70th year of his age. He had ſeveral children, one of whom was the unfortunate admiral John Byng, executed upon a rigorous ſentence, for defect of duty, in 1757. Biog. Brit.

BYNNI, in *Ichthyology*, a ſpecies of Cyprinus, diſtinguiſhed by having thirteen rays in the dorſal fin, the third of which is thick and horny; tail linear, bifid; beards or cirri, four. Forſk. A fiſh of a ſilvery colour, and oblong oval form, that is very common in the Nile. The length is about one cubit: the fleſh excellent.

BYRAM. See Bairam.

BYRAN, in *Geography*, a river of North America, forming part of the weſtern boundary of Connecticut, and falling into Long Iſland ſound, oppoſite to Captain's Iſlands.

Byran, a town in America, in Charles county, Maryland, about 9 miles N.E. from Port Tobacco, and 24 S.E. from the Federal city.

BYRD FORD, lies on the eaſtern bank of Monongahela river, on the ſouth ſide of the mouth of Red-ſtone Creek; 35 miles S. from Pittſburg, and about 39 N.W. from Ohiopyle Falls. Near this ſpot ſtands the compact part of the town of Brownſville. N. lat. 39° 58′. W. long. 81° 12′.

BYROM, John, in *Biography*, a poetical writer, and inventor of a new ſhort hand, was born at Kerſal near Mancheſter, in 1691; and having finiſhed his courſe of grammar learning at Merchant Taylors' ſchool in London, was admitted a penſioner of Trinity college in the univerſity of Cambridge, in 1708. To logic and philoſophy he directed only that degree of attention which was neceſſary to qualify him for his degrees; but his predominant inclination was to poetry; and of his talents in this way, the firſt public ſpecimen appeared in his beautiful paſtoral, "Colin to Phœbe," printed in the 8th volume of the Spectator, No. 603; the two letters on dreams in the ſame volume, 586 and 593, are alſo aſcribed to him. Mr. Byrom, having taken both his degrees in arts, was choſen fellow of his college in 1714, and by the ſweetneſs of his temper and the ſobriety of his manners, recommended himſelf to the particular notice of Dr. Bentley, the maſter. His fellowſhip however terminated in 1716, on account of his not having entered into holy orders; and leaving college, he went abroad and reſided for ſome time at Montpellier for the recovery of his health. In France he became acquainted with Father Malebranche's Search after Truth, and ſome pieces of Mad. Antoinette Bourignon; and he returned home prepoſſeſſed in favour of the viſionary philoſophy of the former, and the enthuſiaſtic extravagance of the latter: indeed, towards the cloſe of his life he ſeems, by ſome of his poems, to have been attached to the myſticiſm of Jacob Boehmen. Whilſt he was deliberating what courſe of life to purſue, his mind became more unſettled in conſequence of his paſſion for an amiable couſin, who encouraged his addreſſes, and whom at length he married againſt the conſent of her parents. This connection involved him in difficulties; and as he obtained no aſſiſtance from her father, who was in affluent circumſtances, he was reduced to the neceſſity of ſeeking ſupport by teaching ſhort hand, according to a new method which he had invented at Cambridge. He began at Mancheſter, and leaving his wife with her relations at that place, he removed to London, where he proſecuted his inſtructions in that art, deriving from them for ſeveral years a competent ſubſiſtence. In this art he was a competitor with Weſton, who challenged him to a trial of ſkill. In this conteſt he gained a deciſive victory; and in conſequence of it, he was encouraged by a great number of pupils, ſeveral of whom were perſons of rank and quality; and he occaſionally read a lecture upon the hiſtory and utility of ſhort hand, which, being interſperſed with various ſtrokes of wit that were natural to him, was very entertaining. His winter months were devoted to this employment in London, and he ſpent the ſummer ſeaſon with his family at Mancheſter. In March 1724, he was choſen a fellow of the Royal Society. At length the family eſtate at Kerſal devolved upon him by the death of his elder brother, without iſſue. By this acceſſion of fortune he was enabled to enjoy, without thoſe interruptions which his former employment had occaſioned, the conjugal felicity to which his own diſpoſition was adapted, and to which the faithful and affectionate attachment of his wife very eminently contributed. During the latter part of his life, he almoſt wholly devoted himſelf to the compoſition of various pieces in verſe, ſome of which are witty and humorous; and others, the moſt numerous, are on ſerious ſubjects. He was ſo accuſtomed to the language of poetry, that his diſſertations on learned and critical queſtions were written in verſe. Theſe were collected in September, 1773, and printed at Mancheſter in two volumes, 12mo. Mr. Byrom cloſed an innocent and inoffenſive life with reſignation and cheerfulneſs at Mancheſter in September, 1763, in the 72d year of his age. Some time before his death, he is ſaid to have committed ſeveral of his lighter pieces to the flames; and theſe were of ſuch a nature that they deſerve the character expreſſed in a diſtich of Ovid, adopted as the motto of Mr. Waller's works:

"Non ego mordaci diſtrinxi carmine quemquam;
Nulla venenato eſt litera mixta joco."

By the great truths of Chriſtianity his mind had been ſo much impreſſed in his early years, that he derived his chief pleaſure from employing his pen on religious ſubjects. Mr. Pegge, (Archeol. vol. v. p. 12,—32.) has thus delineated his character: "My late worthy friend, Mr. Byrom, whoſe memory I ſhall always revere, was undoubtedly a man of parts and learning, but rather too fond ſometimes of a paradox. Amongſt his other qualifications, he had a particular knack at verſification, and has accordingly delivered his ſentiments on this ſubject (viz. the Hiſtory of St. George) as well as on all others, in a metrical garb; for, I preſume, we can ſcarcely call it a poetical one." Biog. Brit.

BYRON's Bay, in *Geography*, lies on the north-eaſt coaſt of Labrador.

Byron's *iſland*, a low flat iſland in the Pacific ocean, about 21 miles in length. S. lat. 1° 18′. E. long. 171°.

Byron's *ſtrait*, a narrow ſea which ſeparates New Ireland from New Hanover.

BYRRHUS, in *Entomology*, a genus of coleopterous inſects having the antennæ clavated and the club perfoliated: palpi, or feelers, equal and ſomewhat clavated; and both the jaw and lip bifid.

The ſpecies of this genus are gigas, pilula, ater, dorſalis, varius, æneus, nitidus, faſciatus, and vireſcens.

BYSCHIZ, in *Geography*, a town in Bohemia in the circle of Boleſlaw; 6 miles E. of Melnik.

BYSSUS, in *Botany*, (βυσσος, Gr. ſaid by Julius Pollux to be a ſpecies of flax, brought from India into Egypt: but Pauſanias and Philoſtratus deſcribe it as the produce of a tree, ſuppoſed by Dillenius to be the now well known woolly ſubſtance in which the ſeeds of goſſypium, or the cotton tree, are enveloped. Dillenius ſeems to be the firſt among the moderns who revived the name and applied it to a tribe of plants till then either neglected or confounded with the fungi and lichens. It appeared in his edition of Ray's Synopſis, 1724, and afterwards more fully in his Hiſtoria Muſcorum, 1741; but had in the mean time been adopted by Micheli in his Nova Genera, 1729.) Linn. gen. 1208. Schreb. 1673. Juſſ 6. Claſs and order, *cryptogamia algæ*. Nat. ord. *Algæ*, Juſſieu. Gen. Ch. "Fibres ſimple, uniform, like fine down. Fructification unknown." The genus as it was formed by Dillenius included ſpecies, ſome of which have the appearance of very minute duſt, others of fine wool; it is accordingly divided by Linnæus into two diſtinct ſections. Haller was of opinion that the powdery Byſſi are properly lichens: Dr. Withering, in the third edition of his Botanical Arrangements, has actually placed them in that genus; and Dr. Smith was once inclined to entertain the ſame idea, (ſee Engliſh Botany, p. 192.) but on further conſideration he has adopted Acharius's new genus lepraria for all the ſpecies that have no ſhields, and appear to be propagated by their powdery part. (See Eng. Bot. p. 1349.) Supported by ſuch reſpectable authority we have made the neceſſary alteration in the generic character, and ſhall inſert in the preſent article only ſuch as conſiſt of real filaments.

Species 1. B. *ſeptica*, Linn. Syſt. Nat. vol. 3. p. 235. "Hair-like, very ſoft, parallel, very eaſily broken, pale." Flaky Snow Byſſus; Dill. Muſc. tab. 1. fig. 9. It conſiſts of unbranched threads ſo tender and light that the breath will diſperſe it, and when handled ſeems to diſſolve into water from the moiſture attached to it. Found in damp cellars and vaults, moſt luxuriantly on bins or wooden ſhelves where wine has been ſpilt, hanging down in form of a jelly bag, to the length of a foot or more. Withering. 2. B. *flos aquæ*, Linn. Sp. Pl. "Threads feathered, ſwimming on water." Naturaliſts are divided in opinion concerning this ſubſtance. Linnæus ſeems to have founded his ſpecific character on the obſervations of Bergius. Dillenius, by whom it was firſt mentioned in a botanical point of view, in his edition of Ray's Synopſis, compares it to paper, and ſays, that in ſpring it covers ſtagnant waters with a very thin and even cruſt, not like a conferva, conſiſting of threads, nor of any perceptible downy matter, but merely of a thin green lamina. Linnæus in his Flora Lapponica, publiſhed thirteen years afterwards, notices a green farinaceous Byſſus intermingled with water, which Dillenius, in his Hiſtoria Muſcorum, quotes as a ſynonym of his green paper Byſſus, obſerving that this plant alſo at firſt conſiſts of a powdery matter which afterwards unites itſelf into a membranaceous ſubſtance, and when dry becomes white; it is the aquatic membranaceous Byſſus of the Flora Lapponica, which Linnæus himſelf in the Species Plantarum makes a variety of B. flos aquæ. Weir, in his Cryptogamia, aſſerts that it is not a real plant, but only unorganiſed vegetable matter, produced by the diſſolution of putrefied plants. Dr. Withering, on the other hand, believed that it will prove a conferva; for obſerving a pond in the ſtate of flowering, as the country people term it, he examined ſome of the water, but the particles floating in it were ſo minute, that even with the aſſiſtance of a very good microſcope he could not ſatisfy himſelf as to their figure or ſtructure. Two or three weeks later in the ſpring, he found threads not jointed nor branched, either ſtraight or coiled up like a cork-ſcrew. Some of this water kept in a glaſs jar, after two or three weeks more, let its contents ſubſide, and then it began to appear like a conferva. The threads ſoon became much larger and aſſumed a jointed appearance. La Marck deſcribes it from actual obſervation as conſiſting of ſhort, feathered, extremely fine threads, forming a ſoft green cruſt on the ſurface of the water. 3. B. *cancellata*, Linn. "Threads exactly and univerſally latticed. Ledern. Micro. tab. 72. Found in freſh ſtill waters, ſwimming like a kind of mucor or mould of a yellowiſh green colour. 4. B. *phoſphorea*, Linn. "Downy, of a violet colour, and growing on rotten wood." Dill. tab. 1. fig. 6. Conſiſting at firſt of very fine ſhort upright down; afterwards preſſed cloſe to the wood, cloathing it like a thin membrane or cruſt, taking a deeper violet colour. 5. B. *velutina*, Linn. "Filamentous; green; filaments branched." Dill. tab. 1. fig. 14. Found on trees, rocks, and the ſurface of the ground in ſhady places, which it covers with a very fine ſhort ſilky down, like velvet, of a beautiful green colour. 6. B. *aurea*, Linn. "Filaments ſimple or branched, cloſely matted together, powdery, orange-coloured." Dr. Smith, Dill. tab. 1. fig. 16. Eng. Bot. 212. Fibres very fine, thick-ſet, erect. Found on calcareous rocks and banks, particularly in Derbyſhire, and ſometimes on damp limeſtone buildings. It often uniformly covers a ſpace of many inches in diameter, and looks like a fine piece of orange-coloured cloth or velvet, but the ſurface is ſometimes more tufted and broken, and it frequently grows in a ſtraggling manner, ſcattered over moſſes. It loſes its beautiful golden colour in five or ſix weeks after it is gathered, and then becomes of a permanent greeniſh grey. Dr. Smith. 7. B. *nigra*, Hud. "Filaments branched, matted, powdery, black." Dr. Smith. Dill. 1. 18. Eng. Bot. 702 Firſt ſent to Dillenius by Dr. Richardſon from the weſt-riding of Yorkſhire. It has ſince been often found on ſhady overhanging rocks in the alpine parts of England, Scotland, and Wales. It forms patches of various ſizes, perfectly black, and may eaſily be ſcraped from the ſtone. When gathered, it ſtrongly reſembles a piece of felt ſcraped from a hat, both in texture and colour. It conſiſts of a mat of fine, ſoft, but elaſtic, branched filaments, often covered with an equally black, ſooty powder, which is probably the ſeed, though it has not been obſerved to be produced at any particular ſeaſon excluſively. Dr. Smith. 8. B. *purpurea*, Lightfoot; (Rubra Hudſ. 2d ed.) "Filaments erect, ſimple or branched, purpliſh." Dr. Smith. Eng. Bot. 192. Filaments ſcarcely longer than the breadth of a hair, thick-ſet, in broad uniform patches. When much moiſtened theſe filaments become clotted together in cluſters, and in that moiſt ſtate exhale a kind of ſweet ſcent, agreeing in this reſpect with the Byſſus Iolithus of Linnæus, which is however really a cruſtaceous lichen. Dr. Smith. Found by the Rev. Hugh Davies on the micaceous rocks of Angleſea, and by Mr. Lightfoot on the baſe of Abbot Mackinnon's tomb in Y-comb-hill. 9. B. *fulva*, Hudſon. "Filaments branched, tawny." Dill. tab 1. fig. 17. Filaments longer, more rigid and more looſely diſpoſed than thoſe of B. aurea. It retains its colour when dry. On putrid wood. 10. B. *barbata*, Hudſ. (B. *aurantiaca*, La Marck, *fulva*, With.) "Filaments upright, branched, bundled, with annual interruptions, tawny, with ſmooth, ſwelled, deeper-coloured tips." Dr. Smith. Dill. tab. 1. fig. 19. With. Bot. Ar. tab. 18. fig. 5. Eng. Bot. 701. It forms perennial, thick, tawny-coloured tufts, from one to two inches high. The growth of each year is marked by a ſwelling and a darker colour in each principal filament or ſtem. Young plants conſiſt of a ſimple filament, regularly and beautifully feathered at the ſummit. In fine ſpecimens ſent by the right honourably lady Elizabeth Noel to Dr. Withering and Dr. Smith, the ſwelled tips were remarkably conſpicuous, and as her ladyſhip with great probability ſuppoſed, contained the fructification. Theſe tips are ſmooth, ſemi-tranſparent, and of a rich ſaffron colour. In Dr. Withering's ſpecimens, when examined in the microſcope, they were obſerved to be filled with granules, and to be hiſpid with briſtle-ſhaped tubes, pointing upwards. In Dr. Smith's ſpecimens, which he conjectures were in a leſs advanced ſtate, they had not the ſame appearance. On moiſt rotten wood. 11. B. *candida*, Hudſ. "Filaments much branched; branches faſciculated, white." Dill. in Ray's Syn. tab. 23. as it grew on an old beam in a cellar. Dill. Hiſt. tab. 1. A. on an oak leaf; B. on the half-rotten ſole of an old ſhoe. From a broadiſh, mucilaginous, villous baſe, ſpring various ſlender branches, ſpreading more in breadth than in height, elegantly divided and ſubdivided, and ending ſometimes in numerous capillary fibres, but generally in ſurfaces a little expanded without any determinate number or figure. Subſtance pure white, livid, or yellowiſh, preſſed cloſe to the ſubſtance on which it grows. Dill. 12. B. *cryptarum*, Linn. "Capillary, perennial, aſh-coloured, adhering ſtrong to the rock on which it grows." Dill. 1. 20. Filaments very tender, ſoft, greeniſh aſh-coloured, an inch long, looſely diſpoſed, ſo firmly attached as to be ſcarcely pulled off by the fingers. Linn. Filaments ſimple, dull white, brittle, diverging in a crowded manner from a centre, an inch and half long, and the thickneſs of a human hair. Dill.

Byssus, or *Byſſum*, a fine ſort of thready matter, produced in India, Egypt, and about Elis in Achaia, of which the richeſt apparel was anciently made, eſpecially that worn by the prieſts both Jewiſh and Egyptian.

In reality, the ancients ſeem to have applied the name indifferently to any kind of matter that was ſpun and wove finer than wool; ſo that it is probable there were divers ſorts of byſſus. It is certain, that Ariſtotle gave the name byſſus to the hair or ſilken threads of the pinna marina; whether it were on account of its reſemblance to the byſſus of which cloths were made, or whether it were that this was the true byſſus itſelf. What countenances this latter opinion is, that the byſſus of the pinna marina may be ſpun, and conſequently there is little doubt but that in ages when ſilk was ſcarce, it might be uſed in the cloaths of great men. Add, that this byſſus, though groſsly ſpun, appears much finer and more beautiful than wool, and comes not much ſhort of ſilk. Stockings and other ſuch manufactures are ſtill made of it, which would be more valuable if ſilk were leſs common. To ſpin this byſſus, they leave it ſome days in a cellar to moiſten and grow ſoft: after this they comb it to get out the impurities, and, laſtly, ſpin it as they do ſilk. Geſner, Hiſt. Anim. l. 4. c. 6. Acad. des Sc. Ann. 1712, M. p. 204: Others think that the byſſus ſignifies a kind of very fine flax, which grew in Egypt or Judæa. Bochart. Phaleg, l. iii. c. 4. Others again are of opinion that it is cotton, or a mixture of linen and cotton. The probability of its being cotton is ſtrengthened by the deſcription given of the byſſus by Pollux, which cannot be applied to any thing but cotton. This writer ſays (l. vii. c. 17), that this material came from a kind of nut which grew in Egypt, and alſo in India; that they opened the nut, extracted this ſubſtance, ſpun it, and wove it for garments. Philoſtratus (de Vit. Apollon. l. ii. c. 13.) deſcribes it much in the ſame manner. Theſe characteriſtics agree very well with cotton. Arrian, Tertullian, and Mela, concur in repreſenting the garments worn by the Indians as conſiſting of flax or wool, which was produced by the trees.

It is found in a kind of brown nut, which grows on a ſmall ſhrub. Beſides it ſeems evident from the analogy of languages, that the word uſed by Moſes in deſcribing Joſeph's garment (Gen. xli. 42.) muſt mean cotton. This is the opinion of ſome of the moſt learned interpreters and commentators. We learn farther from profane authors, that robes of cotton were very ancient in Egypt, and that they were worn only by perſons of the greateſt diſtinction. Plin. H. N. l. xix. § 2. It is no leſs certain that robes of linen were alſo uſed in very ancient times; and it appears from the teſtimony of Moſes, that flax was cultivated in Egypt from time immemorial. Exod. xi. 31. Deut. xxii. 11. Hence ſome have ſuppoſed that the ancient byſſus was either a very fine ſort of cotton, or a mixture of linen and cotton. Foſter "de Byſſo Antiquorum." Lond. 1776, 8vo. This ingenious writer, in an elaborate diſſertation on the ſubject, cites a variety of paſſages from ancient authors, from which he concludes that the byſſus was a kind of flax, if it may be ſo called, which was obtained from plants and trees in India, Arabia, and Egypt, denominated by the barbarians "Goſſipion," and correſponding to the modern cotton. He adds, that the ancients were acquainted with two ſpecies of cotton trees, the "bombax" and "goſſypium," both belonging to the Linnæan claſs of *monadelphia polyandria.* The byſſus of which Pliny ſpeaks (l. xix. c. 1.) and which he extols for its ſoftneſs and whiteneſs, was the goſſypium, or white cotton; and that of which Philoſtratus ſpeaks (ubi ſupra), the colour of which was red, φαιὸς τρὶβων, was obtained from "bombax." Oſbeck, in his "Travels" (vol. I. p. 383.) informs us, that the true flax was unknown in India and in Egypt, and yet in both theſe countries the ſame vegetables were cultivated and the ſame arts practiſed. We often read, however, of flax (*linum*) in works pertaining to the Egyptians, as compoſing the veſtures of the prieſts and others, particularly when they celebrated the myſteries of Iſis. What this ſubſtance was is explained by Pliny, when he ſays that garments of cotton were much valued by the Egyptian prieſts, "Veſtes indè (Xylinæ) ſacerdotibus gratiſſimæ." The "veſtes xylinæ" were ſynonimous with the "veſtes byſſinæ." Moreover, Plutarch (in Iſide, and Herodotus, l. ii. c. 86) informs us, that the religion of the Egyptians enjoined their wrapping up dead bodies in ſtuffs woven with byſſus. That this byſſus was our cotton is evident from the authorities to which Mr. R. Foſter refers; and it may be alſo inferred from the fillets which were bound round their mummies. Authors uſually diſtinguiſh two ſorts of byſſus, that of Elis, and that of Judea, which was the fineſt. Of this latter were the prieſtly ornaments made. Bonfrerius notes, that there muſt have been two ſorts of byſſus, one finer than the ordinary, by reaſon there are two Hebrew words uſed in Scripture to denote byſſus, one of which is always uſed in ſpeaking of the habit of the prieſts, and the other of that of the Levites. See Luke xvi. 19.

BYSSUS *montanus*. See AMIANTHUS.

BYSTRICZA, in *Geography*, a town of Poland, in the palatinate of Volhynia; 80 miles N.E. of Lucko.

BYSTROPOGON, in *Botany*, (from βυω, *obturo*, and πωγον, *barba;* the mouth being cloſed by a ſort of beard.) l'Herit. Sert. Angl. t. 22, 23. Juſſ. 449. Vent. 2.334. Willd. 1101. Boſc Nouveau Dict. Claſs and order, *didynamia gymnoſpermia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ.

Gen. Ch. *Cal.* one-leafed, generally with five awns, cloſed by a beard at the opening. *Cor.* one-petalled, ringent; upper lip bifid; lower three-lobed; middle lobe the largeſt. *Stam.* filaments four, diſtant; anthers incumbent. *Piſt.* germ ſuperior, four-parted; ſtyle awl-ſhaped; ſtigma ſimple or bifid. *Peric.* none. *Calyx* cloſed with a beard, and containing the ſeeds. *Seeds* four.

Eſſ. Char. *Cal.* bearded. *Cor.* upper lip bifid; lower three-lobed. *Stamens* diſtant.

Species. 1. B. *pectinatum*, l'Herit. (*nepeta pectinata*, Linn.) "Panicles compact: flowers directed one way; leaves ovate." *Root* perennial. *Stem* five or ſix feet high, four-cornered, even; branches in pairs; each pair at right angles with the next, ſcarcely fragrant. *Leaves* petioled, heart-ſhaped, veined, naked, ſerrated. *Spikes* terminal, interrupted, ſcarcely foliaceous, in peduncled whorls. *Bractes* briſtle-ſhaped, numerous, the length of the flowers. *Calyx* five-parted, briſtle-ſhaped. *Corolla* yellow, ſcarcely the length of the calyx; border five-cleft; four ſegments equal, acute, ſpreading; the fifth, or lip purpliſh, rather round. (Such is the deſcription of the corolla in Willdenow, with which that of profeſſor Martyn in Miller agrees; but if any regard is to be paid to the eſſential generic character, two of the equal ſegments conſtitute the upper lip, and the other two, with the intermediate larger ſegment, belong to the lower lip.) *Style* purpliſh. *Stigma* ſimple. A native of Jamaica and Peru. 2. B. *ſidæfolium*, l'Herit. "Panicles very looſe; peduncles in whorls, filiform; leaves heart-ſhaped." A native of Peru; diſcovered by Dombey. 3. B. *ſuaveolens*, l'Herit. (*Ballota ſuaveolens*, Linn. *Meliſſa Jamaicana*, Pluk. tab. 306. f. 3. *Spicata*, Plum. tab. 163. f. 1. *Mentaſtrum maximum*, Sloane, tab. 102. f. 2. *Meſoſpherum hirſutum*, Browne, tab. 18. f. 3.) "Peduncles axillary, ſolitary; calyxes truncate, awned; leaves heart-ſhaped." *Root* annual. *Stem* upright, ſhrubby at the bottom, branched, hirſute. *Leaves* oppoſite, roundiſh, crenate, nerved, villous; petioles long, ſlender, lax. *Peduncles* axillary, three or five-flowered. *Flowers* approximating, blue; calyx ten-ſtreaked, villous, viſcid; teeth awned, upright, villous; tube of the corolla narrower at the baſe; filaments, from the bottom of the tube, ſtanding up above the opening of the corolla, pubeſcent; anthers blackiſh. *Germ* ovate; ſtyle ſhorter than the ſtamens; ſtigma ſimple, blunt. *Seeds* two, ſeldom four, naked, ovate, black, ſlightly compreſſed. A native of South America and the Weſt Indies. It is called by the Portugueſe *erva cidreira*, from its ſmelling like a citron; in Jamaica, *ſpikenard*, from its pleaſant ſmell. It is one of the moſt grateful cephalics and alexipharmics; and may be uſed in diſorders of the nerves and viſcera, where ſuch warm medicines are required. Martyn from Swartz, Sloane, and Browne. 4. B. *plumoſum*, l'Herit. (*Mentha plumoſa*, Linn. Sup.) "Panicles dichotomous; calyxes feathered; leaves ovate, ſomewhat ſerrated, tomentoſe beneath." *Panicles* terminal and axillary, ſeveral times dichotomous, deriving a round form from their divaricated, little branches, hairy. *Calyxes* flat, ſtellate; rays awl-ſhaped, very hairy, ſpreading. *Corolla* ſmall; receptacle villous. A native of the Canary Iſlands, where it was found by Maſſon. 5. B. *origanifolium*, l'Herit. "Panicles dichotomous; calyxes feathered; leaves ovate, very entire, very white beneath." Found alſo by Maſſon. This, and the preceding, to which it is nearly allied, connect the firſt three ſpecies with the two ſucceeding, l'Herit. 6. B. *Canarienſe*, l'Herit. (*Mentha Canarienſis*, Linn. Sp. Pl. Pluk. t. 307. f. 2. *Heliotropium*, Canar. Comm. Hort. t. 65.) "Peduncles dichotomous; flowers capitate; leaves ovate, crenate, rather villous beneath." *Root* perennial. *Stem* woody, three or four feet high, much branched. *Leaves* on long petioles, hairy, and aſh-coloured on their under ſide. *Peduncles* lateral, pretty long, each ſuſtaining four roundiſh heads, dividing by pairs, and ſpreading from each other. *Flowers* white. A native of the Canary Iſlands and Madeira. It was cultivated in 1714, by the ducheſs of Beaufort, and has been called by the Engliſh gradeners *Madam Maintenon*. 7. B. *punctatum*, l'Herit. "Peduncles dichotomous; flowers capitate; leaves ovate, toothed, ſmooth, finely dotted." Segments of the calyx not awl-ſhaped as in all the other ſpecies. Native of Madeira; introduced into England in 1775, by ſir Joſeph Banks, bart.

BYSTRZICA, in *Geography*, a town of Lithuania, in the palatinate of Wilna; 24 miles N.E. of Wilna.

BYSZOW, a town of the duchy of Courland; 42 miles S. S. W. of Goldingen.

BYTESCH, a town of Moravia, in the circle of Brunn; 17 miles W. N. W. of Brunn.

BYTIN, a town of Lithuania, in the palatinate of Novogrodek; 40 miles S. S. W. of Novogrodek.

BYTTNERA, in *Botany*. See Büttnera.

BYZACIUM. or Bizacium, in *Ancient Geography*, one of the two provinces into which Africa Propria was divided: the other being Zeugitania, or the *Regio* Zeugitana. Shaw, in his geographical deſcription of the kingdom of Tunis, with which Africa Propria nearly correſponds, divides it into the *Summer* and *Winter* circuits; the former being comprehended under the denomination of Zeugitania, and the latter under that of Byzacium. This province, or at leaſt the ſea-coaſt of it, ſeems to have been the "Emporia" of Livy and Polybius, ſo called on account of the number of its ports appropriated to the commerce of grain. It was bounded on the north by the proconſular province; on the eaſt by the Mediterranean ſea and the river Triton; on the ſouth by a part of Libya; and on the weſt by Numidia. Its capital city was *Adrumetum*. It was inhabited, according to Pliny (l. x. c. 4.) and Strabo (l. xvii. p. 1192.) by the Libyphænicians, that is, by a mixture of Aborigines, or native Africans, and Carthaginians. Pliny aſſerts that it was about 250 Roman miles in circumference, and that the ſoil was ſo fertile as to produce an hundred fold. With regard to its extent, Dr. Shaw obſerves (Travels, p. 72), that if we bound Byzacium to the N. and S. with the parallels of Adrumetum and Tacape, and to the W. with Suffetula, one of the weſtern cities of it, we ſhall have a circuit of at leaſt 500 Roman miles. Its limits, however, are not eaſily defined with preciſion, becauſe the ancients have paſſed over the interior part of it bordering upon Libya, in a very ſlight manner, and have very much miſtaken the courſe, magnitude, and ſource of the river Triton. However, Byzacium appears not to have differed much in extent and ſituation from the preſent winter circuit of the Tuniſeens. As to its fertility, Dr. Shaw obſerves, that it falls vaſtly ſhort of the character attributed to it by the ancients. The parts which are adjacent to the ſea-coaſt are generally of a dry ſandy nature with no great depth of ſoil in the beſt of them; and they are planted, for the moſt part, with olive-treees, which flouriſh in great perfection: neither is the inland country in a much better condition.

BYZANT. See Besant.

BYZANTINA *blatta*. See Blatta.

BYZANTINE *Hiſtorians*, in *Literary Hiſtory*, a denomination diſtinguiſhing thoſe Greek writers, who flouriſhed from the time of Conſtantine the Great, in the beginning of the 4th century, who transferred the ſeat of empire from Rome to Conſtantinople (Byzantium) A.D. 328, till the year 1453, when the eaſtern empire terminated on occaſion of the capture of Conſtantinople by Mahomed II. Of the Greek writers, to whom this appellation is peculiarly appropriated, the principal are the following, viz. Zoſimus, Zonaras, Nicetas Choniates, Nicephorus Gregoras, Chalcocondyles, Syncellus, Theophanes, Leo Grammaticus, Cedrenus, Glycas, Conſtantine Manchas, Agathius, Theophylact, Geneſius, Conſtantine Porphyrogenetta, Anna Comnena, Phranza, Cinnamus or Sinnamus, George Acropolita, George Pachymer, Jo. Cantacuzenus, G. Codinus, M. Ducas, and Procopius. The whole ſeries of Byzantine writers compriſed in 36 volumes, fol. has gradually iſſued (A. D. 1648, &c.) from the royal preſs of the Louvre, with ſome collateral aid from Rome and Leipſic; but the laſt edition, or that of Venice in 28 vols. fol. A. D. 1729, &c. though cheaper and more copious, is not leſs inferior in correctneſs than in magnificence to that of Paris. The merits of the French editors are various: but the value of Anna Comnena, Cinnamus, &c. is enhanced by the hiſtorical notes of Charles du Freſne du Cange. Fab. Bib. Græc. l. v. c. 5. tom. vi. p. 229, &c.

Byzantine *MS.*, in *Biblical Hiſtory*, a Greek MS. containing the four Goſpels, collated by Wetſtein and noted 86 in the firſt part of his N. T. Its age is not aſcertained; it was purchaſed by Alexius Comnenus II., in 1183; and preſerved at Preſburg.

BYZANTIUM, in *Ancient Geography*, now known by the name of *Conſtantinople*, and called by the Turks *Stamboul*, or *Iſtambol*, a Turkiſh corruption of εις την πολιν, a city of Thrace, ſituated in a promontory nearly of a triangular form. The obtuſe point of the unequal triangle, which repreſents the figure of Conſtantinople in its preſent extent, advances towards the eaſt, and the ſhores of Aſia, meeting and repelling the waves of the Thracian Boſphorus. The northern ſide of the city is bounded by the harbour; and the ſouthern is waſhed by the Propontis, or ſea of Marmara. The baſis of the triangle is oppoſed to the weſt, and terminates the continent of Europe. On the point of the promontory ſtood the citadel. The walls of the city were built of large ſquare ſtones, ſo jointed as apparently to form only a ſingle block; they were much loftier on the land's ſide than towards the water, being naturally defended by the waves, and in ſome places by the rocks, on which they were built, and which project into the ſea. This city, beſides a gymnaſium, and ſeveral kinds of public edifices, poſſeſſed all the conveniencies which a rich and numerous people were able to procure. They aſſembled in a forum, ſpacious enough to contain a ſmall army ranged in order of battle: and there they confirmed or rejected the decrees of their ſenate. The territory of Byzantium produced abundance of grain and fruits; but it was expoſed to the frequent incurſions of the Thracians, who inhabited the adjoining villages. The harbour ſupplied a vaſt quantity of fiſh in autumn, when they deſcended from the Euxine into the lower ſeas, and alſo in the ſpring, on their return to the Pontus. This fiſhery, and the curing of the fiſh, furniſhed large ſums to the revenues of the city, which was crowded alſo with merchants, and ſupported by an active and flouriſhing commerce. Its port, ſheltered on every ſide from tempeſts, attracted thither the veſſels of all the Grecian nations; and its ſituation at the head of the ſtrait enabled it to ſtop, or ſubject to heavy duties, the foreign merchants who traded in the Euxine, and to furniſh the nations who drew from it their ſubſiſtence. Hence aroſe the conſtant endeavours of the Athenians and Lacedæmonians to engage this city in their intereſts.

Byzantium was founded, according to Euſebius (in Chron.) about the third year of the 30th olympiad, while Tullus Hoſtilius reigned at Rome. But Diodorus Siculus (l. v.) aſſerts, that the foundations of this city were laid in the time of the Argonauts, about 1263 years before Chriſt, by one Byzas, who then reigned in the neighbouring country, and from whoſe name the city was called Byzantium.

This Byzas, if we may credit Euſtathius (in Dionyſ. v. 804.) arrived in Thrace a little before the Argonauts came into thoſe ſeas, and ſettled there with a colony of Megareans. Others ſay, that the navigator Byzas, who was ſtyled the ſon of Neptune, founded the city 656 years before the Chriſtian æra: and that his followers were drawn from Argos and Megara. See Scaliger's Animadv. ad Euſeb. p. 81. Du-Cange Conſtantinopolis, l. i. p. i. cap. 15, 16. Some ancient medals of Byzantium, which have reached our times, bear the name and head of Byzas, with the prow of a ſhip on the reverſe, probably of that ſhip which brought him into Thrace.

Velleius Paterculus (l. ii. c. 15.) aſcribes the glory of founding this great metropolis to the Mileſians; and Ammianus Marcellinus (l. xxii. c. 8.) to the inhabitants of Attica. Juſtin (l. ix. c. i.) ſays, that it was built by Pauſanias king of Lacedæmon; but in this he muſt have been miſtaken, ſince it is certain, that Pauſanias, the commander of the Lacedæmonian fleet, took it (about the year B.C. 476.) from the Perſians, who had made themſelves maſters of it before the king of Lacedæmon had ever been in Aſia. (Thucyd. l. iiii. Herodot. l. iv.) Pauſanias might probably have rebuilt and fortified it, whilſt he continued in poſſeſſion of it, and carried on a ſecret conſpiracy with the Perſians. It underwent many revolutions, having been ſometimes ſubject to the Perſians, ſometimes to the Lacedæmonians, and alſo to the Athenians, who took poſſeſſion of it about the year B.C. 407. About the year 340 B.C. Philip of Macedon laid ſiege to this city; but was compelled to raiſe it, and to retreat, by Phocion, the Athenian general. Its ſituation was juſtly conſidered by the ancients as the moſt pleaſant, and alſo the moſt convenient, for trade, of any in the world; and it is therefore no wonder, that the poſſeſſion of it ſhould be an object of various and ſucceſſive conteſts. After many viciſſitudes, Veſpaſian, A.D. 71, reduced Greece, which Nero had declared free, and likewiſe Lycia, Rhodes, Byzantium, Samos, Thrace, and Cilicia, to Roman provinces, alleging, that they were no longer capable of liberty, ſince they only made uſe of it to undo themſelves by their inteſtine diviſions. In the conteſt between Niger and the emperor Severus, the former placed a numerous garriſon in Byzantium, and the latter, inſtead of purſuing his enemy and beſieging him in this ſtrong city, detached a large body of troops to Cyzicus, near which a battle enſued between them and the numerous army of Æmilianus, which terminated in a defeat of this general, and obliged Niger to quit Byzantium, A.D. 194. Upon this Severus inveſted the place abandoned by his enemy, and commenced a ſiege, which laſted three years. The bloody battle of Iſſus decided this conteſt; and the head of Niger was ſent by Severus to his army, encamped before Byzantium, and exhibited to the beſieged on the point of a ſpear; and from Byzantium it was ſent to Rome, as the token and trophy of Severus's victory. Such were the ſtrength of this city, its advantageous ſituation for defence, and the obſtinacy of the beſieged, that it was not ſubdued without many aſſaults and many ſallies, which render the capture of it one of the moſt extraordinary events in military hiſtory. On the ſide of the ſea it was guarded by a harbour into which the current ſet with ſuch violence, that thoſe who attempted to approach the city in this way were obliged to paſs under its walls. Although the walls were not high, the ſea itſelf, and its rocks, were a ſufficient barrier. On the land ſide, care had been taken to fortify it with high and thick walls, built of hewn ſtones faſtened together with cramps of iron; and the whole circuit was flanked with towers built in ſuch manner and at ſuch diſtances, that they defended one another. Before and during the ſiege, the Byzantines had provided themſelves with various machines of war, ſome of which hurled large beams and ſtones upon the beſiegers on their approach, and others threw at them ſhowers of darts and ſmaller ſtones to a greater diſtance. Strong iron hooks faſtened to chains were ſunk at the foot of the wall, and dragged up whatever they laid hold of. Theſe machines were moſtly conſtructed by one Priſcus, a Bithynian, and a famous engineer; who, after the ſurrender of the place, was ſentenced to death by the generals of Severus, but obtained his pardon of the emperor, in the proſpect of deriving from his talents future ſervices. The entrance of the harbour of Byzantium was barred by a chain, and upon the piers, which advanced on each ſide into the ſea, were built towers for preventing the approach of an enemy. This harbour contained 500 ſmall veſſels, moſt of which were armed with pointed prows of iron; and ſome of them had two rudders, one at each end of the ſhip, and a double complement of men; by which means they could at a moment's warning, and without tacking about, either advance upon the enemy or fall back, as occaſion required. Dion Caſſius informs us, that the Byzantines ſucceſsfully practiſed a ſtratagem for taking ſome of the enemy's ſhips, whilſt they lay at anchor at ſome diſtance from the ſhore. They employed divers, who, ſwimming under water, cut the cable, and drove into the body of the ſhip a ſtrong nail faſtened to a rope, the other end of which was in one of their own veſſels. This laſt, being put in motion, dragged the other after it, and it thus appeared to move without oars or wind. As the beſieged loſt many of their ſhips, they built others of the timber of their houſes, and the women cut off their hair in order to furniſh materials for ropes. When their ſupply of darts and common ſtones failed, they made uſe of the ſtones of the walls of their theatres, which they demoliſhed; nor did they ſpare the ſtatues, even of braſs, which adorned their city. Such was their diſtreſs by famine, that they were reduced to the neceſſity of ſoaking thongs of leather, in order to derive ſome nouriſhment from them, and at length of devouring one another. In this ſituation of extreme indigence and miſery, ſome of the moſt robuſt and vigorous took advantage of a ſtorm to embark on board of their ſhips and to ſeek a ſupply of food for their fellow citizens, or to periſh in the attempt. Having overloaded their ſhips, the Romans attacked them in their return; and either overſet or ſunk them all, ſo that not a ſingle veſſel eſcaped. The Byzantines, thus deprived of their only hope, opened their gates to the beſiegers, and ſurrendered at diſcretion. The conquerors ſhewed them no mercy; but maſſacred all the ſoldiers, magiſtrates, and commanders; and by order of the emperor, who exulted with his ſoldiers on the capture of the city, the eſtates of its inhabitants were confiſcated; the city was deprived of its privileges, and even of its title of city, and was reduced to the condition of a mere village; ſo that it was ſubjected together with its territory to the juriſdiction of the Perinthians, who inſolently abuſed their power. Its fortifications were totally diſmantled; and thus Severus deprived the empire of one of its ſtrongeſt bulwarks, which kept all Thrace in awe, and commanded Aſia and the Euxine ſea. "I ſaw it," ſays Dion Caſſius, "in ſuch a ſtate of ruin and deſolation as would have made any one think it had been conquered, not by Romans, but by barbarians." The emperor, at the requeſt of his infant ſon, Caracalla, mitigated ſome part of its puniſhment, rebuilt a conſiderable part of it, calling it "Antonia" from the ſurname of Antonius, aſſumed by his ſon: but never reſtored it to its ancient privileges, nor reverſed the order by which it was ſubjected to the Perinthians; for we find by eccleſiaſtical hiſtory, that till the time when Conſtantine rebuilt Byzantium, and gave it his name, the biſhop of this city acknowledged the biſhop of Perinthus, or Heraclea, for his metropolitan. In the year 262, the tyrant Gallienus exerciſed cruel vengeance on Byzantium, for reaſons which are not particularly ſpecified; but the Byzantines having ſome ground for miſtruſting him, at firſt ſhut their gates againſt him; but afterwards admitting him upon his promiſe of moderation and clemency, he baſely broke his word, and cauſed both the garriſon and inhabitants to be maſſacred; ſo that at the time when Trebellius Pollio wrote, there was not an ancient family in Byzantium, except ſuch whoſe accidental abſence, occaſioned either by buſineſs or pleaſure, or by their being employed in the armies, had preſerved ſome remains. On occaſion of the war between Licinius and Maximin, Byzantium was beſieged and taken by the latter; but it was ſoon after recovered by Licinius. But in 324 Licinius was defeated by Conſtantine the Great, firſt at Adrianople and then at Chalcedon: and the cities of Byzantium and Chalcedon opened their gates to the conqueror. In the year 330, Conſtantine reſolved to enlarge the ancient city of Byzantium, and to make it the ſecond, if not the firſt, city of the Roman empire. Accordingly he began by extending its walls from ſea to ſea; and while ſome of the workmen were employed in rearing them, others were employed in raiſing a great number of ſtately buildings, and, among the reſt, a palace equal in magnificence and extent to that of Rome. As he deſigned to fix his own court there, and was deſirous that the ſucceeding emperors ſhould follow his example, and honour his new city with their ordinary reſidence, he ſpared neither coſt nor labour to render it both beautiful and convenient. With this view, he built a capitol and amphitheatre, formed a circus maximus, ſeveral forums, porticos, and public baths; and divided the whole city into 14 regions, ſecuring the inhabitants by many wholeſome laws, and granting them great privileges and immunities. By theſe means, Byzantium became, in a ſhort time, one of the moſt flouriſhing and populous cities of the empire; whole families flocking thither from all parts, eſpecially from Pontus, Thrace, and Aſia. Conſtantine publiſhed an edict, importing that ſuch as had lands in thoſe countries ſhould not be able to diſpoſe of them, nor even leave them at their deaths to their heirs, unleſs they had a houſe in his new city. The common people were enticed thither from the moſt diſtant provinces, and even from Rome itſelf, by the emperor's donations, and the great quantity of corn, oil, and wheat, which was daily diſtributed among them. But however deſirous the emperor was to ſee his new city filled with people, yet he did not chooſe it ſhould be inhabited by any but Chriſtians, and therefore he ordered all the idols to be pulled down, and their temples to be conſecrated to the true God. He built, beſides, an incredible number of churches, and cauſed croſſes to be erected in all the ſquare and public places. When moſt of the buildings were finiſhed, the emperor on the 11th of May, in the year 330, the 25th of his reign, cauſed this city, by a very ſolemn dedication, to be conſecrated, according to Cedrenus, to the Virgin Mary; but, according to Euſebius, to the God of Martyrs. It was on this occaſion, that Conſtantine ſtyled the new city after his own name, "Conſtantinople," or the city of Conſtantine, and likewiſe "ſecond," or as others will have it, "New Rome." At the ſame time he put it on an equality with ancient Rome, granting it the ſame rights, immunities, and privileges, that were enjoyed by that metropolis. He eſtabliſhed a ſenate, and other magiſtrates, with a power and authority equal to that of the Roman ſenate, and declared "New Rome" the metropolis of the eaſt, as "Old Rome" was of the weſt. Conſtantine having accompliſhed this great work, according to ſome in five, according to others in two years, fixed his reſidence in the new city, and never more returned to Rome. The removal of the imperial ſeat from Rome to Conſtantinople happened in the year of the Chriſtian era 330, the 25th of Conſtantine's reign, and 1128 after the foundation of Rome. Anc. Un. Hiſt. vols. xiii. xiv. Crevier's Roman Empire, vols. viii. ix. x; Gibbon's Rom. Emp. vol. iii. p. 1, &c. See Constantinople.

BYZIA, Viza, Visé, in *Geography*, a mean town of Turkey in Europe, in Romania, which was anciently the reſidence of the kings of Thrace, and which has ſtill a Greek biſhop. It is ſituated in a ſangiakſhip of the ſame name, which extends eaſtward from the foot of mount Hæmus to the ſea of Marmara. See Bizya.

BYZO. See Bizu.

BYZONE. See Bizone.

BZOVIUS, or Bzowski, Abraham, in *Biography*, an induſtrious and voluminous writer, was born in Poland in 1567, and having ſtudied at Cracow, entered into the order of Dominicans. He afterwards read lectures in philoſophy at Milan, and in divinity at Bologna. On his return to Poland, he taught and preached with great applauſe, and became principal of a college belonging to his order; to the aggrandizement of which he very much contributed, by the erecting of churches and convents, by furniſhing their libraries, and by reforming their conſtitutions. On his ſettlement at Rome, he became librarian to the duke of Braccianno; and having compiled "An Abridgment of Eccleſiaſtical Hiſtory," taken chiefly from the annals of Baronius, he was induced to engage in the continuation of that work, and with this view lodgings were aſſigned to him by the pope in the Vatican. This work commencing in 1198, where Baronius had left off, was continued to his own times, and compriſed in 12 volumes, folio, of which 9 have been printed: viz. 8 at Cologne, from 1616 to 1630, and the 9th at Rome in 1672. With a ſpirit ſimilar to that of his predeceſſor he arrogates plenary power to the papal ſee, and manifeſts the zeal of a credulous and partial advocate rather than the fidelity of an hiſtorian. By his abuſe of the emperor Lewis of Bavaria, he excited the indignation and remonſtrances of the duke of Bavaria, a deſcendant of the ſame houſe, who obliged him to make a public retractation. He alſo offended the Franciſcans, by his reproaches of Scotus, the "ſubtle doctor," and by other acts of hoſtility: and he likewiſe gave great offence to the Jeſuits. His work is, upon the whole, little eſteemed. Bzovius wrote 3 volumes of the lives of the popes, and a great number of other works, which are completely ſunk into oblivion. Having quitted the Vatican, he retired to the Dominican convent of Minerva, and died there in 1637. Gen. Dict.

C.

C, The third letter, or ſecond conſonant of the alphabet, has two ſounds, one like *k*, as in the word call; and the other like *s*, as in *Cæſar*. It has the former ſound before *a*, *o*, *u*, and a conſonant; and the latter before *e*, *i*, and *y*. It might be omitted, ſays Dr. Johnſon, in the language without loſs, ſince one of its ſounds might be ſupplied by *s*, and the other by *k*, but that it preſerves to the eye the etymology of words, as *face* from *facies*, *captive* from *captivus*. C, having no determinate ſound, according to Engliſh orthography, never ends a word. C is formed, according to Scaliger, from the κ of the Greeks, by retrenching the ſtem or upright line; though others derive it from the כ of the Hebrews, which has in effect the ſame form; allowing only for this, that the Hebrews, reading backwards, and the Latins, &c. forwards, each have turned the letter their own way. However, the C not being the ſame as to ſound with the Hebrew *caph;* and it being certain the Romans did not borrow their letters immediately from the Hebrews, or other Orientals, but from the Greeks; the derivation from the Greek κ is the more probable. Add, that F. Montfaucon, in his Palæographia, gives us ſome forms of the Greek κ, which come very near that of our C; this, for inſtance, C: and Suidas calls the C, the Roman kappa. The ſecond ſound of C reſembles that of the Greek Σ; and many inſtances occur of ancient inſcriptions, in which Σ has the ſame form with our C. Gruter, vol. i. p. 71. vol. iii. p. 1020.

All grammarians agree, that the Romans pronounced their Q like our C, and their C like our K. F. Mabillon adds, that Charles the Great was the firſt who wrote his name with a C; whereas all his predeceſſors of the ſame name wrote it with a K: and the ſame difference is obſerved in their coins. In Latin MSS. the C is often ſubſtituted for Q, as *cotidie* for *quotidie*, &c. and the uſe of C for K was very common among the Latins. By the negligence of copyiſts C is often put in the room of P in ancient MSS.; on ſome ancient medals of Sicily, particularly thoſe of Gela, C occupies the place of Γ, as CΕΛΩΙΩΝ for ΓΕΛΟΙΩΝ: and the Romans for a long time retained it in the room of G.

C was alſo a numeral letter among the *Romans*, ſignifying an hundred: according to the verſe,

> "Non plus quam centum C litera fertur habere."

Some add, that a daſh over it, made it ſignify an hundred thouſand. CC denoted 200,000, and CCC 300,000, &c. In the Faſti and Calendars C denoted the day on which it was allowed to aſſemble the Comitia.

C is alſo an abbreviature.

In proper names, C was uſed for Caius; as C. Cæſar, &c. Their lawyers uſed it ſingle for *Codice* or *Conſule*, and double, CC. for *Conſulibus*. On ſome marbles a C reverſed, Ↄ, denoted *Caia*.

C was alſo uſed in their courts, as a letter of condemnation, and ſtood for *condemno;* in oppoſition to A, which ſignified *abſolvo*. On this account the letter C was called "Litera triſtis." Cicero pro Milone, c. 6.

C, in *Muſic*, is the name of the ſecond ſpace in the baſe, the third ſpace in the treble, and of every line on which the tenor or C clef is placed.

In the guido ſcale or gammut, the C in the ſecond ſpace in the baſe is called C fa-ut; its octave above, on the ſixth line, C ſol-fa-ut, as is the C in the third ſpace in the treble, its octave.

C ſometimes, in *Ital. Muſic*, ſtands for *canto*, as C 1, canto primo. It ſtands likewiſe, when placed at the clef, for common time, and, with a line through it, thus 𝄵, for cut time, or a quicker kind of movement.

In muſic of the 15th and 16th centuries, in ſpecifying the time or moods, as they were then called, when triple time, which then was ſtyled *perfect*, and common time *imperfect*, the laws of prolation were very complicated and difficult to comprehend. An ○, or complete circle, implied perfect time, when, without a point, a long 𝆶 was equal to three breves; a breve to three ſemi-breves, &c. and a C, or ſemicircle, implied imperfect or binary time, which Morley calls "prolation of the leſs." See Moods, Prolation, and Time-table.

When at the clef a concealed canon (*canone chiuſo*) had two different marks for time placed over each other, it implied, that one of the parts ſung the notes as they were written, and the other doubled all their lengths, the upper part leads off the canon.

C B, when placed in a ſcore over the *viola*, or tenor part, implies *Col Baſſo*, with the baſe.

The French regard *ut* as the repreſentative of C, the firſt note of their gammut; but Guido, the Italian, and the Engliſh always look upon G on the firſt line in the baſe, as the firſt note in the gammut, or ſcale of muſic. See Hexachord, Propriety, and Solmisation.

In Gregorian notes on a ſtaff of three lines only, C implies the tenor or C clef.

C. *Album*, in *Entomology*. See C. Album.

C. *Aureum*. See C. Aureum.

CAA-APIA, in *Botany*, the Braſilian name for the *Dorſtema Braſilienſis* of La Marck, firſt deſcribed by Marggrave and Piſo, and ſince found by Commerſon, both in Brazil and Magellan.

CAAB, or Cab Ben Zohair, in *Biography*, an eminent Arabian poet, was at firſt a Jewiſh rabbin; and when Mahomet made war on the tribes which had embraced Judaiſm, wrote ſome ſevere ſatirical verſes againſt him. But, on Mahomet's ſubſequent ſucceſs, he was proſelyted, and preſented him with a copy of verſes in his praiſe; upon which he was pardoned and received into favour. The impoſtor conferred on him the honour of his mantle, which was afterwards purchaſed at a great price by the caliph Moavias from his heirs. Caab is ſaid to have had a large ſhare in the compoſition of the Koran. He died in the firſt year of the Hegira, A.D. 622. D'Herbelot.

CAABA, a ſquare ſtone edifice in the temple of Mecca, ſuppoſed to have been built by Abraham and his ſon Iſhmael; being the part principally reverenced by the Mahometans, and to which they always direct themſelves in prayer. See Kebla.

The word is Arabic, *caaba*, and *caabah*, a denomination which ſome will have given to this building, on account of its height, which ſurpaſſes that of the other buildings in Mecca; but others with more probability, derive the name from the quadrangular form of this ſtructure.

This edifice is indiſputably ſo ancient, that its original uſe and the name of its builder are loſt in a cloud of idle traditions. The Mahometans affirm, that it is almoſt coeval with the world, and they pretend, that Adam, after his expulſion from paradiſe, ſupplicated divine permiſſion to erect a building like what he had ſeen there, called "Beit al Mamâr," or the frequented houſe, and "Al Dorâh," towards which he might direct his prayers, and which he might compaſs, as the angels do the celeſtial one. Upon which God let down a repreſentation of that houſe in curtains of light, and ſet it in Mecca, perpendicularly under its original, ordering the patriarch to turn towards it when he prayed, and to compaſs it by way of devotion. After Adam's death, they ſay, his ſon Seth built a houſe in the ſame form, of ſtones and clay, which, being deſtroyed by the deluge, was rebuilt by Abraham and Iſhmael, at the command of God, in the place where the former had ſtood, and after the ſame model; directions for this purpoſe having been given them by revelation. Independently of theſe fabulous traditions, it is not improbable that it was erected by ſome of the patriarchs deſcended from Iſhmael; but whether it was built as a place of divine worſhip, as a fortreſs, as a ſepulchre, or as a monument of the treaty between the old poſſeſſors of Arabia and the ſons of Kedar, it is impoſſible to aſcertain. Reland ſuppoſes that it was the manſion of ſome ancient patriarch, and on that account revered by his poſterity. At length it came to be conſidered as a building appropriated to the ſervice of the Pagan Arab divinities; but that it was not originally a temple ſeems to appear from theſe circumſtances, that the door was not placed in the middle of the ſtructure, and that, for many ages, there was no divine worſhip performed in it, though the Pagan Arabs frequently went in proceſſion round it. It is moſt probable, however, that the Caaba was primarily deſigned for religious purpoſes; and it is certain, that it was held in the higheſt veneration long before the birth of Mahomet. Having undergone ſeveral reparations, it was, a few years after his birth, rebuilt by the tribe of Koreiſh, who had acquired the cuſtody of it either by fraud or force, on the ſame foundation; afterwards repaired by Abdallah Ebn Zobeir, the caliph of Mecca, and again rebuilt by Yuſof, ſurnamed Al Hejâj, in the 74th year of the Hegira, with ſome alterations, in the form in which it now remains.

The length of the Caaba, from north to ſouth, is 24 cubits, its breadth, from eaſt to weſt, 23 cubits, and its height 27 cubits. The door, which is on the eaſt ſide, is raiſed about 4 cubits from the ground, and the floor is level with the bottom of the door. In the corner next this door is the "black ſtone" ſo celebrated amongſt the Mahometans. This ſtone is ſet in ſilver, and fixed in the ſouth-eaſt corner of the building, or that which looks towards Baſra, about 2 cubits and one-third, or ſeven ſpans, from the ground. The Moſlems pretend, that it was one of the precious ſtones of paradiſe, and that it fell down to the earth with Adam, and being taken up again, or otherwiſe preſerved at the deluge, the angel Gabriel afterwards brought it back to Abraham, when he was building the Caaba. It was at firſt whiter than milk, but became black by the ſins of mankind, or rather by the touches and kiſſes of ſo many people; the ſurface only being black, and the interior parts remaining ſtill white. The Hindoos (ſee Aſiatic Reſearches, vol. iv. p. 371.) maintain, that this black ſtone was no other than the "linga," or "phallus" of Maha-deva, an ancient divinity; and that when the Caaba was rebuilt by Mahomet, (as they affirm it to have been,) it was placed in the wall, out of contempt; but the newly converted pilgrims could not give up the worſhip of the black-ſtone; and ſiniſtrous portents forced the miniſters of the new religion to connive at it. Indeed, ſtones were worſhipped not only in Arabia, particularly at Mecca, but were diſtinguiſhed by the appellation of *βαιτυλα*, (ſee Bætylos,) in Syria and Greece. It is alſo affirmed, that the black-ſtone was the object of an idolatrous worſhip from the moſt remote times. However this be, the black-ſtone is held in very high eſtimation by the Mahometans, and is kiſſed by the pilgrims with great devotion, being called by ſome "the right hand of God on earth." When the Karmatians profaned the temple of Mecca, and took away this ſtone, neither love nor money would induce them to reſtore it, though the inhabitants of Mecca offered no leſs than 5000 pieces of gold for it. However, after having kept it 22 years, and finding that they could not prevail with the pilgrims to abandon Mecca, they ſent it back, with ſome contemptuous expreſſions, of their own accord. In the temple of Mecca is alſo the ſtone in Abraham's place, on which they pretend he ſtood when he built the Caaba, and bearing the traces of his footſteps; this is encloſed in an iron cheſt, and the Koran enjoins prayers to be offered before it. On the eaſt ſide of the Caaba is the well Zemzem, which is covered with a ſmall building or cupola, and the water of which bears the reputation of curing many bodily diſeaſes, and even of waſhing away moral pollution and guilt. This water is much reverenced, as it is ſuppoſed to iſſue from the ſpring which ſupplied Iſhmael when his mother Hagar wandered with him in the deſert, and is not only drank by the pilgrims on the ſpot, but conveyed in bottles to moſt parts of the Mahometan dominions. There is alſo a white ſtone, ſaid to be the ſepulchre of Iſhmael, which is very ancient, and which was held in conſiderable repute among the Pagan Arabs. It is ſituated on the north ſide of the Caaba, within a ſemicircular encloſure, 50 cubits long, and receives the rain-water that falls off the Caaba by a ſpout, formerly of wood, but now of gold. The Caaba has a double roof, ſupported within by three octangular pillars of aloes wood, between which are ſuſpended, on a bar of iron, ſome ſilver lamps. The outſide is covered with rich black damaſk, adorned with an embroidered band of gold, which is changed every year, and which is provided by the Turkiſh emperors. At ſome diſtance the Caaba is ſurrounded, but not entirely, by a circular incloſure of pillars joined towards the bottom by a low balluſtrade, and towards the top by bars of ſilver. Without this inner encloſure, on the ſouth, north, and weſt ſide of the Caaba, are three buildings, which are the oratories, or places where three of the orthodox ſects aſſemble to perform their devotion; and towards the ſouth-eaſt ſtand the edifice which covers the well Zemzem, the treaſury, and the cupola of Al Abbas. All theſe buildings are encloſed, at a conſiderable diſtance by a magnificent piazza, or ſquare colonnade, reſembling the Royal Exchange of London, but much larger, covered with ſmall domes and cupolas, from the four corners of which riſe as many minarets or ſteeples, with double galleries, and adorned with gilded ſpires and creſcents, as are the cupolas which cover the piazza and other buildings. Between the pillars of both incloſures hang a great number of lamps, which are conſtantly lighted at night. The firſt foundations of this outward incloſure were laid by Omar, the ſecond caliph, who built no more than a low wall, to prevent the court of the Caaba, before open, from being encroached on by private buildings; but the ſtructure has been ſince raiſed, by the liberality of many ſucceeding princes and great men, to its preſent luſtre. The precincts of Mecca, to the diſtance of 10 miles from the Caaba, are conſidered as ſacred, ſo that in theſe it is not lawful to attack an enemy, or even to hunt or fowl, or cut a branch from a tree; and they have long ago enjoyed the rights of ſanctuary. The ceremonies preſcribed to the pilgrims on their arrival at Mecca, conſiſt chiefly in proceſſions round the Caaba, running between the mounts Safâ and Merwâ, making the ſtation on mount Arafat, ſlaying the victims, and ſhaving their heads in the valley of Minâ.

In compaſſing the Caaba, which they do ſeven times, beginning at the corner where the black-ſtone is fixed, they move with a quick pace the three firſt times of perambulating it, and make a more quick progreſs during the four laſt circuits; in conformity, as they ſay, to the inſtructions of Mahomet, who directed his followers thus to ſhew themſelves ſtrong and active to cut off the hopes of the infidels, who had given out, that the immoderate heats of Medina had rendered them weak. As often as they paſs the black-ſtone, they either kiſs it, or touch it with their hand, and kiſs that. At the cloſe of the ceremonies, the pilgrims ſlay their victims in the valley of Minâ; and theſe muſt be ſheep, goats, kine, or camels; part of theſe are eaten by themſelves and their friends, and the reſt diſtributed to the poor. Having concluded their ſacrifices, they ſhave their heads and cut their nails, burying both in the conſecrated ground, and then viſit the Caaba to take their final leave of the ſacred building.

Theſe ceremonies, as the Mahometans allow, were obſerved by the Pagan Arabs many ages before the appearance of their prophet; and were confirmed by Mahomet, with ſome few alterations. He ordered, that when they compaſſed the Caaba, they ſhould be cloathed, whereas, before his time, they performed this piece of devotion naked. Each tribe either found or introduced into the Caaba their domeſtic worſhip: the temple was adorned, or defiled, with 360 idols of men, eagles, lions, and antelopes; and moſt conſpicuous was the ſtatue of Hebal, of red agate, holding in his hand ſeven arrows, without heads or feathers, the inſtruments and ſymbols of profane divination. But Mahomet deſtroyed theſe idols, ſanctified the Caaba, and made it the chief place of reſort and worſhip for all devout believers. With regard to the proceſſion round the Caaba, Reland (De Rel. Mah. p. 123.) obſerves, that the Romans had a ceremony of this kind in their worſhip: as they were ordered by Numa (ſee Plutarch on Numa) to uſe a circular motion in the adoration of the gods, either to repreſent the orbicular motion of the world, or the perfecting the whole office of prayer to that God who is maker of the univerſe, or elſe in alluſion to the Egyptian wheels, which were hieroglyphics of the inſtability of human fortune. D'Herbelot. Bib. Or. Sale's Prel. Diſc. to the Koran, p. 114. 122.

CAAMINI, in *Botany*, a name given by the Spaniards and others to the fineſt ſort of the Paraguay tea. It is the leaves of a ſhrub which grows on the mountains of Maracaya, and is uſed in Chili and Peru as the tea is with us. The mountains, where the trees which produce this valuable leaf grow naturally, are far from the inhabited parts of Paraguay; but the people of the place know ſo well the value and uſe of it, that they conſtantly furniſh themſelves with great quantities of it from the ſpot. They uſed to go out on theſe expeditions many thouſands together, and their country was left to the inſults of their enemies in the mean time, and many of them periſhed with the fatigue.

To remedy theſe inconveniences, they have of late planted the trees about their habitations; but the leaves of theſe cultivated trees have not the fine flavour or the virtues of the wild ones. The king of Spain has permitted the Indians of Paraguay to bring to the town of Santfoy, twelve thouſand arobes of the leaves of this tree every year: but they are not able to procure ſo much of the wild leaves annually; about half the quantity is the utmoſt they bring of this; the other half is made up of the leaves of the trees in their own plantations, and this ſells at a lower price, and is called *pabos*. The arobe is about five and twenty pounds weight; the general price is four piaſtres for the arobe, and the money is always divided equally among the people of the colony.

CAANA, in *Geography*. See Kenné.

CAANTJE of Verkenſkop, in *Ichthyology*, the Acarauna of Marcgrave, Willughby, Ray, &c. and the Chætodon Nigricans of Gmelin, which ſee.

CAAOPIA, in *Botany*, the Braſilian name of *Hypericum bacciferum*.

CAAPEBA. See Ciſſampelus.

CAB, or Kab, denotes a Hebrew meaſure of capacity, equal to the ſixth part of the ſeah, or an eighteenth of the ephah. Arbuthnot's Tab. Anc. Coins, &c. n. 14. and 15.

The cab of wine contained two Engliſh pints; the cab of corn, $2\frac{1}{6}$ pints corn meaſure.

We alſo find mention of the cab as a dry meaſure, in Grecian and Roman writers: ſome make it equal to the Grecian choenix, and aſſert it to be the quantity of what a labourer eats per day, as aſſigned by Cato.

CABACOS, in *Geography*, a market town of Portugal, in Eſtremadura, 4 leagues from Eſpinal, and 4 from Thomar, ſituate on a plain in a pleaſant country near the river Nabaõ, and almoſt encompaſſed by hills, which conſiſt partly of ſand-ſtone and partly of lime-ſtone. This town formerly belonged to the knights-templars, after the deſtruction of which it was transferred to that of Chriſt. The plain on which it ſtands is almoſt entirely covered with olive-trees, and in its vicinity are cork-trees.

CABAIGUAN, a town of the iſland of Cuba, 35 miles S.E. of Villa del Principe.

CABAL, a name given to a ſort of drink made of dried raiſins. The manner in which the Portugueſe make cabal is this; they take out the ſtones of about twenty pounds of raiſins, and then bruiſing the raiſins a little, they put them into a barrel of white wine, in the month of January or February, and let them ſtand till about Eaſter. It is then very clear and rich, luſcious and palatable to the taſte. It is recommended to ſtop coughs, and give ſtrength to the ſtomach. It is worth while to try the experiment with the ſame proportion of raiſins to the ſame quantity of our Engliſh cyder, which would probably prove a fine drink. Phil. Tranſ. N° 157.

Cabal, in *Engliſh Hiſtory*, an appropriate appellation, diſtinguiſhing the infamous miniſtry of Charles II. and formed of the initial letters of their names, viz. Clifford, Aſhley, Buckingham, Arlington, and Lauderdale. Lord Clifford was an undiſguiſed papiſt; the earl of Arlington, a concealed one; Buckingham was a debauchee, and reputed an atheiſt; Shaftſbury (lord Aſhley) was a man of acknowledged genius, but, according to Burnet, a deiſt; though he poſſeſſed great knowledge of men and things, he frequently changed ſides as his intereſt directed; and Lauderdale was a man of learning, and from having been almoſt a republican, was become a tool of the prerogative, and diſpoſed to concur in the moſt deſperate councils; with ſcarcely any traces of religion remaining, though he called himſelf a preſbyterian, and manifeſted to the laſt an averſion to king Charles I. Theſe were the men to whom Charles entruſted the conduct of his affairs; and who plunged the remaining part of his reign into difficulties, which almoſt proved fatal to his government. By their counſel and concurrence the king and duke of York were encouraged in their deſigns of introducing popery and arbitrary power; in order to which, a ſecret treaty was concluded with France; the triple alliance was broken; and a new war declared with the Dutch for deſtroying their commonwealth; and by this means the king had a plauſible pretence for keeping up a ſtanding army, which might ſerve to ſecure him in the exerciſe of an abſolute authority over his ſubjects, to ſet aſide the uſe of parliaments, and to ſettle the Roman catholic religion in the three kingdoms. At length, however, parliament interpoſed, A.D. 1674. Clifford, indeed, was dead; Shaftſbury had made his peace with the country party, and Buckingham was deſirous of imitating his example; and Lauderdale and Arlington were expoſed to all the effects of national reſentment. Articles of impeachment were drawn up againſt the latter, which, however, were never proſecuted; and the former declined daily in the favour of the king, and became contemptible to the people. Thus ended the power of a junto, that ſeemed to have formed a plan for overturning the conſtitution, and eſtabliſhing upon its ruins unlimited monarchy.

CABALA *vein*, in *Natural Hiſtory*, a name given by our Suſſex miners to one kind of the iron ore commonly wrought in that country. It is a ſtony ore, of a browniſh colour, with a bluſh of red, which is more or leſs conſpicuous in different parts of the ſame maſſes. It is uſually found in thin ſtrata, lying not far from the ſurface, and is not very rich in iron, but it runs very readily in the fire.

CABALACA, or XABALA, in *Ancient Geography*, a town of Albania, according to Pliny and Ptolemy.

CABALARIA, in *Botany*. Flor. Peruv. pl. 30. Claſs and order, *polygamia diœcia*. Gen. Char. *Cal.* ſmall, perſiſting, campanulate, with five deep, oval diviſions. *Cor.* wheel-ſhaped: tube very ſhort; border divided into five oval ſegments. *Stam.* anthers five, inſerted at the baſe of the ſegments of the corolla. *Piſt.* ſtigma nearly ſeſſile, five-ſided; germ ſuperior, nearly round. *Peric.* drupe globular, one-ſeeded, with five oblong points. Male and hermaphrodite flowers on ſeparate plants; the former differ from the latter only in having abortive piſtils.

Eight ſpecies are deſcribed in the Flora Peruvienſis. They are all ſhrubs, and are nearly allied to the genus Sideroxyllum. Juſſieu has ſeparated one of them from the reſt, and formed for it a diſtinct genus which he calls manglilla.

CABALI, in *Ancient Geography*, a people of Africa, in Libya, ſituate in the interior of the country of the *Auſchiſæ*, according to Herodotus; who repreſents them as very numerous, and extending along the coaſts of the ſea towards the territory of Barca, and as adopting cuſtoms and habits ſimilar to thoſe of the inhabitants of the country adjacent to Cyrene.

CABALIA, a country of Aſia Minor, in Lycia, in which were the towns of Oenoanda, Balbura, and Bubon, according to Pliny and Ptolemy.

CABALISTE, in *Commerce*, a term uſed at Thoulouſe, and in the whole province of Languedoc; and ſignifying a merchant who does not trade in his own name, but is concerned in the trade of another merchant in chief. See ANONYMOUS *partnerſhip*.

CABALLARIA, in *Middle Age Writers*, lands held by the tenure of furniſhing a horſeman, with ſuitable equipage in time of war, or when the lord had occaſion for him.

CABALLEROS, or CAVALLEROS, in *Commerce*, are Spaniſh wools, of which there is a conſiderable trade at Bayonne in France.

CABALLI, among *Myſtic Philoſophers*, denote the ſhades or aſtral bodies of men who died any ſudden or violent death, before the expiration of their predeſtinated term of life. The *caballi*, called alſo *cabales* or *cobales*, are ſuppoſed to wander as goblins or ghoſts over the face of the earth, till their deſtined term is accompliſhed; being doomed to live out the time as ſpirits, which they ought to have ſpent in the fleſh.

CABALLINE, CABALLINUS, from the Greek καϐαλλος, *a horſe*, ſomething relating to, or partaking of, the nature and qualities of a horſe.

CABALLINE *Aloes*. See ALOES.

CABALLINUM, *Cabillonum* (Cæſar), *Cabyllinum* (Strabo), *Cabilio* (Peutinger), *Cabellio* (Anton. Itin.), *Caballodunum* (Not. Imper.), and *Cabillo* (Ammian. Marcell.), in *Ancient Geography*, *Chalons-ſur-Saone*, a town which belonged to the Ædui, where Cæſar eſtabliſhed magazines, and between which and Auguſtodunum he formed a communication by a road. The emperor Conſtantine aſſembled his army in this place.

CABALLINUS *Fons*, a fountain of Greece, in Bœotia, near mount Helicon. It is the *Hippocrene* of the poets.

CABALLUS, FRANCIS, in *Biography*, born at Breſcia in Italy towards the end of the 15th century, was ſeveral years a diſtinguiſhed teacher of medicine in the univerſity of Padua, where he died, at an advanced age, in the year 1540. The work by which he diſtinguiſhed himſelf is entitled "Libellus de Animali Theriacam Ingrediente." It was firſt publiſhed with the Opera Medica of Montagnana, fol. 1497, Venice, and has been frequently reprinted, and ſhews the author to advantage, as intimately acquainted with the ancient writers. Haller. Bib. Med. Eloy. Dict. Hiſt.

CABALLUS *Equus*, in *Zoology*, the common horſe, with ſolid hoofs, a long flowing mane, and tail univerſally covered with long hairs. See HORSE.

CABALSUM, in *Ancient Geography*, a town of Egypt. Antonin. Itin.

CABANA, a place of Gedroſia, mentioned in the Periplus of Nearchus, and ſuppoſed to be the *Canana* of Ptolemy.

CABANDENI, a country of Aſia, in Suſiana.

CABANE, in *Geography*, a town of South America, in the country of Braſil, and government of St. Paul.

CABANES, LES, a town of France, in the department of the Tarn; 4 leagues N.W. of Alby.—Alſo, a town of France, in the department of the Arriege, and chief place of a canton in the diſtrict of Foix, 2 leagues S.E. of Taraſcon. The town contains 430, and the canton 5,586, inhabitants; the territory includes 340 kiliometres and 25 communes.

CABANODURUM, in *Ancient Geography*, a town of Norica, on the Danube. Ptolemy.

CABARET, or *Petite linotte*, of Buffon, in *Ornithology*, the mountain linnet of the Britiſh Zoology, and the FRINGILLA MONTIUM of Gmelin, &c.

CABARITA, in *Geography*, a ſmall iſland near the north coaſt of Jamaica. N. lat. 18° 24′. W. long. 76° 40′.

CABARITTA, a river on the ſouth ſide of the iſland of Jamaica, which runs into the ſea about 1½ mile W. from Savanna la Mer.

CABAROS, or TITIAN, the moſt weſtern of the iſlands of Hieres, E. of Toulon, on the coaſt of France, in the Mediterranean.

CABARRAS, a new county of America, in the diſtrict of Saliſbury, North Carolina; containing 506 inhabitants, of whom 659 are ſlaves: the court-houſe being 439 miles from Waſhington.

CABASA, in *Ancient Geography*, an epiſcopal town of Egypt, in the Delta, and the capital of the nome called *Cabaſites*.

CABASILAS, NILUS, in *Biography*, a Greek, archbiſhop of Theſſalonica, flouriſhed in the 14th century, and wrote two treatiſes againſt the Latins. The deſign of the firſt treatiſe is to ſhew, that the diviſion between the Greek and Latin churches is owing to the popes' having refuſed to ſubmit the deciſion of controverted queſtions to an oecumenical council, and arrogating the deciſion to themſelves; and the ſecond relates to the ſupremacy of the pope, and attempts to prove that though he holds his epiſcopacy of Rome from St. Peter, he is indebted for his primacy to laws, councils, and princes; it alſo denies the pope's infallibility, and his juriſdiction over other patriarchs. Theſe treatiſes which are clear, methodical, and learned, were firſt printed in Greek at London, without date; in Greek and Latin at Baſil in 1544; at Frankfort in 1555; at Hainault, with the notes of Salmaſius, in 1608; and at Amſterdam in 1645. This prelate was alſo the author of a large work on the proceſſion of the Holy Spirit. Du-Pin. Moſheim.

CABASILAS, NICHOLAS, nephew of the former, and his ſucceſſor as archbiſhop of Theſſalonica, was employed in negociations by the emperor Cantacuzenus. In oppoſition to the Latins, he compoſed an accuſation againſt them, and a work "On the Proceſſion of the Holy Spirit." He alſo wrote "An Expoſition of the Liturgy," in which he delivers the doctrine of the Greek church concerning the maſs; and which was printed in Latin at Venice in 1545, and at Antwerp in 1560; and in Greek and Latin in the "Bibliotheca Patrum," Paris, 1624. In the ſame "Bibliotheca," is alſo included his "Life of Jeſus Chriſt," tranſlated into Latin, and ſeparately printed at Ingolſtadt, in 1604 A tranſlation of his work "Againſt Uſury" is alſo contained in the "Bibliotheca." In the ſciences of mathematics and aſtronomy, he is ſaid to have ſurpaſſed all his contemporaries. With reſpect to his character as a writer he reſembled his uncle. Du-Pin. Moſheim.

CABASSOLE, PHILIP DU, a friend and frequent correſpondent of Petrarch, was born at Cavaillon in Provence, and became biſhop of that city in 1344. As chancellor to Sanche, queen of Sicily, he, conjointly with her, governed that kingdom during the minority of her grand-daughter Joan. In 1366, he was nominated patriarch of Jeruſalem, and was appointed by Urban V., cardinal and vicar-general of the dioceſe of Avignon. During the reſidence of the popes in this city, he was entruſted by Gregory XI. with the ſuperintendence of the eſtates of the church in Italy. He was alſo biſhop of Sabina. He died in 1372. A work "De Nugis Curialium," and two books "Of the Life and Miracles of St. Mary Magdalen," are aſcribed to Cabaſſole. Du-Pin.

CABASSUS, or CABESSUS, (Homer Iliad. l. xiii. v. 363.) in *Ancient Geography*, a town of Aſia, in Armenia Minor. Steph. Byz. and Strabo place it in Cappadocia. Hellanicus refers it to Lycia.

CABASSUT, JOHN, in *Biography*, a prieſt of the oratory, was born at Aix in 1604, and became director to cardinal Grimaldi, whom he accompanied to Rome, and by whom he was perſuaded to publiſh ſeveral works. He was an indefatigable ſtudent, and condeſcending in his advice to all who applied to him with caſes of conſcience. He was profeſſor of canon law at Avignon, and died at Aix in 1685. His works are, "Juris Canonici Theoria et Praxis," Lyons, 1660, often reprinted, and improved by the notes of Gibert; in a folio edition, printed at Poictiers in 1738; "Notitia eccleſiaſtica Conſiliorum Canonum, veterumque Eccleſiæ Rituum," 1670, fol.: "A Treatiſe on Uſury;" and deciſions on various queſtions under the title of "Horæ ſubceſivæ." Moreri.

CABATANUS, in *Ancient Geography*, a town of Arabia Felix, in the territory of the Chatramotitæ. Strabo.

CABAY, a name given by the Indians and inhabitants of Ceylon and Arracan to garments made of ſilk or cotton ornamented with gold, worn by the principal perſons of the country.

CABBAGE, in *Botany*. See BRASSICA *rapa*.

CABBAGE, in *Agriculture*, the name of a well known eſculent plant, of which there are ſeveral varieties cultivated by the farmer, as winter and ſpring food for different ſorts of live ſtock. It is a ſort of culture that is of much conſequence on all the ſtiff heavy ſoils which are too moiſt and ſtrong for the ſucceſsful practice of turnip huſbandry. And another circumſtance that adds to its importance is the little danger that attends the crop, and the largeneſs of the quantity of food that is produced: as it has been found to be conſiderably more in proportion to the ſpace of ground that is occupied, than that of turnips. Mr. Young has obſerved that cabbages "flouriſh to very great profit on all good ſoils, and have the particular property of enabling the farmers of clays and wet loams, to winter more cattle than thoſe of lighter lands can effect, by means of that excellent root, the turnip. The great evil of clay farms uſed to be," ſays he, "the want of green winter food, which confined their ſtocks to hay alone, and, conſequently, prevented their reaping thoſe extended articles of profit, that ariſe from numerous heads of cattle; and, beſides the immediate benefit from the cattle, they loſt alſo the opportunity of raiſing large quantities of dung, which never can be effected ſo well as by keeping cattle. But all theſe evils are by the cabbage culture remedied, and the clay farmers put in poſſeſſion, in many reſpects, of an equality with the turnip ones. If the difference between a ſummer fallow-year on clay and a turnip fallow on light land be conſidered, the importance of this diſcovery will, he contends, be ſufficiently clear. Thirty ſhillings for an acre expence of the firſt, are not an exaggerated calculation; but all is ſaved on the turnip land, perhaps with profit: and the barley that follows the turnips is probably nearly as good as that which ſucceeds the ſummer-fallow clay. Suppoſing the following clover and wheat equal to both, according to ſoil, ſtill there remains a ſuperiority in the article manure; for all that is raiſed by the conſumption of the turnip crop is ſo much ſuperior to the clay ſoil. But reverſe the medal: ſuppoſe cabbages to be introduced on the clay, and the ſcene is changed. That crop will exceed the turnips, yield more profit, and enable the farmer to make more manure. For theſe reaſons, the recommendation of cabbages appears to be extremely well founded, and, conſequently, thoſe farmers who poſſeſs the proper ſoils, cannot determine too ſoon to enter on the cultivation of them. But there is another circumſtance attending ſome ſorts of cabbages, which make them highly eligible on all farms, which is, their laſting for ſheep feed longer in the ſpring. Ruta baga, turnip cabbage, cabbage turnip, and green borecole, are in perfection in April, and laſt even to May, the moſt pinching period of the year. Turnips will do no ſuch thing; conſequently, thoſe farmers who poſſeſs turnip ſoils, ſhould on no account ſlight the culture of cabbages for this purpoſe.”

In regard to the preparation of the land, the author of “Practical Agriculture” adviſes, that “as the roots of the plants run deep, and ſtand in need of a large proportion of nouriſhment, a conſiderable degree of pulveriſation ſhould be effected, and the ſoil be well looſened to a conſiderable depth. Theſe effects, he conceives, may be produced in the moſt perfect manner, by repeated deep ploughings, and expoſing as large a ſurface as poſſible to the action of the froſts during the winter ſeaſon, by laying the land up into pretty high ridges. Three ploughings are moſtly found ſufficient for this purpoſe; but the number ſhould always vary according to the nature and ſtate of the land. When this ſort of crop ſucceeds wheat, barley, oats, or beans, the land is generally ploughed up in the autumn by a pretty deep furrow, and formed into ridges of about three feet in width; in this ſtate, it may continue till the ſpring, when it ſhould be well broken down by harrowing in different directions. It is then to be ploughed again, but with ſomewhat leſs depth than before. After this, as near as poſſible to the time of planting, the ground may again be well harrowed over, and a ſuitable proportion of good ſtable manure applied, as from fifteen to twenty-three horſe cart loads to the acre; or where compoſts are made uſe of, from twenty to thirty, and immediately turned into, or incloſed in the middle of the ridges. After this is accompliſhed, the land becomes ready for the reception of the plants. In ſome diſtricts, however, a practice prevails, of ſpreading the manure upon the land, and turning it in with the firſt ploughing. In this way the ground is ſuppoſed to be prevented from becoming too open by the action of the manure, and the danger of the plants being injured in droughty ſeaſons prevented. It is obvious, however, he thinks, that in this mode, much of the benefit to be derived from the manure muſt be loſt by its remaining ſo long incorporated with the ſoil before the plants are put in, and that the great advantage of having it in its moſt active and concentrated ſtate, immediately below the roots of the plants, muſt be wanting.” It is ſtated in the “View of the State of Agriculture in Mid Lothian,” that “in the vicinity of Edinburgh, in preparing for this crop, the ground is ploughed in November, and again in April following, and well reduced by harrowing, &c. It is then laid out in three feet drills, thirty carts of dung per acre being laid in the drills, which are then ſplit with the plough covering the dung, and then rolled lengthways, after which, the plants are put in.” And the author of the “Agricultural Survey” of the county of Kent conceives that “the tillage neceſſary for cabbage is to plough the land in the winter ſix or ſeven inches deep, and to croſs-plough it in the ſpring in a dry ſeaſon, and then after manuring with a good covering of rotten dung, before planting in June, to plough it again, turning over a furrow ten inches wide for planting upon.” But in Suffolk, according to the account of the ſecretary to the board of agriculture, “the land is prepared by four ploughings; the laſt of which buries an ample quantity of dung, and forms the land a ſecond time on three feet ridges to be planted upon.”

Dr. Dickſon, in his “Syſtem of Practical Agriculture,” obſerves, that “in the field culture of cabbages, ſeveral different ſorts are capable of being employed, but that thoſe varieties that are moſt uſeful as cattle food, and the moſt capable of withſtanding the ſeverity of the winters in this northern climate, are the Scotch, the drumhead, the American, and the open green cabbage, or ſpring kale. The firſt, when of the true firm flat topped kind, has been found to be wholly incapable of being injured by froſts, except in ſome caſes a few of the outſide leaves. The ſecond ſort, or true drum-head, is likewiſe extremely hardy, and more cloſe in its texture than many other varieties, being of courſe very heavy in proportion to its ſize. It admits of being planted cloſer than the large American cabbage, which in particular ſituations is an advantage. This ſort is known in ſome diſtricts by the name of the fallow loaf cabbage, but it would ſeem to differ from it in ſome reſpects. As this kind is not found ſufficiently hardy to bear the effects of very ſevere froſts, a mixed ſtock is frequently employed, which is produced by planting it and the common red cabbage together, and after the ſeed pods are formed, cutting the latter, and leaving the former for ſeed. This mixed kind, which is of a deep green colour veined with purple, beſides retaining the ſize of the drum-head, poſſeſſes the hardneſs of the red cabbage. The third, or American kind, has not only a large ſize, but continues good to a late period in the ſpring. The laſt or kale ſort is perfectly hardy, and capable of being converted to uſe as a cattle and ſheep food at the latter end of April, or beginning of May, when other ſorts of green food are extremely ſcarce, and difficult to be procured. But, beſides theſe, the varieties known by the titles of the flat, Dutch, the Yorkſhire, the Savoy, and ſeveral others, may, he ſays, be made uſe of where the climate is more mild.”

The ſame writer alſo adds, that “the chief advantage of planting large ſized cabbages in the field is that of their being capable of being ſet out at ſuch diſtances as to readily admit of their being cleaned and kept in order by the plough, without any loſs being ſuſtained in the quantity of the produce. Where the ſoil is not of great ſtaple, and the expence of hand labour reaſonable, the ſmaller ſorts may, he thinks, be made uſe of with advantage.”

Mr. Young, however, fears that “the great American cabbage, which, thirty years ago was to be had, and which came to 50 or 60, and even 80lb. weight is loſt at preſent. And the great cattle cabbage, the great Scotch, the drum-head, the Dutch, and other ſorts are not diſtinct varieties. A farmer ſhould, he thinks, at firſt get the beſt ſtock he can, and then truſt only to the ſeed he raiſes himſelf. At preſent he is inclined to believe, that the beſt ſort to be procured is the large red cabbage. It comes to a good ſize, and is hardier than moſt others.”

In procuring ſeed for raiſing young cabbage plants, great care ſhould be taken, that it be obtained from the moſt perfect plants of the different kinds, and ſuch as have ſeeded without any other variety of the ſame tribe blowing near them, as it is, perhaps, only in this method that they are capable of being kept of a true kind. It may, therefore, in this view, be of great advantage to have the plants, intended to ſtand for ſeed, planted out by themſelves in a piece of ground at a diſtance from the others, and well protected from birds. When ſeed of this ſort is purchaſed, ſuch as is new ſhould always be preferred, as it not only vegetates much quicker, but is more to be depended upon for a proper ſupply of plants. In dry ſeaſons, ſteeping the ſeed in water, or ſome other liquid, may alſo be of utility. The beds on which the ſeed is ſown ſhould be of a good rich quality, well prepared by digging, and the application of manure; as where the ſoil is poor and not ſufficiently enriched, the plants are apt to be weak and ſtunted in their growth, as well as much injured by weeds. Much injury alſo frequently ariſes to young cabbage plants from the ſeed being ſown too thick; care ſhould therefore be taken to have them properly thinned out whenever they come up in too thick a manner. One ounce or an ounce and a half of good ſeed may in general be ſufficient for ſowing a bed fourteen or fifteen feet long, and five or ſix in width, or for raiſing two or three thouſand good plants; in which proportion, half a pound will afford more plants than are ſufficient for planting an acre of ground. Mr. Young adviſes three ounces of ſeed to each ſquare perch well raked in, and then a peck of ſoot ſown over each foot of ground; and that when it is intended to cultivate theſe crops on a large ſcale, an acre of land ſhould be incloſed for the purpoſe, kept well manured, and the ſeed drilled in at nine inches, for the convenience of weeding and hoeing.

In reſpect to the periods of putting the ſeed into the ground, they muſt depend much upon the intentions of the cultivator: where the produce is to be conſumed during the winter months, as in December, January, or February, the ſeed ſhould be ſown in July the preceding year, and the plants be put out in March, April, and May, the following year; but if intended for conſumption in March, April, or May, the ſeed ſhould be put in about the latter end of February or beginning of March, in the former year, and the plants be ſet out in the firſt or ſecond week in July in the ſame year. By continuing to ſow with regularity in the months of February, May, and July, or Auguſt, ſucceſſive crops of young healthy plants may be ſecured, and the round of cabbage huſbandry be effectually preſerved. Theſe periods of ſowing and planting out ſhould, however, be attended to with conſiderable exactneſs, in order to ſecure good and certain crops, and the ſeed-beds be well protected from birds. But that the cultivator may not be diſappointed in the number of plants, it may be uſeful to ſow a little ſeed at different times, at the diſtance of a few days from theſe periods, always chuſing as moiſt a time as poſſible for the purpoſe. And by haſtening or protracting the time of tranſplanting, or ſetting out the crops, the growth of the plants may be ſo managed as to have them ready for uſe either more early or later, according as circumſtances may require. The author of Practical Agriculture obſerves, that, "in both the ſpring and autumn plantings it is, however, the beſt practice to be ſufficiently early, as in the former caſe the plants will have the great advantage of the ſpring ſhowers, and be in leſs danger from the heat of the ſummer ſeaſon; and in the latter, more fully eſtabliſhed in the ſoil before the winter ſets in, as the growth of the plant after September cannot in any degree be depended upon in field culture. Beſides, from the length of time which is requiſite for their attaining their full ſize, it muſt always be advantageous to have them ſet out early. They ſeldom arrive at their full growth in leſs than four months, where they grow in the moſt perfect manner. By ſowing very early in the ſpring, and ſetting the plants out as expeditiouſly as poſſible, both full and forward crops may often be obtained. There is, however, in general, an advantage in the autumn plants, that though they be more liable to be injured in the winter by ſlugs, and other cauſes, they are in a ſtate to be planted out very early in the ſpring, while thoſe of the ſpring ſowings can ſeldom be ſet out till the ſummer is much advanced." In this culture different methods have been attempted, ſuch as ſetting the plants to ſtand the winter in the field, and letting them remain in the ſeed-bed to be put out in the ſpring; the former is moſt adviſable in mild winters and ſheltered ſituations, as the crops will be much more forward; but in expoſed ſituations the latter may be adopted with more ſucceſs. By ſowing in May and June, forward crops of large cabbages may be procured the enſuing year, and coleworts for the following ſpring; but in this laſt intention they ſhould be planted cloſer together than uſual. In this way the loſs of weight, and danger of cabbage crops in the winter months, are fully obviated. On the whole, the ſooner the autumnal plants are put out in the field after the froſts are over, the better; and the ſpring plants ſhould be placed out as ſoon as poſſible after them, as before the end of April. It is the cuſtom of ſome nice cultivators to prick the plants out from the ſeed beds, while very young, into other beds; and the practice is certainly very advantageous, not only in checking their too forward growth, but in rendering them more fit for planting out and leſs liable to run to ſeed when tranſplanted into the field. The expence and trouble of this operation are, however, too great, where the cabbage culture is conducted on an extenſive ſcale, to admit of its being generally performed.

Another practice, adopted by the late Mr. Bakewell, and ſince employed by other cultivators, by which the inconvenience of waiting for a ſuitable moiſt time for ſetting out the plants, and the danger of their not ſucceeding under other circumſtances, are avoided, is that of drilling the ſeed in where the plants are to remain at the proper ſeaſons, as April, May, or June, and the following month. But the firſt is the moſt general in this mode of culture. The crops, in this ſyſtem of management, ſhould be put in after turnips, potatoes, beans, peas, tares, or others of the hoeing or cleanſing kinds: the land being ploughed in ridges three or four feet in width in the latter caſes, before the winter froſts, and before the time of drilling the ſeed, manure to the extent of from twenty to thirty cubical yards to the acre, according to circumſtances, introduced by reverſing the former ridges. After having remained in this ſtate, ſecure from rain, a week or fortnight, when the ſoils are ſtiff, harrowing ſhould be performed, but under other circumſtances the roller to which the drill is fixed will level them ſufficiently, as they ſhould not be reduced too greatly. In performing the buſineſs, the Northumberland drill is to be attached to a roller eight feet in length for four feet ridges, and ſix feet, where they are three, by means of a chain, hooks, and ſtaples. The roller thus covers the ridge that is drilling and that which is to be drilled by the next turn. Proceeding conſtantly in this way, the ſeed will be effectually covered by four pieces of Jack chain about two feet in length, which are fixed to the centre of the drill behind, and drawn after it, and depoſited to the proper depth of about half an inch by weighing on or loading the drill. When the plants appear, if a ſurge of ſoot be drilled over them to the extent of ten or twelve buſhels the acre, Mr. Young thinks it will be of great advantage in protecting them from the attacks of the fly. This, he ſuppoſes, may be very conveniently done by one hopper and a round of cups ſimilar to thoſe of Cook's drill, but larger, fixed to ſuch a frame as that of the Northumberland drill.

There can be little doubt but that this method will be highly advantageous, as ſaving much labour and preventing the plants from being checked in their growth by tranſplanting, when the ſoils are ſufficiently fine and mellow: but under other circumſtances it cannot probably be wholly depended upon.

In planting out crops of this ſort, care ſhould be taken to have the buſineſs performed as ſoon as poſſible after the land has been well ſaturated with rain; as in this caſe the plants much ſooner eſtabliſh themſelves in the ſoil, and fewer vacancies are left, by their decay, to be afterwards filled. The plants are likewiſe much more readily raiſed from the ſeed-bed, and with much leſs injury to the roots, which is a matter of importance. The work is performed upon the land in a flat ſtate, and alſo when raiſed into ridges by means of the plough; but the latter method is the more general, and ought probably to be preferred wherever the ſoil is much inclined to the retention of moiſture. On the lighter and more dry ſoils the flat ſurface may, however, be more proper and uſeful, as preſerving a due degree of moiſture more effectually, eſpecially in dry ſeaſons.

In regard to the diſtance of planting, it muſt depend in a great meaſure upon the ſtrength and goodneſs of the ſoil, and the natural ſize of the variety of cabbage that is employed; but in general it ſhould be ſuch as that the ground between them may be cultivated and kept clean by the plough, and yet admit of bearing a full crop. It is evident that where the plants ſtand thin they will attain a larger ſize, while in cloſe planting there will be a greater number of plants upon the land, which may compenſate for the diſadvantage in the want of ſize. It ſeems probable that both cabbages and turnips may be ſet out too thin, as the increaſe of ſize is not always equal to that of number. It is the practice in ſome diſtricts, where this culture is well performed, to ſet them out regularly at the diſtance of three feet each way, as in this method the plough in cleaning and earthing up the crops, can be conducted both in longitudinal and croſs direction, and of courſe the ſoil between the plants be not only ſtirred in the moſt effectual manner, but the earth moſt completely laid up to the roots of the plants, and their growth more fully promoted. Where the larger varieties of cabbage are employed, and the land is ſufficiently ſtrong, this may of courſe in general be the moſt advantageous diſtance; but where the ſmaller varieties are made uſe of, and the ground is of a leſs ſtrong and rich quality, two feet and a half may be a more proper diſtance. Other cultivators follow a different practice, ſome preferring four feet by two feet and a half, while others adviſe only two feet by twenty inches, or even 18 inches. In theſe latter diſtances the cabbages are, however, under the neceſſity of being hand-hoed between the plants in the rows, the intervals only being cleaned by the plough. The culture cannot of courſe be by any means ſo perfectly performed; the ſoil in the former method being wholly removed, except the ſmall portions immediately about the roots of the plants, while in theſe much of it will remain untouched, and be not only left in a more foul condition for ſucceeding crops, but leſs beneficial in promoting the growth of the cabbages. The experiments and obſervations of Mr. Baker, in the cultivation of cabbages in the field, led him to recommend the following as the moſt ſuitable diſtances for the different varieties which he employed.

Varieties.	*Seaſons.*	*Diſtances.*
Long-ſided cabbage,	Winterplants,	2ft. by 4, or 18 in. by 4ft.
Flat Dutch cabbage,	ditto	ditto ditto.
Scotch cabbage,	ditto	ditto ditto.
Flat Dutch cabbage,	Spring plants,	18 inches by 4 feet.
Scotch cabbage,	ditto	ditto ditto.
Turnip cabbage,	ditto	1 foot by ditto.

The nature of the ſoils on which they are cultivated is not, however, deſcribed.

For all the larger ſorts of cabbages on the different ſorts of ſtrong rich ſoils, the moſt advantageous diſtances may be three feet each way, and on the more light ſoils two feet and a half. But for the ſmaller ſorts, two feet each way on the ſtrong ſoils, and eighteen or twenty inches on ſuch as are light. Whatever diſtances may be thought the moſt advantageous, it is obſerved by a late writer, that it will conſtantly be neceſſary to attend to the manner of ſetting them out, the ſize of the plants, and the mode of taking them up from the ſeed-beds, as much depends upon theſe operations being properly performed. In ſetting the plants out in the ridge method, it is neceſſary to have them placed in lines as regularly as poſſible, according to the diſtances employed, along the middle or crown of the ridges, immediately upon the part in which the manure has been incloſed; as by having this accompliſhed in an accurate manner, they not only admit of being cultivated betwixt with more eaſe and convenience, but derive the utmoſt poſſible advantage from the manure, and at the ſame time, from its being more concentrated, require a ſmaller proportion to be employed. The ſize of the plants is likewiſe a circumſtance of conſequence, as the large ſtout plants not only take root with more certainty, but are leſs expoſed to danger from ſlugs and other cauſes. In removing the plants from the ſeed or other bed, for the purpoſe of being planted out, it is alſo of much utility to have their roots as little broken or otherwiſe injured as poſſible. Moiſt or rainy weather is the moſt ſuitable for this operation; but in dry ſeaſons it may be eaſily accompliſhed after the plants in the beds have been well watered. The number of plants that are employed muſt obviouſly be different, according to the diſtances at which they are planted; but from five to ſeven thouſand are generally ſufficient for an acre of land. In ſetting the young plants out into the ground, it is neceſſary to ſee that the labourers fix them well in the ſoil, by applying the mould ſo firmly round their roots by means of the dibble, that they cannot eaſily be drawn out by taking hold of their uppermoſt leaves. The plants are moſtly dropped at proper diſtances by women and children, and the dibblers follow, having a ſtick for marking the diſtances with in an exact manner. In this way an ordinary labourer will plant a quarter of an acre or more in a day, and an expert gardener nearly as much more. In the courſe of a fortnight or three weeks after the firſt ſetting out of the plants, it will be requiſite to fill up all the vacancies that have been produced by the failure of particular plants: in performing which a moiſt time, if it be poſſible, ſhould be fixed upon."

In reſpect to the expence of planting out and the other neceſſary operations in crops of this ſort, it muſt be liable to vary greatly, according to the circumſtances of the ſoil, and the ſituation in reſpect to labourers. In Suffolk, according to the writer of the corrected report of the agriculture of that diſtrict, it is in general about three ſhillings the acre, but in other places frequently a little higher, the whole charge of an acre being eſtimated in this way:

Expence of cabbage culture on one acre.

	£.	*s.*	*d.*
Charges ſor rent - -	0	10	0
Tythes - - -	0	1	6
Poor rates - - -	0	1	3
For ploughing land five times -	1	0	0
Harrowing twice - -	0	0	6
Manuring - -	2	0	0
Seed-bed and ſeed, &c. - -	0	1	6
Planting out - - -	0	3	0
Filling up deficiencies - -	0	0	6
Hand-hoeings - - -	0	4	0
Horſe-work in hoeing -	0	4	0
Cutting and cartage, one fourth of a mile,	0	15	0
	£.5	1	3

In this eſtimate, the whole of the expence of manure is, however, it is obſerved, charged to the cabbage crop: but the advantage ought properly to be divided, which would leſſen the expence conſiderably. From the increaſe in the prices of land and labour, which has lately taken place, the expences of this ſort of cultivation will at preſent ſtand conſiderably higher.

In the after culture of this ſort of crop, much advantage is derived from having the mould or ſoil frequently ſtirred and applied to the roots of the plants. It is, indeed, only by a due repetition of theſe operations, that the plants attain their moſt perfect ſize and growth. The buſineſs is accompliſhed by means of ploughs, horſes, and Land-hoes. Where the plants are ſet out in a regular manner at ſufficient diſtances, the work may be performed in the moſt cheap and effectual way by the uſe of the horſe-hoe, or the common light ſwing-plough; but, where narrow diſtances are employed, it can only be well executed by means of the hand-hoe. Sometimes both the horſe and the hand-hoe are made uſe of, as where the crop is planted cloſe in the rows with wide intervals. It is obſerved, by an uſeful modern writer, that "the number of hoeings muſt in general depend upon the ſtate of the land and the nature of the ſeaſon, but three will in moſt caſes be neceſſary. The firſt ſhould be given about three weeks or a month after planting, according to the growth of the plants, and the ſecond at an equal diſtance of time; the third may be repeated as the neceſſity of the crop may require, attention being conſtantly paid to keep the land perfectly clean from weeds, and the earth or mould well looſened and laid up to the plants. In the firſt operation, it is uſual to turn the mould or ſoil from the plants, but, in the ſubſequent ones, to apply it up to them, which, where the plants are ſet regularly in ſquares at the diſtance of three feet, may be performed in both directions of the ground, in the moſt perfect manner. In this way the cultivator not only in a great meaſure avoids the heavy expence of hand-hoeing, but contributes to the growth of the crop in the moſt effectual manner."

In executing the work by means of horſe labour, ſome make uſe of the horſe-hoe, others, the double mould-boarded and common hoe-ploughs; and it has been contended by Dr. Anderſon, that it may be effected with equal exactneſs, and in an equally effectual manner, by any common light ſwing-plough. The author of "Practical Agriculture" obſerves, "that, after theſe hoeings have been accompliſhed, the hand-hoe may be occaſionally employed juſt about the roots of the plants, if there ſhould be neceſſity. And where the crops are planted out at narrow diſtances, either wholly or in the rows only, it muſt altogether, or in a great meaſure, be depended upon for the after culture of the crops. In theſe caſes two or three hoeings are moſtly found neceſſary. The expence of each hand-hoeing in ſuch crops is, in general, from two ſhillings to half a crown, or three ſhillings an acre." And where the crops have been put in, in the drill method, they will require to be thinned out to proper diſtances in the rows as ſoon as the plants have attained a few inches growth, being afterwards cleared and moulded up in the ſame manner as thoſe which are planted out in the common way.

Theſe crops, like many others, are liable to be injured by the attacks of animals of the inſect kind, at different periods of their growth. While the plants are young and tender in the ſeed bed, the *beetle*, or *fly*, often greatly injures or deſtroys them. They, likewiſe, occaſionally ſuffer in the ſeed-bed from the attacks of the caterpillar, produced by the cabbage butterfly (*Papilio Braſſicæ*), though much leſs frequently, as this inſect makes its appearance, in general, too late to do much injury to field crops. Much harm is likewiſe done to cabbage-plants while young, on their being firſt planted out, by the ſlug, but afterwards they are little expoſed to its attacks. The depredations of the fly or beetle, as well as the caterpillar, may, in general, be, in a great meaſure, prevented, by the ſowing or diſperſing of wood-aſhes, ſoot, or other ſimilar matters, in a powdery ſtate, over the young plants, on the firſt appearance of the inſects among them. But "beſides the attacks of inſects on the leaves of the plants, cabbages are ſubject to a diſeaſe in the roots, in which they become ſwelled out and knobby, and the plants weak and of imperfect growth. This vegetable diſeaſe has been ſuppoſed to be cauſed by the attacks of grubs below the ſurface of the ground, and to be chiefly prevalent where the ſame ſort of cabbages are ſown and planted on the ſame ſpots of ground for ſeveral years together."

It has been remarked, that, "where care is taken to plant out the proper hardy ſorts of cattle-cabbages, there is little danger of their being injured by the ſeverity of the froſts during the winter months, as ſeldom more than a few of their large outſide leaves have been found to ſuffer. Many of the hardy varieties of cabbage have, indeed, been found to ſtand the winter froſts equally, or even better, where there are frequent thaws, than thoſe of the borecole, or kale kinds; but the latter would appear better adapted as a green food, eſpecially for ſheep, in the early ſpring months, as it may be repeatedly eaten down or cut over, and by that means furniſh a more full ſupply of food."

It has been remarked "that, in reſpect to the quantity of produce that may be derived from an acre of land under a crop of this kind, it muſt depend in a great degree upon the quality of the ſoil, the proportion of manure that is employed, the method of culture, the goodneſs of the plants, and the favourableneſs of the ſeaſon, about the time of planting them out." But that "it may probably, in general, be eſtimated at from twenty to thirty tons. In comparing the produce of cabbage crops with thoſe of turnips in different modes of planting, and on different kinds of ſoils, it was found, taking the beſt part of the crops, that, at a medium, an acre of the former, on good land, well managed, produced twenty-five tons, and of the latter fifteen tons. The value of the crops muſt likewiſe be affected by various circumſtances, as the kinds of live ſtock by which they are conſumed, the manner in which it is accompliſhed, and the ſituation of the cultivator with reſpect to markets; but that in common they may be calculated at from four or five to ſeven or ten pounds the acre, and in many ſituations conſiderably more."

It has been farther obſerved, in a late work, that "in the application or expenditure of cabbage crops, as they are often liable to a conſiderable diminution in the quantity or weight of food which they contain, by ſtanding over the winter to the ſpring months, it may be the beſt and moſt economical practice to make uſe of them late in the autumn, while their leaves are in perfection, in completing the fattening of ſuch neat cattle or ſheep as have been brought conſiderably forward in the paſtures during the ſummer ſeaſon. In this way there is much leſs loſs ſuſtained than is generally the caſe where they are ſuffered to ſtand for ſpring feed, by the decay and deſtruction of the outſide leaves and other parts of the plants. In the feeding of milch-cows, at the ſame period, they may likewiſe be of very great utility, as ſupplying a large proportion of green food, whether the whole plant be made uſe of, or only the more looſe green leaves, which may often be removed without much injury to the cabbages. In this method of application they have been ſhewn to be more beneficial than hay, given in any proportion, when only combined with ſtraw, and that the butter is not in any way injured by them while they are given in a ſound ſtate. When employed in this way, without any combination of other ſorts of food, as hay or ſtraw, an acre has been found ſufficient for four or five cows; and, with ſtraw and a little hay, for ſeven or eight. In Mr. Young's experiments, detailed in the 16th volume of the "Annals of Agriculture," in feeding the ſmaller ſorts of cows, ſuch as would fatten to about forty-five ſtones, of fourteen pounds each; in October three milch ones ate 96 pounds each of cabbages, and $10\frac{1}{4}$lbs. of hay in the day; and in another experiment 39 pounds of cabbages, with $10\frac{1}{4}$lbs. of hay each, in the day; or in the proportion of two tons 18 cwt. of cabbages and 15 cwt. of hay in ſix months.

It has been well remarked that, "in this way of conſuming cabbage crops, the cows ſhould always be confined to the farm yard, and not ſuffered to eat them after being ſcattered on the ground; as in the latter way the farmer muſt ſuſtain injury both in the treading of his land, and in the loſs of a large portion of valuable manure. Beſides, it is ſuſpected that ſuch ſort of food will go farther, when carefully applied in the yard, than when conſumed on the land, as much waſte muſt be unavoidable in the latter method."

And it is farther added that, "in the fattening of neat cattle, an acre of good cabbages may be ſufficient for three beaſts of from forty to fifty ſtones each, which have been grazed in the paſtures in the ſummer. A middle ſized bullock conſumes, in general, of this ſort of food in the proportion of about one hundred pounds in twelve hours; but much in this buſineſs muſt conſtantly depend on the ſtate of the ſtomach, and the methods of feeding the animals. It would, however, ſeem probable, that cabbages poſſeſs the property of fattening cattle; not only more expeditiouſly, but in leſs proportion than turnips; an acre of the former having been found to fatten one in four more than the ſame extent of the latter crop."

It is likewiſe ſtated in the ſame work, that "in feeding this crop off with ſheep, it has been remarked, that ſuch as weigh about twenty pounds the quarter conſume in the proportion of from eight to ten pounds in twelve hours, half an acre being nearly ſufficient for one hundred ſheep, when the crop is good. The cabbages, when run to ſeed in the ſpring months, are alſo conſumed with avidity by theſe animals; but this practice ſhould never be attempted, as much injury muſt always be ſuſtained by the land. The refuſe of cabbage crops may, however, ſometimes be uſefully applied in the more early ſpring months, before they begin to run, to the feeding of lambing ewes, as by ſuch means the quantity of milk is much increaſed, and the lambs of courſe better ſupported. "Store hogs are likewiſe ſaid to be kept upon this vegetable with advantage, and to prefer it to turnips; but on trial with the finer breeds of this ſort of animals, it has not been found a beneficial mode of applying ſuch crops, as they conſtantly rejected both the cabbage and turnips for moſt other ſorts of food, and unleſs prepared by heat ſeldom ate them up clean."

It has been remarked, that, "though few experiments have been made in the feeding of horſes with this ſort of food, it is probable, that, after being chopped, cut, or ſhaved down by means of a ſtock or other knife, and blended with ſome other ſort of dry, cut fodder, it might be employed with great advantage both in the ſaving of other more valuable kinds of food, and in promoting the condition of the animals; as from its containing much ſaccharine matter, there can be little doubt of its poſſeſſing a highly nutritious quality. In this uſe the more ſweet and delicate ſorts of cabbage ought probably to be preferred.

That the application of this ſort of cabbage in this way has been ſcarcely attended to, is fully ſhewn by the obſervations of Mr. Marſhall, in his account of the midland diſtrict, who regiſters it as extraordinary, that neither in that, nor any other diſtrict, an inſtance had been met with of cabbages being made uſe of in the way of food for horſes."

It is ſuggeſted that, "where cabbages are employed for winter and ſpring conſumption, it has been the practice with ſome cultivators to have them cut or drawn while in full perfection, and piled up in houſes for the purpoſe, or ſtacked in the open air, being cloſely covered over by means of ſtraw, broom, or ruſhes, or any other cheap material; as in this way they are always ready and at hand, when they cannot be procured from the field on account of the wetneſs of the land, or the effects of froſt or ſnow. The practice is ſaid to be made uſe of in Germany, with ſuch ſucceſs, as to keep them in a good ſtate of preſervation during the whole of the winter ſeaſon. From the ſweet juicy nature of the vegetable, it is ſuppoſed, in this method, liable to be injured, not only by taking on too much heat, but by becoming mouldy. Beſides, by keeping in ſuch ſtacks they, like the turnip, ſhrink conſiderably, and are probably much impaired in their quality."

CABBAGE-*ſhrub*, *Anjou* or *Colewort*, in *Botany*. See BRASSICA.

CABBAGE, *Dog's*. See THELIGONUM CYNOCRAMBE.

CABBAGE, *Turnip*. See BRASSICA.

CABBAGE, *turnip*, in *Agriculture*, is a plant of the cabbage kind, in which the bulb or apple is of a roundiſh flat form, appearing principally above the ſurface of the ground, and as it were an enlargement of the ſtem of the plant, the leaves that ſurround it having much reſemblance to thoſe of broccoli. It has been occaſionally cultivated under the title of *cape cabbage*, and often confounded with the *turnip-rooted cabbage*, by thoſe who have not ſufficiently attended to the circumſtances by which they are diſtinguiſhed. It would ſeem to be the plant cultivated in different parts of Germany under the title of *kahlrabi*. The reſult of the trials made with it in field culture would ſeem to ſhew it an uſeful hardy plant.

The ſoils moſt adapted to the growth of this plant are thoſe of the more light and dry kinds, that have ſome degree of elevation, with reſpect to ſituation, and which are in a good ſtate of fertility from previous tillage. The land ſhould be prepared, by ploughing three or four times, in nearly the ſame manner as for the common turnip; being laid up in the autumn, in order to be rendered fine and mellow. When thus prepared, at the time of planting, it ſhould be ploughed into ſmall two-bout ridges, and a ſuitable proportion of manure turned in. On the ridges, when flattened by a light roller, the plants are to be put in.

The ſame method ſhould be purſued in providing the ſeed as has been adviſed for cabbages. In this culture it is ſometimes ſown in beds in the fields, whence the plants are afterwards to be drawn and ſet out; and in others, in drills or broad-caſt, where the plants are to remain, being only thinned out to proper diſtances by the hoe. Dr. Dickſon remarks, in his "Practical Agriculture," that, "the firſt method is probably, in general, to be preferred, though ſome cultivators contend that the plants ſucceed better, when not removed from the places in which they were depoſited when ſown, and which later experience in cultivating the common cabbage ſeems to ſhow to be the caſe. Where the tranſplanting method is practiſed, the ſeed ſhould be ſown ſufficiently early to have the plants of a proper ſize, as about ſix or ſeven weeks growth at the time of tranſplanting. About the middle of March, or beginning of April, may be the moſt proper periods. The ſeed, in theſe caſes, ſhould be ſown very thin, and the weak plants afterwards thinned out, till they are left at not leſs than three inches diſtance from each other. Five or ſix ounces of ſeed will, in general, be a proportion ſufficient for affording plants for ſetting out an acre of ground. In the drill method, the ſame proportion of ſeed may alſo in common be ſufficient, which ſhould be put in the ſoil about the beginning or middle of April; but if ſown later, as in May or June, it frequently ſucceeds. In the broadcaſt mode, from the plants not coming quickly to the hoe, the latter end of March may probably be the moſt proper period of ſowing; the proportion of ſeed being ſomewhat increaſed.

The planting in theſe crops may be performed either upon the plain ſurface of the prepared ground, or after it has been thrown up into ridges in the manner firſt deſcribed; but the latter is by much the beſt method, eſpecially where the land is inclined to moiſture. The moſt eligible time for executing the buſineſs is, as in the common cabbage, when the land has had a good ſhower of rain, the operations of ploughing and ſetting out the plants proceeding together; but Dr. Dickſon obſerves, that "neither operation ſhould be attempted when the ground is much ſoaked with rain, as much injury is not only done to the land, but the plants ſeldom thrive well."

In planting out, different diſtances are practiſed; ſome preferring the diſtance of two feet from row to row, and eighteen inches apart in the rows, where the ſoils are good; but in thoſe of inferior quality not more than twelve; while others adviſe their being planted two and a half or three feet aſunder, on two-bout ridges, the plants being placed as nearly as poſſible in the middle, immediately upon the dung, as recommended in the culture of the common cabbage.

The after culture in the crops muſt be performed in different ways, according to the methods of ſowing or planting that have been practiſed. When the ſeed is put in by the hand, the crop can only be kept clean by means of the hand-hoe, which ſhould be applied as frequently as is neceſſary for the purpoſe. But in the drill method, as well as where the crops are planted out with broad intervals and narrow diſtances in rows, it may be convenient to make uſe of both the plough or horſe-hoe, and the hand-hoe, employing the former in ſtirring and clearing the intervals, and the latter in keeping the ground between the plants clean. When planted on ridges, it is recommended, that as ſoon as the plants have become firmly eſtabliſhed in the ſoil, and weeds begin to appear, to throw a furrow from each ſide of them by means of a ſmall plough that is narrow behind, ſtirring the parts not thus moved by the hand-hoe, and after the decay of the weeds theſe turned down, but before the plants get too large to return them to their former ſituation, care being taken, not to cover the hearts of the plants with the earth. Theſe operations may be repeated as frequently as the ſtate of the crop may require. But as this plant forms its bulb above the ſurface of the ground, the earth or mould ſhould never be laid up ſo much to the roots of the plants as in the common cabbage, as it may not only prevent the ſwelling of the bulbs, but cauſe their deſtruction. It has been ſuggeſted in the work juſt noticed, that in dry ſeaſons this plant may probably be cultivated with greater advantage than that of the turnip, as not being ſubject to the deſtructive attacks of the fly, and being leſs expoſed to danger from other animals that are liable to deſtroy crops of that ſort. When ſituated cloſe to turnips that have been wholly devoured by the fly, it has never been perceived that plants of this kind were in the leaſt touched by it. The bulbs or roots of theſe plants frequently attain a conſiderable ſize where the ſoils are good, the largeſt ſometimes weighing eight or ten pounds, and are ſaid to be much more hardy than the common turnip, though not ſo much ſo as the turnip-rooted cabbage. The quantity of produce on an acre is not probably in general equal to that of the common turnip, though it is very conſiderable.

The application of this ſort of cabbage is chiefly in the feeding of neat cattle and ſheep during the autumn or ſpring months, according as it may be ſown more early or late; but the moſt profitable appropriation of it is probably in the latter ſeaſon, as from the middle of March, till it is removed from the ground. In this way it may become an uſeful aſſiſtant to crops of the turnip kind. In which uſe, it poſſeſſes a particular advantage, in being formed, as it were, upon a footſtalk above the ſurface of the earth, as it can on that account be more conveniently got at and removed during the time of froſt, or when ſnow is upon the ground, than the common turnip. The proportion of nutritious matter contained in crops of this ſort is conſiderable, and of a rich quality. Cows thrive extremely well on it when given in a proper manner. When fed off by ſheep, the beſt method is that of hurdling, in the manner practiſed for common turnips. In this mode of application they are ſaid to require little or no hay, even where the intention is to fatten the animals, as they make a greater progreſs on them than on any other ſorts of food, except that of oats. Both cows and ſheep have been found to feed upon the ſprouts with avidity, after their having bloſſomed, and been cut and left to wither. But this practice ſhould be cautiouſly practiſed, as much injury muſt conſtantly be done to the land, by the plants being ſuffered to run to ſeed. When the bulbs are ſhrunk and withered from being cut and packed up in houſes, they are ſaid to form a nutritious food for horſes, but farther trials are wanting to fully eſtabliſh the fact. It is obſerved, in the "Annals of Agriculture," that inſtead of cutting off the bulbs below the parts where they are formed, in order to preſerve them in houſes for the above purpoſe, it is the practice of ſome cultivators to plough them up wholly, uſing a common plough, without any coulter, having only a round ſhare with a blunt edge for the purpoſe. This is paſſed along under the rows, and performs the work with much eaſe, and in a very expeditious manner.

Cabbage, *turnip-rooted*, in *Botany*. See Brassica.

Cabbage, *turnip-rooted*, in *Agriculture*, a plant of the cabbage kind, which differs principally from the former, in forming its bulb, or protuberance, below the ſurface of the ground, in having it of an oblong ſhape, and in the leaves bearing a conſiderable reſemblance to thoſe of the common turnip. It has been introduced into field culture with advantage. The ſoils beſt ſuited to the growth of this ſort of crops are thoſe of the more friable loamy kinds, or ſuch as have been formed by the gradual depoſition of earthy matters from the overflowings of large rivers, or the ſea. But of whatever kind, the parts of them ſhould have been well broken down and reduced by means of tillage, and not be too retentive of moiſture. In preparing the ground, it ſhould be brought into a conſiderable ſtate of pulverization, or fineneſs, by repeated ploughings and harrowings; and enriched by the application of manure, in the proportion of eight or ten waggons' load to the ſtatute acre, which ſhould be turned in with the laſt ploughing, in forming the one-bout ridges for receiving the plants. This is ſometimes performed by the common plough; but it probably may be executed with more exactneſs by one with a double mould-board contrived for the purpoſe.

The ſeed muſt be procured from the beſt and moſt perfect plants of the kind, in the manner that has been already directed for common cabbage, and be employed while it is perfectly freſh; as ſuch ſeed as has been kept for ſome length of time ſeldom vegetates well, or with much regularity. But where it is neceſſary to make uſe of it, the beſt method is to ſteep it in water for a few hours before it is put into the ground. The time of ſowing muſt be ſooner or later, according to the intention of the cultivator, in reſpect to the conſumption of the crop; but for the ſummer planting, the beſt time is generally about the latter end of March or the beginning of April; for which purpoſe a piece of ground ſhould be prepared, by repeated turning over in the winter, ſo as to become perfectly fine and free from weeds. This muſt now be covered by ſome well reduced farm-yard manure, adding a little freſh horſe-dung from the ſtable. This is then to be turned lightly in, by means of the plough, and a ſuitable proportion of ſeed ſown over the whole; being covered in by means of a ſtrong rake or light harrow. But where this ſort of preparation has not been made, a piece of old graſs land, reduced by paring and burning, may, according to Mr. Tugwell, an experienced cultivator, be dreſſed in a ſimilar manner; or the ſulſoil of a winter ſheep-fold, the ſtraw, dung, and thin turfy materials having been previouſly removed. As the plants riſe, attention ſhould be paid to the fly, guarding againſt its attacks by the application of wood-aſhes or ſoot, when it firſt appears, over the crops. When the plants are found to grow too faſt, or advance too high in the ſtems, before the period of ſetting them out in the field, ſo as to attain an improper ſhape not eaſily afterwards removed, it may be neceſſary to draw up the whole of the plants clean on one ſide of the bed, digging or turning the ſoil over in the place where they ſtood, to the depth of four or five inches, with the ſpade, putting the plants in the trenches in the proportion of forty or fifty in each yard, the roots being covered by the earth taken out of the ſucceeding trench, and ſlightly trodden down upon them. In this manner all the plants that require it are to be intrenched; by which their improper growth may not only be checked, but the plants be rendered more fit to be ſet out in the field. But where the land for the ſeed-bed has been properly prepared, and is perfectly free from weeds, this proceſs will ſeldom be found neceſſary to be employed.

The planting out of this ſort of plants may be executed in the ſame manner as the turnip-cabbage, either upon the plain ploughed ſurface, or after the land has been raiſed into ridges. The latter is however to be preferred, eſpecially where the ſoil is inclined to moiſture. They are planted at different diſtances, according to the goodneſs of the land: but the moſt general practice is from two to two and a half or three feet. In the ridge method, it is uſual to ſet them on the middle of the ridges, at the diſtance of two feet in the rows. The plants ſhould be carefully drawn from the ſeed-bed towards the latter end of June, for the ſummer planting, when of the ſize of good large cabbage plants; and in order that as little injury as poſſible may be done to the roots, this work ſhould be performed immediately after rain, or after the beds have been well watered. They are then to be made up into ſmall bundles, and diſtributed by women and children ſingly along the ridges, or on the plain ſurface of the land, at proper diſtances, to be directly put into the ſoil by the dibblers: in doing which they ſhould be plunged up to the place of the branching out of the leaf ſtems, the mould or ſoil being firmly cloſed about them in the manner adviſed in the culture of the common cabbage. It is particularly neceſſary to attend to this laſt operation in dry ſeaſons, as the ſucceſs of the crop in a great meaſure depends upon it: and at the ſame time care ſhould be taken that a greater number of plants be not drawn from the ſeed bed than can be planted out in the ſame day, and that they be as little as poſſible expoſed to the action of the ſun and wind. It is alſo neceſſary for a few days to guard againſt their being pulled up and deſtroyed by rooks, or other birds, which are apt to attack them.

The after culture of the crops muſt be carefully attended to in theſe, as well as in other crops of a ſimilar kind. In about ten days, or a fortnight, when the plants grow well, they will in general require the aſſiſtance of the hand-hoe, to clear the ridges and give the plants a ſlight dreſſing. And as ſoon afterwards as may be convenient, the intervals ſhould be cleared either by the common plough, or any other more ſuitable implement, by paſſing them twice along each, turning the furrows, where the land is clear, and not too cloſe or compact, up towards the rows, being careful not to earth up the plants to too great a height; but where the contrary is the caſe, be turned from them, ſo as to form a ridge in the middle of the interval, the implement being paiſed within a few inches of the plants in performing the operation. This ridge in dry ſeaſons ſhould be ſplit down, and returned to the row again, in the courſe of a few days; another hand-hoeing being given as ſoon afterwards as may be found convenient. This laſt operation may frequently be unneceſſary on the more light and clean deſcriptions of land; but on the ſtrong and more compact ſoils it may be had recourſe to with advantage, both in reſpect to the preſent and future crop.

The quantity of produce in crops of this kind, is frequently found, on good land, to be from 25 to 30 tons on the acre. It is ſtated, in the ninth volume of the Bath papers, that, in a practice of 20 years, the produce of an acre of this crop was, on an average, invariably found to be equal to the ſupport of 70 ſheep for a month, in the moſt hungry, trying, and difficult part of the year; and this on land then not worth more than 13s. the acre, but which contained between ſeven and eight thouſand plants, averaging above four pounds each in weight. In the Tranſactions of the Society for the Encouragement of Arts, &c. various accounts are given of the great uſe of the produce in theſe crops, as well as of their vaſt utility as a late ſpring ſheep feed. They have likewiſe been found beneficial in feeding milch cows, and hogs are very fond of them, ſows giving abundance of milk while feeding on them. From this plant being a native of a more cold and northern climate, it of courſe retains, in ſome meaſure, the late habits of the ſituation from which it was originally brought, and becomes proper for the purpoſe of feeding live ſtock, at a later period in the ſpring, than many other plants to which it has a reſemblance. It is ſeldom before the middle of April that the juice begins to riſe, and the plant becomes proper for being fed upon. About this time, however, as is ſhewn by the buſhy appearance of its top, it begins to puſh forward, and be in a condition to be made uſe of. When employed before this period, it is ſaid, in the work juſt noticed, to be comparatively of little advantage; and, in ſome caſes, even injurious to the animals that feed on and conſume it. The principal application of crops of this ſort is in the feeding of ſheep, which are confined upon portions of them by hurdles, in the manner practiſed for the common turnip. The roots are, however, to be pulled up and prepared by being cut in two by means of an implement of the mattock kind, having a claw on one ſide nine inches long, with a tranſverſe edge at its end, two inches in width, and on the other a ſort of cleaver;

cleaver: with this tool, acting as a lever by means of the handle, the roots are readily taken up, after which any dirt that may adhere to them is ſhaken off by a blow or two, and the roots ſplit by the cleaver. This enables the ſheep to begin in the centre of the roots, and proceed outwards, eating them with more eaſe, and much more completely, than in any other method. When they are not cut, the hard ſubſtance of the rind renders them difficult of being eaten by the animals. One year old ſheep, or what are frequently denominated tegs, wethers, and all dry ſheep, may in preference be fed on this root; but when ewes and lambs are to be kept upon it, the hurdles muſt be ſo contrived as to admit the lambs to paſs through them to feed at large, as by this contrivance much benefit will be derived.

Crops of this nature may be found, on the whole, from the hardy and other properties of the plants, to conſtitute an excellent nutritious food for ſheep at thoſe periods in the ſpring when few other ſorts of green food can be procured or depended upon. The culture of it, in proportion to the quantity of ſheep that may be kept on the farm, ſhould therefore be carefully attended to by the ſheep farmer. Dr. Dickſon remarks, that this vegetable has been aſſerted to be capable of being preſerved for ſome time out of the ground, without its properties being in the leaſt injured; but, as in moſt other bulbous roots, the beſt and moſt economical practice is probably that of employing it in its freſh ſtate. When thus made uſe of, there can be little doubt of its proving a valuable aſſiſtant, to the turnip crop, as a late ſpring feed for ſheep or other animals.

CABBAGE-*bark tree*, in *Botany*. See GEOFFROYA *inermis*.

CABBAGE-*tree*. See ARECA *oleracea* and CACALIA *kleinia*.

CABBAGE-*butterfly*, in *Entomology*, the common Engliſh name of *Papilio braſſicæ*.

CABBAGING, among *Gardeners*, is ſometimes uſed to denote the knitting or gathering of certain pot-herbs into round bunched heads. In which ſenſe the word amounts to the ſame with what Evelyn calls *poming*, *pommer*; q. d. appling, or growing applewiſe. Others call it ſimply heading or bunching.

To make lettuce cabbage, they tranſplant it, taking care, during the great heats, to water it; otherwiſe inſtead of poming, it runs to ſeed. To promote the cabbaging of cabbage, thoſe who live on the ſea-coaſt, put ſea weed, with a little nitre, under their roots.

Cabbage-plants of the early kind begin to turn in their leaves for cabbaging in May. The Batterſea ſort cabbage apace when they once begin, and as ſoon grow hard and burſt open; but the ſugar-loaf kind is longer before it comes, and is as ſlow in its cabbaging.

CABBALA, a myſterious kind of ſcience, delivered by revelation to the ancient Jews as they pretend, and tranſmitted by oral tradition to thoſe of our times; ſerving for interpretation of the books both of nature and ſcripture.

The word is alſo written *Cabala*, *Caballa*, *Kabbala*, *Kabala*, *Cobaliſtica*, *Ars Cabala*, and *Gaballa*. It is originally Hebrew, קַבָּלָה, *kabbalah*; and properly ſignifies *reception*; formed from the verb קִבֵּל, *kibel*, *to receive by tradition*, *or from father to ſon*, eſpecially in the Chaldee and Rabbinical Hebrew.

Cabbala, then, primarily denotes any ſentiment, opinion, uſage, or explication of Scripture tranſmitted from father to ſon. In this ſenſe, the word cabbala is not only applied to the whole art, but alſo to each operation performed according to the rules of that art. Thus it is, R. Jac. Ben Aſcher, ſurnamed Baal-Hatturim, is ſaid to have compiled moſt of the cabbalas invented on the books of Moſes before his time.

As to the origin of the cabbala, the Jews relate many marvellous tales. They derive the myſteries contained in it from Adam; and aſſert, that whilſt the firſt man was in Paradiſe, the angel Rafiel brought him a book from heaven, which contained the doctrines of heavenly wiſdom; and that when Adam received this book, angels came down from heaven to learn its contents, but that he refuſed to admit them to the knowledge of ſacred things, entruſted to himſelf alone; that, after the fall, this book was taken back into heaven; that, after many prayers and tears, God reſtored it to Adam; and that it paſſed from Adam to Seth. The Jewiſh fables further relate, that the book being loſt, and the myſteries contained in it almoſt forgotten, in the degenerate age preceding the flood, they were reſtored, by ſpecial revelation, to Abraham, who tranſmitted them to writing in the book "Jezirah;" and that the revelation was renewed to Moſes, who received a traditionary and myſtical, as well as a written and preceptive, law from God. Accordingly, the Jews believe, that God gave to Moſes on mount Sinai, not only the law, but alſo the explication of that law; and that Moſes, after his coming down, retiring to his tent, rehearſed to Aaron both the one and the other. When he had done, Aaron ſtanding on the right hand, his ſons, Eleazar and Ithamar, were introduced to a ſecond rehearſal: this being over, the ſeventy elders that compoſed the ſanhedrim were admitted; and laſtly, the people, as many as pleaſed: to all of whom Moſes again repeated both the law and explanation, as he received them from God. So that Aaron heard it four times, his ſons thrice, the elders twice, and the people once. Now, of the two things which Moſes taught them, the laws and the explanation, only the firſt were committed to writing; which is what we have in Exodus, Leviticus, and Numbers: as to the ſecond, or the explication of thoſe laws, they were contented to impreſs it well in their memory, to teach it their children; they to theirs, &c. Hence, the firſt part they call ſimply the law, or the written law; the ſecond, the oral law, or cabbala. Such is the original notion of the cabbala.

The cabbala being again loſt amidſt the calamities of the Babyloniſh captivity, was once more revealed to Eſdras; and it is ſaid to have been preſerved in Egypt, and tranſmitted to poſterity through the hands of Simeon ben Setach, Elkanah, Akibha, Simeon ben Jochai, and others. The only warrantable inference from theſe accounts, which bear the obvious marks of fiction, is, that the cabbaliſtic doctrine obtained early credit among the Jews as a part of their ſacred tradition, and was tranſmitted, under this notion, by the Jews in Egypt to their brethren in Paleſtine. Under the ſanction of ancient names, many fictitious writings were produced, which greatly contributed to the ſpreading of this myſtical ſyſtem. Among theſe were "Sepher Happeliah," or the book of wonders; "Sepher Hakkaneh," or the book of the pen; and "Sepher Habbahir," or the book of light. The firſt unfolds many doctrines ſaid to have been delivered by Elias to the rabbi Elkanah; the ſecond contains myſtical commentaries on the divine commands; and the third illuſtrates the moſt ſublime myſteries. Among the profound doctors, who, beſides the ſtudy of tradition, cultivated with great induſtry the cabbaliſtic philoſophy, the moſt celebrated perſons are the rabbis Akibha, who lived ſoon after the deſtruction of Jeruſalem (See AKIBHA;) and Simeon ben Jochai, who flouriſhed in the ſecond century (See SIMEON BEN JOCHAI). To the former is aſcribed the book, entitled "Jezirah," concerning the creation; and to the latter, the book "Sohar," or brightneſs; and theſe are the principal ſources from which we derive our knowledge of the cabbala. From the third century to the tenth, few traces of the cabbaliſtic philoſophy occur in the writings of the Jews. The probable reaſon is that theſe myſteries, which differ materially from the ancient doctrine of the Jewiſh church, were entruſted only to the initiated under a ſolemn oath of ſecrecy; and therefore few perſons would venture to commit them to writing. Books that were written would be ſtudiouſly concealed from public inſpection, and their enigmatical language would be a ſeal upon their meaning which could not be broken by the vulgar hand of an uninitiated Jew. Beſides, the Jews were for many centuries deeply involved in controverſies concerning their traditionary laws, and if they were poſſeſſed of Talmudical erudition, they thought themſelves ſufficiently learned: not to add that the whole nation was oppreſſed and haraſſed by perſecution.

That this ſyſtem of the cabbaliſtic philoſophy, which we may conſider as the acroamatic, eſoteric, or concealed doctrine of the Jews, by way of contradiſtinction from the exoteric or popular doctrine, was not of Hebrew origin, we may conclude with a very great degree of probability, from the total diſſimilarity of its abſtruſe and myſterious doctrines, to the ſimple principles of religion taught in the Moſaic law; and that it was borrowed from the Egyptian ſchools will ſufficiently appear from a compariſon of its tenets with thoſe of the oriental and Alexandrian philoſophy. (See Alexandrian.) Many writers have, indeed, imagined that they have found in the cabbaliſtic dogmas, a near reſemblance of the doctrines of Chriſtianity, and they have thought, that the fundamental principles of this myſtical ſyſtem were derived from divine revelation. This opinion, however, may be traced up to a prejudice which originated with the Jews, and paſſed from them to the Chriſtian fathers, by which they were led to aſcribe all pagan wiſdom to an Hebrew origin; a notion which very probably took its riſe in Egypt, when Pagan tenets firſt crept in among the Jews. Philo, Joſephus, and other learned Jews, in order to flatter their own vanity, and that of their countrymen, induſtriouſly propagated this opinion; and the more learned fathers of the Chriſtian church who entertained a high opinion of the Platonic philoſophy, haſtily adopted it, from an imagination that if they could trace back the moſt valuable doctrines of Paganiſm to a Hebrew origin, this could not fail to recommend the Jewiſh and Chriſtian religions to the attention of the Gentile philoſophers. Many learned moderns, relying implicitly upon theſe authorities, have maintained the ſame opinion, and have thence been inclined to credit the report of the divine original of the Jewiſh cabbala. But the opinion is unfounded; and the cabbaliſtic ſyſtem is eſſentially inconſiſtent with the pure doctrine of divine revelation. The true ſtate of the caſe ſeems to be that the Jews, like other oriental nations, from the moſt remote period, had ſecret doctrines or myſteries. During the prophetic ages, theſe, probably, conſiſted in a ſimple explanation of thoſe divine truths, which the prophets delivered under the veil of emblems. After this period, when the ſects of the Eſſenes and Therapeutæ were formed in Egypt, foreign tenets and inſtitutions were borrowed from the Egyptians and Greeks, and in the form of allegorical interpretations of the law, were admitted into the Jewiſh myſteries. Theſe innovations chiefly conſiſted in certain dogmas concerning God and divine things, at this time received in the Egyptian ſchools, particularly at Alexandria, where the Platonic and Pythagorean doctrines on theſe ſubjects had been blended with the oriental philoſophy. The Jewiſh myſteries, thus enlarged by the acceſſion of Pagan dogmas, were conveyed from Egypt to Paleſtine, at the time when the Phariſees, who had been driven into Egypt under Hyrcanus, returned, with many other Jews, into their own country. From this time the cabbaliſtic myſteries continued to be taught in the Jewiſh ſchools, but, at length, they were adulterated by a mixture of Peripatetic doctrines, and other tenets, which ſprang up in the middle age. Theſe myſteries were not, probably, reduced to any ſyſtematic forms in writing, till after the diſperſion of the Jews, when, in conſequence of their national calamities, they became apprehenſive that thoſe ſacred treaſures would be corrupted, or loſt. In preceding periods, the cabbaliſtic doctrines underwent various corruptions, particularly from the prevalence of the Ariſtotelian philoſophy. The ſimilarity, or rather the coincidence, of the cabbaliſtic, Alexandrian, and oriental philoſophy, will be ſufficiently evinced by briefly ſtating the common tenets in which theſe different ſyſtems agreed; they are as follow: "All things are derived by emanation from one principle: and this principle is God. From him a ſubſtantial power immediately proceeds, which is the image of God, and the ſource of all ſubſequent emanations. This ſecond principle ſends forth, by the energy of emanation, other natures, which are more or leſs perfect, according to their different degrees of diſtance, in the ſcale of emanation, from the firſt ſource of exiſtence, and which conſtitute different worlds or orders of being, all united to the eternal power from which they proceed. Matter is nothing more than the moſt remote effect of the emanative energy of the Deity. The material world receives its form from the immediate agency of powers far beneath the firſt ſource of being. Evil is the neceſſary effect of the imperfection of matter. Human ſouls are diſtant emanations from Deity, and after they are liberated from their material vehicles, will return, through various ſtages of purification, to the fountain whence they firſt proceeded." From this brief view it appears, that the cabbaliſtic ſyſtem, which is the offspring of the other two, is a fanatical kind of philoſophy, originating in defect of judgment and eccentricity of imagination, and tending to produce a wild and pernicious enthuſiaſm. For a fuller accout of the tenets of the Juwiſh cabbala, we refer to Brucker's Hiſt. of Philoſ. by Enfield. vol. ii. chap. iii.

Dr. Burnet examines into the merits of the ſeveral parts of the cabbala, which he finds to be without rational foundation, and not conducing to any real knowledge. But he conjectures, that the moſt ancient cabbala, before it was confounded and defiled with fables, might contain ſomething of the original of things, and their gradations; particularly, that, before the creation, all things had their being in God; that from him they flowed as emanations; that they will all flow back again into him, when they are deſtroyed; and that there will ſucceed other emanations and regenerations, and other deſtructions and abſorptions to all eternity, as they had been from all eternity; that nothing is produced out of nothing; and that the things produced never return to nothing, but always have their ſubſiſtence in God. Burn. Archæol. lib. i. cap. 7. Phil. Tranſ. N° 201. p. 800.

Among the explications of the law, which are furniſhed by the cabbala, and which, in reality, are little elſe but the ſeveral interpretations and deciſions of the Rabbins on the laws of Moſes, ſome are myſtical: conſiſting of odd abſtruſe ſignifications given to a word, or even to the letters whereof it is compoſed: whence, by different combinations, they draw meanings from Scripture, very different from thoſe it ſeems naturally to import. The art of interpreting Scripture after this manner is called more particularly cabbala: and it is in this laſt ſenſe the word is more ordinarily uſed among us. This cabbala, called alſo artificial cabbala (to diſtinguiſh it from the firſt kind, or ſimple tradition,) is divided into three ſorts. The firſt, called *gematria*, conſiſts in taking letters as figures, or arithmetical numbers, and explaining each word by the arithmetical value of the letters whereof it is compoſed; which is done various ways. The ſecond is called *notaricon;* and conſiſts either in taking each letter of a word for an entire diction, or in making one entire diction out of the initial letters of many. The third kind, called *themurah*, q. d. *changing*, conſiſts in changing and tranſpoſing the letters of a word; which is done various ways.

The generality of Jews prefer the cabbala to the Scripture; comparing the former to the ſparkling luſtre of a precious ſtone, and the latter to the fainter glimmering of a candle.

The cabbala only differs from maſorah, as the latter denotes the ſcience of reading the Scripture, the former of interpreting it. Both are ſuppoſed to have been handed down from generation to generation by oral tradition only, till at length the readings were fixed by the vowels and accents, as the interpretations were by the *maſorah* and *gemara*. Prideaux Conn. p. i. lib. v. p. 506.

The cabbala hitherto ſpoken of may be called ſpeculative cabbala; in oppoſition to the following, which may be called practical cabbala.

Cabbala is alſo applied to the uſe, or rather abuſe, which viſionaries and enthuſiaſts make of Scripture, for diſcovering futurity, by the ſtudy and conſideration of the combination of certain words, letters, and numbers, in the Sacred Writings. All the words, terms, magic figures, numbers, letters, charms, &c. uſed in the Jewiſh magic, as alſo in the hermetical ſcience, are compriſed under this ſpecies of cabbala, which profeſſes to teach the art of curing diſeaſes, and performing other wonders, by means of certain arrangements of ſacred letters and words. But it is only the Chriſtians that call it by this name, on account of the reſemblance this art bears to the explications of the Jewiſh cabbala: for the Jews never uſed the word cabbala in any ſuch ſenſe, but ever with the utmoſt reſpect and veneration. It is not, however, the magic of the Jews alone which we call cabbala, but the word is alſo uſed for any kind of magic.

CABBALIC *art*, *Ars cabbalica*, is uſed by ſome writers for *ars palæſtrica*, or the art of wreſtling.

CABBALISTIC *art*. See Cabbala, and Cabbaliſts.

CABBALISTS, a ſect among the Jews, who follow and practiſe the cabbala, or interpret Scripture according to the rules of the literal cabbala, above laid down.

The Jews are divided into two general ſects; the Caraites, who refuſe to receive either tradition, or the Talmud, or any thing but the pure text of Scripture: and the Rabbiniſts or Talmudiſts, who, beſide this, receive the traditions of the ancients, and follow the talmud.

Theſe latter are again divided into two other ſects; pure Rabbiniſts, who explain the Scripture in its natural ſenſe, by grammar, hiſtory, and tradition; and Cabbaliſts, who, to diſcover hidden myſtical ſenſes, which they ſuppoſe God to have couched therein, make uſe of the cabbala, and the myſtical rules and methods above mentioned.

There are viſionaries among the Jews, who believe that Jeſus Chriſt wrought his miracles by virtue of the myſteries of the cabbala. Some learned men are of opinion, that Pythagoras and Plato learned the cabbaliſtic art of the Jews in Egypt; and fancy they ſee evident footſteps thereof in their philoſophy: others, on the contrary, ſay, it was the philoſophy of Pythagoras and Plato that firſt furniſhed the Jews with their cabbala. Be this as it will, it is certain, that in the firſt ages of the church, moſt of the heretics gave into the vain notions of the cabbala: particularly the Gnoſtics, Valentinians, and Baſilidians. Hence aroſe the αϐραξας, and the multitude of taliſmans, wherewith the cabinets of the virtuoſi were ſtocked.

See a particular account of the cabbaliſtic art, as practiſed not only by Jews, but by Heathens and Chriſtians, in Baſnage's Hiſt. of the Jews, book iii. chap. 10—28.

CABBIN. See Cabin.

CABBY *iſland*, in *Geography*, lies N. of Holyhead iſland on the coaſt of Wales, about two miles from the north point of that iſland.

CABE, a river of Spain, which uniting with the Velezar, runs into the Minho, a little to the weſt of Orenſe in Galicia.

CABEÇA, or Cabesse, in *Commerce;* the Portugueſe who carry on the trade of ſilks in the Eaſt Indies, diſtinguiſh them by the names of *cabeça*, and *barillo;* that is to ſay, head and belly. The *cabeça* ſilks are the fineſt; the *barillo* being from fifteen to twenty *per cent.* inferior to them. The Indian workmen endeavour to mix them together; for which reaſon the more experienced European merchants, who carry on that trade, take care to open the bales, and to examine the ſkins. The Dutch diſtinguiſh two ſorts, viz. the ordinary cabeſſe, and the "cabeſſe de mora."

Cabeça *de Vide*, in *Geography*, a ſmall town of Portugal, in the province of Alentejo, with a ſtrong caſtle. N. lat. 39°. W. long. 60° 43′.

Cabeça, La, in *Zoology*, a ſnake of South America in Panama, there called the double-headed ſnake, from an imagination that it has a head at each extremity, and that from the bite of each it conveys a poiſon equal in activity to that of the coral or rattle-ſnake. Its uſual length is ſaid to be about half a yard, reſembling in figure an earth-worm. Its diameter is about ſix or eight lines, and its head different from the heads of other ſnakes, being of the ſame dimenſions with its body. The creature, however, has only one head, which, as it reſembles a tail, has occaſioned the notion that it has two heads. Its motion is very ſlow, and its colour variegated with ſpots of a paler tint.

CABEÇAS, Las, in *Geography*, a town of Spain, in the province of Andaluſia, containing ſeveral ruins that indicate its having been formerly a large place; 4 leagues S. of Seville.

Cabeças *Rubias*, a town of Spain, in the country of Seville, on the confines of Portugal; 40 miles N.W. of Seville.

Cabeças, a town of the iſland of Cuba; 130 miles S.W. of Havanna.

CABEÇON, a town of Spain, in the province of Leon, ſeated on a mountain, with a fort on the river Piſuerga; 3 leagues N.N.E. from Valladolid.—Alſo, a town of Spain, in the province of Aſturia; 18 miles W.S.W. of St. Andre.

CABEGO, a river of Portugal, which runs into the Lima, 7 miles above Ponte de Lima.

CABEL, or Kabel, Adrian Vander, in *Biography*, a painter of landſcape, ſea-ports, and cattle, was born at Ryſwick, in 1631, and became a diſciple of John Van Goyen, under whoſe inſtruction and example he made a rapid progreſs in his profeſſion, and by whom his name was changed from Vander Touw to Vander Cabel. He copied nature and deſigned every object before he inſerted any in his compoſitions. His taſte in deſigning animals and figures was formed after that of Caſtiglione; and in landſcape his model was the ſtyle of Salvator Roſa. His manner is great, and much after the *goût* of the Italian ſchool. The touchings of his trees are excellent; his figures and animals are very correct, and marked with ſpirit.

Although his different pictures have unequal merit, they are all diſtinguiſhed by the freedom of his hand, and the fine touch of his pencil. In his colouring he was ſolicitous to imitate the Caracci and Mola; but the beauty of his deſign and compoſition is often injured by too dark and deep tone of colouring. His etchings, of which ſome few remain, are performed in a ſlight, free ſtyle. He died in 1695. Pilkington and Strutt.

CABELLIO *Cavarum, Cavaillon*, in *Ancient Geography*, a town of Gallia Narbonnenſis. This was a Roman colony in the time of the triumvir Lepidus, 42 years before the Chriſtian æra. With regard to the conſtruction of the triumphal arch of Cavaillon it is conjectured, that as Pompey had granted the two banks of the Rhone to the inhabitants of Marſeilles, the town of Cavaillon, upon the Durance and near the Rhone, belonged to them. This monument was accordingly erected to commemorate the exploits of Pompey and the Roman armies. The medals of this city were bronze, gold, and ſilver.

CABELLO *port*, in *Geography*, lies on the north coaſt of the Spaniſh main, in N. lat. 10° 31′. W. long. 67° 32′.

CABELON, lies on the coaſt of Coromandel in India, 7 miles from Conimore N. by E. and 5 leagues from Madras or fort St. George. To the ſouth of Cabelon are the 7 Pagodas, by which the coaſt is known.

CABENDA, or CABINDA, a ſea-port town of Africa in the kingdom of Angoy or Goy on the coaſt of Loango, is ſituate on the mouth of the river of the ſame name, about 5 leagues N. of Cape Palmerino. The bay lies very commodious for trade, wooding, and watering, on the ſea-ſhore. Some parts of the adjacent ground are flat and marſhy; but it gradually aſcends about 3 miles within land and forms a ridge of hills, on the aſcent of which is a town, where a ſtock of wood is always kept for the ſupply of foreign ſhips. The town of Cabenda is ſeated on the round point of the bay, looking towards the weſt, and the Engliſh factory on the ſouth-weſt of the road, at ſome diſtance, N. E. from the town. The Portugueſe, Dutch, and other Europeans come to this port for water and proviſions. The houſes, or rather huts, are built of dirt and reeds. The country round the bay is moſtly barren, and the people very lazy. They breed no cattle except ſome hogs, but they have plenty of poultry. The wild beaſts are ſo numerous in the woods that they deſtroy all of the tame kind. Civet-cats and parrots are numerous. The coaſt abounds with oyſters; and the natives fiſh both on the beach and in the bay with drag-nets, having long canes that are fixed at equal diſtances, inſtead of corks, to ſhew when any fiſh is caught. Theſe nets are made of a peculiar root, which, being beaten, becomes, flexible like hemp. S. lat. 6° E. long. 12° 5′.

CABERASA, in *Ancient Geography*, a town of Aſia, in Media. Ptolemy.

CABES, or GABES, in *Geography*, a town of Africa, in the kingdom of Tunis, ſituate on a river near a gulf of the ſame name. N. lat. 33° 40′ E. long. 10° 55′.

CABESA, a town of the iſland of Cuba; 55 miles N. of St. Jago.

CABESTA *Gatta*. See CAT'S *Head*.

CABESTAN, or CABESTAING, WILLIAM DE, in *Biography*, a famous Provençal poet of the 13th century, mentioned by Petrarch, who paſſed the firſt years of his life in the caſtle of the lord of Cabeſtan; and being enamoured of a lady belonging to the houſe of Baux, wrote verſes in her praiſe, which were popular. The lady, in order to ſecure his inviolable attachment, adminiſtered to him an herb by way of philtre, which deranged his underſtanding. He was recovered by an antidote, which converted his love into hatred. In his attendance on Tricline Carbonal, the wife of Raimon de Seillans, he ingratiated himſelf with her to ſuch a degree as to excite the jealouſy of her huſband, who privately killed him and barbarouſly tore out his heart. This he cauſed to be dreſſed, and ſerved up to his wife in a diſh. After ſhe had partaken of it, ſhe was told what ſhe had eaten, and died of grief. This event occurred about the year 1213. Moreri.

CABESTERRE, in *Geography*, a name given in the Antilles iſlands, to that part of the iſland which looks towards the eaſt, and which is always refreſhed by the trade-winds, blowing from the north to the eaſt-ſouth-eaſt. The oppoſite part is called "Baſſe-terre," being lower and leſs expoſed to the wind, and of courſe hotter: here the ſea is leſs agitated than in the Cabeſterres, and it is conſequently better adapted to the anchorage and loading of veſſels.

CABESTERRE, or *Le Marigot*, a town of the iſland of Guadaloupe on the eaſt coaſt. N. lat. 16° 10′. W. long. 61° 44′.

CABESTES, lies near La Vera Cruz, on the S.W. coaſt of Campeachy bay in the gulf of Mexico.

CABEZZO, a province of the kingdom of Angola in Africa, joining to Oacco on the north, and to Lubalo on the ſouth, and having the Coanza on the north-eaſt, and Rimba on the ſouth-weſt. It is populous, and well ſtored with cattle and other proviſions; and it has a mine of iron on a mountain, called the "Iron mountain," which ſupplies the Portugueſe with great quantities of that metal, forged by the natives into a great variety of warlike and other uſeful implements. The inhabitants are plentifully furniſhed with water by the Rio Longo, and other ſmaller rivulets and lakes. Their trees are of a large ſize, and the bark being ſlaſhed with a knife, yields an odoriferous reſin, reſembling wax in colour and conſiſtency, and reckoned very medicinal. The avenue to the royal palace is decorated by a number of palm-trees that are very large and beautiful.

CABIAI, of Buffon, in *Zoology*, the thick-noſed Tapir of Pennant, the Sus Hydrochæris of Linnæus, and CAVIA CAPYBARA of Pallas, &c. which ſee.

CABIDOS, in *Commerce*. See CAVIDOS.

CABIGIAK, or CAPEHAK, in *Modern Hiſtory*, a tribe of Oriental Turks. Their origin is thus related. A female belonging to the army of Oghuz-Khan was delivered in the hollow of a tree to which ſhe entered; and the infant was adopted by Oghuz, and called "Cabigiak" or the bark of wood, from the manner of his birth. In proceſs of time his poſterity became numerous and extended themſelves to the north of the Caſpian ſea. They have retained the appellation of their anceſtor, and their country is denominated in Perſia and in Turkiſh "Deſcht Kiptchiak." From this country proceeded the armies which firſt ravaged the dominions poſſeſſed in Perſia by the Moguls; and they were the firſt troops which Bajazet the firſt ſultan of the Turks oppoſed to Tamerlan: but inſtead of fighting againſt Tamerlan, they took a part with him and united with the Tartars, whom they regarded as their brethren of one and the ſame origin. D'Herbelot, Bib. Or.

CABILAH, a tribe of independent and vagabond Arabs, under the conduct of a chief. Some Arabian writers reckon 80 of theſe tribes. D'Herbelot.

CABILIAU, in *Ichthyology*, a name by which ſome authors have called the common cod-fiſh, the *morhua* and *aſellus major* of other writers.

CABILLEN, in *Geography*, a town of the duchy of Courland; 10 miles E. of Goldingen.

CABIN, or **Cabbin**, is ſometmes uſed for the huts or cottages of ſavages, and other poor people.

The habitations of the Indians in Virginia are cabins, about nine or ten feet high, which are made after this manner: they fix poles into the ground, and bring the tops of them one within another, and ſo tie them together; the outſide of theſe poles they line with bark, to defend them from the injuries of the weather, but they leave a hole in the top, right in the middle of the cabin, for the ſmoke to go out; round the inſide of their cabins they have banks of earth caſt up, which ſerve inſtead of ſtools and beds. Phil. Tranſ. N° 126.

Cabin, a room or apartment in a ſhip, where any of the officers uſually reſide. There are many of theſe in a large ſhip; the principal of which is deſigned for the captain, or commander. In ſhips of the line, this chamber is furniſhed with an open gallery in the ſhip's ſtern, as alſo a little gallery on each quarter. The apartments in which the inferior officers and common ſailors ſleep and meſs, are uſually called *births*, which ſee. The bed-places built up for the ſailors at the ſhip's ſide in merchantmen, are alſo called cabins.

The word comes from the French *cabane*, Spaniſh *cabana*, or Italian *capanna*, *a little ſtraw hut;* and that from the Greek καπανη, a *ſtall* or *manger*.

Cabin *point*, in *Geography*, a ſmall poſt-town of America, in Surry county, Virginia, ſituate on Upper Chipoak creek, 26 miles E.S.E. of Peterſburg, 87 miles from Portſmouth, and 329 S.S.W. of Philadelphia.

CABINET, or **Cabbinet**, the moſt retired place in the fineſt apartment of a building; ſet apart for writing, ſtudying, or preſerving any thing very precious.

A complete apartment conſiſts of a hall, anti-chamber, chamber, and cabinet; with a gallery on one ſide.

Cabinet is ſometimes particularly uſed for a place at the end of a gallery, wherein are preſerved the paintings of the beſt maſters, conveniently ranged, and accompanied with buſts, and figures of marble and bronze, with other curioſities. In this ſenſe, cabinet amounts to the ſame with what is called by Vitruvius, *pinecotheca*. Sometimes there are ſeveral rooms deſtined for this uſe, which are all together called cabinet, or gallery.

Cabinet alſo denotes a kind of buffet or cheſt of drawers, partly for the preſervation of things of value, and partly as a decoration of a chamber, gallery, or other apartment.

Theſe cabinets are made of oak or of cheſnut, of inlaid work or japan, of ebony and of other ſcarce wood.

In the repoſitory of the Royal Society is a Chineſe cabinet, filled with the inſtruments and ſimples uſed by the ſurgeons of that country. The moſt remarkable are thoſe which are contrived for ſcratching, picking, and tickling the ears, in which the Chineſe take great pleaſure. Phil. Tranſ. N° 246. p. 390, ſeq.

Cabinet, in *Gardening*, is a little inſulated building in manner of a ſummer-houſe, built in ſome agreeable form, and open on all ſides; ſerving as a place of retirement, and to take the freſh air under cover.

According to Miller, a cabinet is a kind of ſaloon, placed at the end or in the middle of a long arbour.

It differs from an arbour, which is long, in form of a gallery, and arched over head; whereas the cabinet is either ſquare, circular, or in cants, making a kind of ſaloon.

Cabinet, in *Natural Hiſtory*. This term is applied with ſome latitude to any ſmall or ſelect collection of natural curioſities, without regarding whether the articles it compriſes be contained within a cabinet or not. Thus, for inſtance, it is not unfrequent with us to ſpeak of cabinets of animals, cabinets of birds, of fiſhes, reptiles, and other ſimilar articles, as a mode of expreſſing ſuch an aſſemblage of natural hiſtory as may not be of ſufficient importance to deſerve the epithet of a muſeum. The word cabinet in its uſual acceptation with the naturaliſt is not, therefore, confined ſolely to the boxes, preſs, or cheſt of drawers, in which articles of curioſity are contained, but implies at once both the repoſitory itſelf, and the articles arranged in it.

So much depends upon the fancy, taſte, or judgment of the collector in the formation, or, as it is ſometimes denominated, building, cabinets for the reception of articles of this deſcription, that no explicit directions can be given for this purpoſe with propriety. The moſt material object to be conſidered is the compactneſs of the drawers and cheſt, according to the ſize of the articles to be depoſited in them, in order to compriſe as much as convenient within the ſmalleſt compaſs in which they can lie without injury to each other, and at the ſame time be ſeen and examined with eaſe.

Cabinets of foſſils, ſhells, and corals have the drawers ſometimes divided for this purpoſe into ſmall compartments, by means of an inner frame work, that lets into the bottom of the drawer; but trays of various ſizes made either of card or paſteboard have a much neater appearance, and are preferred by many as being more commodious, and more eaſily ſhifted from one part of the drawer to another, as the addition of new acquiſitions in any particular tribe or genus may require. Nothing can be more deſirable than to have the cabinets well made, that the drawers may ſlide with perfect eaſe in their proper receſſes in the preſs. The drawers ſhould fit ſo cloſe, when ſhut up, as to preclude the entrance of duſt of any kind. The cabinet itſelf ſhould be alſo placed in a dry ſituation, as there are few articles of natural hiſtory that are not affected in a greater or leſs degree by an exceſs of damp, or even heat.

The conſtruction of an entomological cabinet depends leſs on the taſte of the collector, in the preſent day, than the preceding, except ſo far as relates to the elegance or external embelliſhment of the cabinet, or the excellence of the workmanſhip. The drawers are uniformly made ſhallow, the bottom of each is lined with cork, and the top is covered with glaſs, through which the inſect may be ſeen without being expoſed to the air, or accidents that would ariſe from their being touched by the incautious ſpectator.

Cabinets for inſects are built of various ſizes, from thoſe which contain ten or a dozen drawers to others that include above an hundred. They are uſually of mahogany, but it is immaterial whether they be made of mahogany or wainſcot; ſome have them of cedar, but ſeldom of deal, or any other wood of a ſoft texture. The drawers may be from fifteen to thirty inches in length, the ſame, or nearly the ſame in breadth, and about two or three inches in depth. The cork with which the bottoms are lined muſt be choſen as free from cracks and holes as poſſible; it ſhould be alſo glued into the drawers to prevent its warping, and be filed or cut very level; and after this the irregularities on the ſurface of the cork ſhould be rubbed down with pumice-ſtone, till the whole is rendered perfectly ſmooth, before the paper is paſted over it. The paper ſhould be of a fine ſmooth and even grain, but neither very ſtout, nor highly ſtiffened with ſize, leſt it ſhould turn the points of the pins, when placing the inſects in the drawers. The top of every drawer muſt be covered with a plate of glaſs, to prevent the admiſſion of duſt or air. This plate is uſually fitted into a frame of the ſame ſize as the drawer, and is made either to ſlide in a groove, or let in on a rabbet; the latter contrivance is much the beſt, becauſe in ſliding the glaſs along the groove, if any of the pins happen to ſtand ſo high as to touch the frame-work, the inſects will be injured by the jerk, or, as more frequently happens in this caſe, be broken to pieces. On the contrary, when the frame falls in upon a rabbet, it is of no conſequence whether the edge of the frame ſinks into the drawer below the level of the heads of the pins on which the inſects are placed or not; it is only neceſſary to obſerve, that the glaſs does not preſs upon the pins, ſince it is the glaſs only that can come in contact with them.

Inſtead of cork for the purpoſe of lining the bottom of the drawers for inſects, it was cuſtomary among old collectors to cover the bottom of them with a thin coat or layer of pitch, or green wax, over which the paper was ſometimes laid, and upon this the inſects were ſtuck. The diſadvantage of this method, although recommended by recent authority, is evident, when we conſider how liable both the pitch and wax are to be affected by the ſtate of the weather. An eminent collector, the late Mr. Tunſtal, had the whole of his inſects diſpoſed on green wax, each inſect being placed on a ſmall tablet of it, and the tablets afterwards affixed with a ſmall portion of melted wax to the bottom of the drawers. This cabinet was once removed to a ſhort diſtance in the country, during the winter ſeaſon, when, notwithſtanding the precaution of faſtening the tablets in this manner to the bottom of the drawers, ſome of them ſnapped aſunder with the cold, and rolling about among the reſt occaſioned the loſs of many valuable inſects. In another inſtance a celebrated collection of inſects, ſtuck on wax in a ſimilar manner, that had been preſented to a great public muſeum, was indiſcreetly expoſed to the heat of a briſk fire, with a deſign of warming the wax, that the pins might be more eaſily withdrawn, for the purpoſe of removing the inſects to another cabinet; but, ſad miſchance! the wax melting in a much ſhorter time than was expected, almoſt every inſect in the cabinet ſunk into the fluid maſs, and was deſtroyed. Accidents of this kind may operate as a caution to others, and prove, at leaſt, the ſuperior advantage of lining the bottoms of the drawers with cork inſtead of wax.

Every crevice in the drawers for inſects ſhould be carefully cloſed up. Indeed the entomologiſt, duly attentive to the preſervation of his inſects, will conceive no pains nor expence ill beſtowed in having his cabinet ſo well conſtructed as to render it impoſſible for the air or duſt to penetrate. A ſmall receſs ſhould be alſo made along the inner edge, or ſide of the drawer, for the admiſſion of a quantity of camphor, about one fourth part of an ounce of which in each drawer will preſerve the inſects contained in the drawer from the depredations of mites, or any other ſmall inſects, for years. It is an erroneous ſuppoſition, which many people entertain, that inſects cannot be preſerved; for it may be ſafely affirmed from experience, that if they are placed in a cloſe cabinet, as before directed, and the drawers occaſionally repleniſhed with freſh camphor every ſecond or third year, or at moſt every year, inſects are not more periſhable than almoſt any other deſcription of natural objects. They may be preſerved in this manner without injury or diminution of beauty for ten, twenty, or thirty years; we have ſeen inſects that have been collected at a period more remote ſtill, and which ſcarcely manifeſted any ſymptom of decay.

Some naturaliſts prefer cajeput oil for ſcenting the drawers to deſtroy the mites, and other deſtructive vermin, with which the inſects would otherwiſe, in time, become infeſted. Muſk is another powerful antidote and preſervative: and again the uſe of bitter aloes is ſtrongly recommended; but upon the whole, we are, for our own part, ſo fully ſatisfied of the efficacy of camphor, that we ſhould always conſider it preferable for this purpoſe to any other preſervative. It has been thought neceſſary by ſome, that the cork, with which the drawers are lined, ſhould be well impregnated with a ſolution of corroſive ſublimate mercury, in a ſaturated ſolution of crude ſal-ammoniac in water, (an ounce of which will be ſufficient to diſſolve twenty ſcruples of the ſublimate). This may be tried, ſince it has been ſtrongly adviſed, although we believe the precaution needleſs. Mr. Drury adopted another plan: he pounded a quantity of crude verdegreaſe with common bees-wax, and ſpread a thin layer of it between the bottom and the cork, in thoſe drawers which were deſigned for the reception of his more delicate inſects. We are, however, of opinion, that a ſolution of alum in water, waſhed either over the cork or paper of the drawer, would anſwer the ſame purpoſe, and be attended with leſs trouble. See article ENTOMOLOGY.

CABINET *of Medals.* See MEDALS.

CABINET is alſo uſed in ſpeaking of the more ſelect and ſecret councils of a prince or adminiſtration: thus we ſay, the ſecrets, the intrigues of a cabinet. To avoid the inconveniencies of a numerous council, the policy of Italy and practice of France have introduced cabinet councils; a remedy worſe than the diſeaſe. King Charles I. is charged with firſt eſtabliſhing this uſage in England. Beſides his privy council, that prince erected a kind of cabinet council, or junto, under the denomination of a council of ſtate; compoſed of archbiſhop Laud, the earl of Strafford, and lord Collington, with the ſecretaries of ſtate. Yet ſome pretend to find the ſubſtance of a cabinet council of much greater antiquity, and even allowed by parliament, who anciently ſettled a quorum of perſons moſt confided in, without whoſe preſence no arduous matter was to be determined; giving them power to act without conſulting the reſt of the council. As long ſince as the 28th of Henry III. a charter paſſed in affirmance of the ancient rights of the kingdom; which provided that four great men, choſen by common conſent, who were to be conſervators of the kingdom, among other things, ſhould ſee to the diſpoſing of monies given by parliament, and appropriated to particular uſes; and parliaments were to be ſummoned as they ſhould adviſe. But even of theſe four, any two made a quorum; and generally the chief juſtice of England and chancellor were of the number of the conſervators. Math. Par. 28 Henry III.

In the firſt of Hen. VI. the parliament provides, that the quorum for the privy council be ſix or four at leaſt; and that in all weighty conſiderations, the dukes of Bedford and Glouceſter, the king's uncles, ſhould be preſent; which ſeems to be erecting a cabinet by law.

CABIRA, afterwards called *Dioſpolis,* and ſince *Sebaſtopolis,* in *Ancient Geography,* a town of Pontus, ſouth-eaſt of Amaſia, upon the river Iris. Mithridates built a palace in this city, where he had alſo a fiſh-pond, and in its vicinity parks for chace, and, according to Strabo, mines. This city became memorable for the defeat of Mithridates by Lucullus. When Pompey took poſſeſſion of it, he gave it the name of "Dioſpolis," and the queen Pythodoris, widow of Polemon, named king of Pontus by Anthony, called it "Sebaſte," or "Sebaſtopolis," i. e. the city of Auguſtus, in honour of that prince.

CABIRI, in *Antiquity,* certain deities worſhipped more eſpecially by the Samothracians, and in the iſle of Imbros, and ſome other parts of Greece.

Theſe Cabiri were originally Syrians or Phœnicians; and we are chiefly indebted to the fragment of Sanchoniathon, recorded by Euſebius in his "Præparatio Evangelica," for the information, ſcanty and dubious as it is, which has been tranſmitted concerning them. From him we learn, that they were the ſons of Sydyc, and the ſame with the Dioſcuri, Corybantes, and Samothraces; that they firſt diſcovered the art of building ſhips; that from the time of Cronus (Saturn) their deſcendants navigated the ſea on rafts or veſſels of their own conſtruction; and that they landed on mount Caſius, where they conſecrated a temple. It is alſo related, that Cronus gave the city of Berytus to Neptune and the Cabiri. Sanchoniathon further ſays, that theſe ſons of Sydyc were eight in number; but he mentions only one of them by name, viz. Aſclepius, who was ſurnamed Eſſmunus, from שמן, *Saman*, ſignifying the eighth. He was the god of health, and reſtorer of life. Bochart ſuppoſes, that this Sydyc was Jupiter: Cumberland in his "Sanconiatho's Phenician Hiſtory," (p. 173, &c.) maintains, that he was Shem, the ſon of Noah; Shuckford ſuppoſes, (Connection, &c. vol. i. p. 213.) that he was Mizraim, the ſon of Ham, (Gen. x. 6.) or Menes, who ſettled in Egypt about the 15th year of Nimrod, A.M. 1772, according to him, or 2188 B.C. according to Blair's Tables. According to Pauſanias (l. ix. p. 751.) the original Cabiritic divinity was Prometheus. The learned Bryant (Analyſis of Anc. Myth. vol. ii. p. 460.) concurs with thoſe who are of opinion, that Sydyc, or Sadic, was the patriarch Noah, and that the name by which he is called, or Sadic, correſponds to the character given of him in the book of Geneſis, ch. vi. 9. He was צדיק, Sadic, a juſt man and perfect in his generation. All ſcience, and every uſeful art were attributed to him; and through his ſons they were tranſmitted to poſterity. He ſuppoſes that the Cabiri were the ſame with the Curetes, Corybantes, Telchines, and the Idæi Dactyli of Crete. However, in treating of them, great confuſion has ariſen from not conſidering that both the deity and prieſt were comprehended under the ſame title. Hence it has happened, that the appellation of Cabiri has been uſed by the ancients indifferently, to ſignify the gods in whoſe honour certain myſteries were inſtituted, the inſtitutors of theſe myſteries, and the principal hierophants who officiated in them. From the account that has been already given from Sanchoniathon of the origin of the Cabirian deities, it is reaſonable to imagine, that they were perſons eminently diſtinguiſhed for their exploits, and for the invention of arts uſeful to mankind; and that on this account they were deified by the Phœnicians; and we may eaſily conceive, that the navigators who firſt paſſed from Phœnicia into Greece introduced there the worſhip which they had rendered to the Cabiri, as the inventors of navigation. To this purpoſe Diodorus Siculus very juſtly obſerves, (lib. i. p. 14.) that the Greeks worſhipped for their gods ſome heroes and great men, that had formerly been famous in Egypt, whoſe lives, or at leaſt ſhort memoirs of them, had been written at firſt in a plain and ſimple manner; but ſucceeding writers embelliſhed the accounts given of them, by intermixing with them various fictions. Diodorus aſcribes to the Cabiri the invention of fire, and the art of manufacturing iron. Hence it is, that on a medal of Gordian, and another of Furia Sabina Tranquillina, both ſtruck at Carrhæ, where the Cabiri were worſhipped, we find the figure of a Cabirus on a column, holding a hammer in his right hand. For the ſame reaſon, Herodotus (l. iii.) obſerves, they were repreſented like Vulcan. We need not wonder, if we conſider the various uſeful arts that were aſcribed to theſe deified perſons, that they ſhould be ſo generally honoured. The Phœnicians, Syrians, Egyptians, Greeks, Cypriots, Phrygians, Etruſcans, Latins, Carthaginians, and almoſt all the ancient Pagans, manifeſted the moſt profound veneration for the Cabiric myſteries. The name by which they are called denotes the high eſtimation in which they were held; for, inſtead of deriving it, as ſome have done, from the nymph Cabira, or from mount Cabirus in Phrygia, its etymology may more probably be ſought in the Hebrew, or Phœnician language, in which, the word "Cabir" denotes great and powerful; and accordingly, they are deſcribed by Caſſius Hermina (ſee Macrob. Sat. l. iii. c. 4. p. 376.) as "the great, beneficent, and powerful gods."

We have already obſerved, that the honours they received ſeem to have originated with the Phœnicians, and by their navigators the worſhip of theſe deities was introduced into the iſland of Samothrace, where they landed before they paſſed over to the continent. At Memphis, in Egypt, they had a famous temple, which was held ſo ſacred, according to Herodotus (l. iii. c. 37.), that no perſon, excepting the prieſts, was ſuffered to enter within its walls. In ſeveral cities of Syria the worſhip of theſe deities prevailed. At Cabira in Pontus, they had one of the moſt magnificent temples in the world. In Phrygia alſo, and Cilicia, there are evident traces of the ſame kind of worſhip. The Cabiritic rites were alſo practiſed at Imbros and Lemnos; and they prevailed likewiſe in Greece, and particularly at Theba, in Bœotia: and as their chief province related to the ſea and ſhipping, they were more eſpecially implored by mariners for ſucceſs in their voyages. When the worſhip of the Cabiri was introduced from Phœnicia, or Egypt, into Greece, it underwent various modifications and changes, as the Greeks were too proud to acknowledge themſelves indebted, even for their ſuperſtition, to ſtrangers. Accordingly, they altered the names of their gods, and diſguiſed their origin. By ſome of the Greek writers, they are repreſented as the ſons of Jupiter and Calliope; by others, as the ſons of Jupiter and Electra, or of Jupiter and Leda. Some refer Jupiter himſelf, and Bacchus, to the claſs of Cabiri; and others ſay they were the ſons of the Sun and Minerva: others pretend that their mother was the nymph Cabira, the daughter of Proteus, and their father, Vulcan; and it is thought, that one of their ſons is repreſented on the medals of Theſſalonica, under the name of CABEIPOC, holding in one hand a hammer, ſuch as Vulcan is repreſented with on the ancient monuments, and dreſſed, like him, with a cap on the head. The worſhip of Vulcan and his ſons was eſtabliſhed in Egypt, in the iſles of Lemnos, and in other places, where they were honoured under the name of Cabiri, for having invented corn and the manufacture of it. As for particular names which the Greeks gave to the Cabiri, thoſe which moſt frequently occur are Caſtor and Pollux, the ſons of Jupiter and Leda These Grecian gods were repreſented as Cabirian deities on ſome of the Greek medals of Marcus Aurelius and Lucius Verus. Theſe were alſo known by the names of Jaſion and Dardanus, the ſons of Jupiter and Electra; and alſo by thoſe of Alcon and Eurimedon, the ſons of Vulcan and Cabira, to whom is aſcribed a ſon called Camillus, or Cadmillus, *i. e.* Mercury. According to Cicero, three others, called Tritopacreus, Eubuleus, and Dionyſius, were the ſons of Jupiter and Proſerpine. Mnaſeas, a Phœnician author, has, according to Joſephus, mentioned three others; viz. Axieros, ſaid by ſome to be Ceres, and by others Jupiter; Axiocherſa, or Proſerpine; and Axiocherſos, or Pluto.

The nature of the myſteries of the Cabiri, and the rites of which they conſiſted, are not aſcertained. They were diſcloſed only to the initiated, and penalties were annexed to the crime of divulging them. The myſteries of Ceres Cabiria in Bœotia were the ſame with thoſe of the Cabiri in Samothrace: and it has been ſaid by Clemens Alexandrinus, in ſpeaking of the worſhip of theſe deities among the Etruſcans, that they were kept ſecret under a penalty, on account of the infamy that attended them. The Pelaſgi, Samothracians,

mothracians, and others, celebrated them in the night, and, as it is related, with great indecency; and to this circumſtance it is owing, that they have tranſmitted no written account of them to poſterity. The "phallus" is ſaid to have been one of their ſymbols in the Cabirian myſteries of Samothrace. M. de St. Croix in his "Memoirs concerning the ſacred Religion of ancient Nations," (Paris, 1784), ſuggeſts, that the origin of the uſe of this ſymbol was as follows. Cadmillus, the youngeſt of the Cabiri, having been killed by two of his brothers, who cut off his privities and fled to mount Olympus, where they buried them; this Cabiri's death was commemorated by that ſymbol, and by many various expreſſions of grief on the part of the initiated. This author, combining the above relation of Herodotus with a paſſage in Pauſanias, where the myſteries of the Cabiri are ſaid to have been founded on a "preſent that was made to them by Ceres" concludes, that this "preſent," which Pauſanias did not dare to ſpecify, was no more than the obſcure repreſentation of the mutilated parts of Cadmillus; and this, he adds, was the venerable object that was committed to the cuſtody of the Veſtals in after-times, as a ſacred pledge of the ſafety of Rome, whither the Samothracian prieſts, who took refuge in Italy, carried the religious rites and myſteries of the Cabiri. Whether this account be true or not, it is certain that the "phallus" was introduced under one form or name or another into the religious myſteries of ancient nations, and that the celebration of theſe myſteries was accompanied with many indecorous rites. Under the appellation of Cabiri, the ancients comprehended divinities of each ſex, of all ages, of every rank and condition, celeſtial, terreſtrial, maritime, and infernal, to which they appropriated various attributes. To ſome of the Cabiri, who were the inventors of navigation, they aſcribed the diſcovery of iron; to others, the origin of laws, letters, and writing; and to others again the diſcovery of various modes of incantation and magic, the medical uſe of plants, &c. &c. The worſhip that was paid to them in different places referred more directly or indirectly to thoſe ſeveral attributes. Such was the eſtimation in which theſe deities were held in the remote ages of antiquity, and afterwards by the Greeks under various appellations, by which they were diſtinguiſhed, that princes and perſons of rank reſorted to Samothrace in order to be initiated into their myſteries. Accordingly, we find that Cadmus, Orpheus, Hercules, Caſtor and Pollux, Ulyſſes, and other heroes of the Trojan war, Philip the father of Alexander, and many others, made a voyage to this iſland, probably, under a notion that they might derive ſuccour from the Cabirian deities in tempeſts and perilous voyages. Such was the veneration in which the Cabiri were held in the iſland of Samothrace, that it was thought an act of irreverence even to pronounce their names. Thoſe who were admitted to the ſacred ceremonies performed in honour of theſe deities uſed to aſſemble in a wood, which became a place of refuge for offenders, and was more reſpected than even the temple of Delphi or the iſland of Delos. To this iſland, Perſes, king of Macedon, fled for refuge, and took up his habitation in a temple of Caſtor and Pollux, hoping that the Romans would not profane a ſanctuary revered by all the nations of the world; and, indeed, the Romans did not make any attempt upon his life or perſon ſo long as he continued there. Of all the oaths that were in uſe among the ancients, that by the gods of Samothrace was deemed the moſt ſacred and inviolable. Thoſe who were found to have falſified this oath, were looked upon as the curſe of mankind, and perſons devoted to deſtruction. Of courſe, theſe myſteries were highly reſpected, and care was taken that they ſhould not be revealed. With this view, the prieſts had a language peculiar to themſelves, which was not underſtood by the people. The Corybantes were the miniſters of theſe myſteries, not only at Lemnos and Imbros, but through the whole of Phrygia. For a more ample account of the various opinions of the fabulous ages, with regard to the names, origin, number, attributes, myſteries, and worſhip of the Cabiri, the reader, who is deſirous of further information, may conſult the writings of Clemens Alexandrinus, and Bochart. See CERES, ELEUSIS, and MYSTERIES. See alſo CORYBANTES, CURETES, and DIOSCURI.

CABIRI is alſo uſed to denote the *Gabri*, or Perſian *fire-worſhippers*. Hyde de Rel. Perſarum, cap. 29. See GABRES.

CABIRI, in *Ancient Geography*, a people who inhabited the vicinity of mount Ida. Strabo ſays, that in his time, many ſuppoſed them to be the ſame with the Curetes. See CABIRI, *ſupra*.

CABIRIA, in *Mythology*, a ſurname of Ceres, who was the principal Cabirian deity: ſhe had a ſacred grove under this name in Bœotia.

CABIRIA, Καϐειϱια, religious feaſts inſtituted in honour of the gods *Cabiri*. They were celebrated at firſt at Lemnos, afterwards adopted by the inhabitants of the iſlands of Samothrace and Imbros, and from thence paſſed into Greece to Athens, and particularly to Thebes, where they became famous.

Theſe feaſts were very ancient, and prior even to the time of Jupiter; who is ſaid to have reſtored them: they were held by night. Children above a certain age were here conſecrated; which conſecration was ſuppoſed to be a preſervative againſt all dangers of the ſea, &c.

The ceremony of conſecration called ϑϱονωσις, or ϑϱονισμος, q. d. *enthronizing*, conſiſted in placing the initiated youth on a throne, the prieſts dancing round him: the badges of the initiated were a purple girdle or ſcarf, and a crown of olive. When a perſon had committed any murder, the cabiria gave him an aſylum.—Meurſius is very particular in the proof of each of theſe points.

CABIRIDES, nymphs, who were the daughters of Vulcan and Cabira.

CABIRUS, in *Ancient Geography*, a mountain of Aſia Minor, in Phrygia.—Alſo, a river of Aſia, in the territory of the Suerii, at the mouth of which was good anchorage. Pliny.

CABISTRA, a town of Cappadocia, mentioned by Cicero in his Letters, lib. xv. Epiſt. 11. ad Senat. & ad Attic. lib. v. Epiſt. 18.

CABLE, in *Navigation*, a thick, long, three-ſtrand rope, ordinarily of hemp, ſerving to hold ſhips firm at anchor, and to tow veſſels in large rivers. In Europe, the cables are commonly made of hemp; in Africa, of long ſtraw, or ruſhes called *baſs*; and in Aſia, of a peculiar kind of Indian graſs.

The word cable comes from the Hebrew word *chebel*, cord. Du-Cange derives it from the Arabic, *habl*, cord, or *habala*, vincire: Menage, from *capulum*, or *cabulum*; and that from the Greek καμηλος, or the Latin *camelus*.

The term cable is ſometimes alſo applied to the cordage uſed to raiſe maſſy loads, by means of cranes, wheels, and other like engines; though in ſtrictneſs, cable is not to be applied to ropes of leſs than three inches in circumference. Every cable, of whatever thickneſs it be, is compoſed of three ſtrands; each ſtrand of three twiſts; and each twiſt of a certain number of caburns, or threads of rope yarn, more or leſs, as the cable is to be thicker or ſmaller.

Every merchant-veſſel, how ſmall ſoever, has three cables; viz. the main or maſter-cable, which is that of the chief anchor, called the ſheet-cable: and the two bowers, beſt and ſmall. The ordinary length of the great cable is 120 fathoms or braces.

To make a cable; after forming the ſtrands, they uſe ſtaves: which they firſt paſs between the ſtrands that they may turn the better, and be intertwiſted the more regularly together. And to prevent any entangling, a weight is hung at the end of each ſtrand. The cable, being properly twiſted, neither too much, ſo as to become ſtiff, nor too little, ſo as to be weakened, is untwiſted again three or four turns, that the reſt may the better retain its ſtate. The uſual allowance for the diminution of length by twiſting, is one-third of the whole; ſo that for a cable of 120 fathoms, the rope-yarn muſt be 180 fathoms long.

The number of threads which each kind of cable is to be compoſed of, is always proportioned to its length and thickneſs; and it is by this number of threads that its weight and value are aſcertained. Suppoſing, then, the lengths to be equal the number of threads and the weights will be as the areas of their baſes, or, which comes to the ſame, as the ſquares of their circumferences. Having then the weight and number of threads of any one cable, we may eaſily calculate the following table. See Aubin's Marine Dictionary.)

Circumference.	Threads.	Weight.
3 Inches	48	192 Pounds
4	77	308
5	121	484
6	174	696
7	238	952
8	311	1244
9	393	1572
10	485	1940
11	598	2392
12	699	2796
13	821	3284
14	952	3808
15	1093	4372
16	1244	4976
17	1404	5616
18	1575	6296
19	1754	7016
20	1943	7772

Several ſalutary laws reſpecting the manufacture of cables have been made in the reign of his preſent majeſty, Geo. III. See 25 Geo. III. c. 56. It has alſo been enacted, that commanders of veſſels belonging to Britiſh ſubjects, having on board foreign made cordage, ſhall make entry thereof at their arrival into any Britiſh port; and the maſter making default herein, all ſuch foreign cordage as ſhall be on board ſhall be forfeited to his majeſty; and ſhall for every ſuch offence forfeit the ſum of 20 s. for every hundred weight thereof.

In the French marine, the circumference of the largeſt cable is one twenty-fourth part of the extreme breadth of the ſhip; or half the breadth in feet will be the circumference in inches. Thus, the circumference of the largeſt cable of a ſhip, whoſe extreme breadth is 32 feet, will be 16 inches. The length of a cable is 120 fathoms, each 5 French feet. The weight of one fathom of cable in French pounds is nearly equal to one-tenth of twice the ſquare of the circumference; and, conſequently, the weight of a whole cable will be nearly equal to twenty-four times the ſquare of the circumference. The weight of an anchor is half the weight of the cable to which it belongs.

Cable, *bit the.* See Bits.

Cables, *Bower*, thoſe belonging to the beſt and ſmall bower anchors, and are named accordingly.

Cable, *clinch a*, is to run it through the hawſe-hole and the ring of the anchor, three or four fathoms in length; then haul the bight up in the head, and paſs the end of the cable over the bight, and through the ring between it and its own part; then paſs the cable bends, and croſs them with ſtrands, well greaſed, one at the end, and the other about one foot from the end; and be careful not to form the clinch larger than the ring of the anchor.

Cable, *coil the*, to make it up in a circular or elliptical form, for the convenience of ſtowing it; each complete round or turn of the cable is called a *fake*, and one range of fakes along-ſide of each other is called a *tier*. There are generally from five to ſeven fakes in a tier, and three or four tiers in the whole length of a cable; but this depends on the length of a fake, and the number contained in a tier. Several authors, and particularly Meſſrs. Hutchinſon and Gower, have recommended that all cables ſhould be coiled the ſame way they bit, or the way they run round the windlaſs, and their tiers ſhould be on the ſide oppoſite to that on which they lead. The beſt bower, which is in general the working cable, ſhould lead foremoſt up the hatchway, then the ſmall bower, and, abaft all, the ſheet, which, being the leaſt wanted, can be made up ſnug round the fore part of the hatchway, out of the way. Should new cables come immediately from the rope-walk, let them be coiled down into the craft that is to bring them on board the ſame way they are to be coiled on board. A cable generally kinks from more turns being forced into it by the coiling than it naturally had; the kinks may, however, be avoided, either by coiling the cable againſt the ſun, or with the ſun, and the end taken through the coil, and the cable coiled down in the tier the way required. It ſhould be a rule, in coiling cables, never to lay out near the hatchway, but to keep that part of the tier as low as poſſible, that the bends may have ſufficient room to upſet. Were all cables firſt coiled down from the rope-walk againſt the ſun, they would be better adapted to coil on either ſide of a ſhip, for a cable coiled againſt the ſun, will more eaſily reverſe, and have leſs kinks in it than a cable coiled with the ſun.

Cable, *cut the.* When a ſhip is riding at anchor in an open bay or road-ſtead in a gale of wind, it many times becomes neceſſary, for the preſervation of the ſhip and crew, to cut the cable with a hatchet at the hawſe-holes or at the bits, when it cannot be purchaſed, and ſtand out to ſea, under any convenient ſail that it may be poſſible to ſet. This may be alſo neceſſary when compelled to fly from or purſue an enemy. If a ſhip parted her cable, the inſurance would be loſt. See *Slip the* Cable.

Cable, *elaſtic.* See Coir.

Cable-*laid*, any rope laid in the ſame manner as a cable.

Cable's *length*, is 120 fathoms, each 6 feet. The diſtance between two adjacent ſhips of war, when formed into the line of battle, is appointed to be one or more cables' length, according to circumſtances. The method of keeping the ſhip in its proper poſition with reſpect to the one next a head, is to calculate the angle which the whole or any particular portion of the main-maſt of that ſhip would ſubtend at a propoſed diſtance. Then if the angle obſerved by a quadrant is the ſame as that by calculation, the ſhip is in her proper ſtation; if greater, ſhe is too far a-head, and therefore ſome ſail muſt be taken in; but if leſs, the ſhip is too far aſtern, and more ſail muſt be ſet in order to regain her ſtation. If the main top-gallant truck be brought to coincide with a mark, the ſame height above the water as the obſerver, this angle is found as follows: from the logarithm of the given height, its index being increaſed by 10, ſubtract the logarithm of the aſſigned diſtance, the remainder will be the log. tangent of the required angle. But if there is no fixed mark, and in that caſe the angle ſubtended by the diſtance between the truck and the water is to be obſerved, the meaſure of this angle may be found by calculation as follows: from the height of the truck above the water ſubtract the height of the obſerver; from the log. of the remainder, its index being increaſed by 10, ſubtract the log. of the diſtance, the remainder will be the log. tangent of an arch; and from the log. of the height of the obſerver, its index increaſed by 10, ſubtract that of the diſtance, the remainder will be the log. tangent of an arch; the ſum of theſe two arches will be the angle required.

Example. Let the aſſigned diſtance between two adjacent ſhips be one cable's length or 720 feet, the height of the main-top-gallant truck of the ſhip a-head above the water 190 feet, and the height of the obſerver's eye 24 feet; required the angle ſubtended by the maſt?

Height truck	190				
Height obſerver	24				log. 1.38021
Difference	166	log. 2.22011			
Diſtance	720	log. 2.85733			2.85733
Arch		tangent 9.36278	12°	59′	
			1	55	8.52288
		Angle required	14	54	

See alſo Dr. Mackay's Navigation, p. 224.

Cable, *link worming of a*, is an operation performed for preſerving it in rocky and ſtony ground, or defending it againſt ice. For this purpoſe chains are twiſted round cables in the following manner. Take three chains, each about 15 fathoms in length, and all of an equal ſize, and in thickneſs proportioned to the purpoſe to which they are adapted. Let theſe be wound round the cable, ſo that they may project ſufficiently to ſuſtain the greateſt part of the friction, one end of them being faſtened to the ring of the anchor, and each chain being from thence wormed round its reſpective hollow or channel of the cable, ſo as not to prevent its ſtretching. Faſten the other ends of the chain to the cable. The chains need not be very heavy: but the links ſhould be ſhort, becauſe they will thus be more pliant, and worm more eaſily. Theſe chains will effectually guard the cable againſt the chafing of the rocks, and they may be put on in a few minutes, ſo that it is not neceſſary to have them fitted on but when they are likely to be ſerviceable. As the weight of the three chains, even for a large cable, will not exceed 500 pounds, the only remaining difficulty is that which ariſes from the ſmallneſs of the hawſe-holes; in order to obviate this, the holes may be enlarged; and with the additional aid of a boy or ſpare man at the head of the veſſel, to caſt off the chains as they come up, and hand them in above, every inconvenience will be removed. But if it ſhould require a few minutes more to weigh an anchor ſo ſecured than a common one, this can be no argument againſt a meaſure that tends to preſerve and enſure the ſafety of the veſſel and of the ſhip's company. In high latitudes, where ice may cut or damage the cables, while riding at anchor, the uſe of three other chains ſuch as the preceding, but not more than five or ſix fathoms in length may be recommended. Theſe may be wormed round the cables in the ſame manner at the ſurface of the water, and will be an excellent means of guarding them from the preſſure of the ice ſo as to prevent its either wounding them or chafing them quite aſunder.

Cable, *heave in the*, the order to draw it into the ſhip by means of the windlaſs or capſtan.

Cable, *pay away*, *veer*, *or give out more*, that is to ſlacken the cable that it may run out of the ſhip.

Cable, *ſerve the*, is to bind it round with ropes, old canvas, leather, or other materials, to prevent it from being galled or fretted in the hawſe by friction. A piece of tanned horſe-hide, big enough to be wrapped two or three times round the cable, has been recommended as the beſt kind of ſervice to prevent it from chafing or fretting in a ſtorm: this ſervice is alſo eaſily put on and taken off. The method of putting it on the cable is firſt to wrap two or three folds of old canvas, the length of the leather-ſervice, which if too ſtiff to put on dry, requires only to be dipped in water, and beat againſt any wood, which will make it ſoft and pliable. Then wrap it as tight as poſſible upon the old canvas round the cable, tying it tight and ſmooth on with ſennit, or three-yarn nittles, made for that purpoſe, greaſing them and the ſervice very well before veering it into the hawſe-hole. It may be obſerved that all cables ſhould be ſerved againſt the lay.

Cable, *ſheet-anchor*, the largeſt cable belonging to a ſhip.

Cable, *ſhot of the*. See Shot.

Cable, *ſplice a*, is to join or connect two pieces of cable, or two cables together, by interweaving their ſtrands. The ſnuggeſt and beſt method of ſplicing a cable, is to put the ends in twice each way; then to pick out the ſtrands, and worm part of them round the cable, and taper away the reſt, which let be ſnuggly marled down. After this, let there be clapped on a good throat, and two end ſeizings of ſix thread ratline. The ſtrands of the ſmall bower and ſtream cables had better be pointed, that theſe cables may be more briſkly ſpliced in caſe of neceſſity.

Cable, *ſlip the*, is to let it run quite out, when there is not time to weigh the anchor. Slipping the cable, if time will permit, is preferable to cutting it, as the anchor and cable are thus preſerved. Before it is either cut or ſlipped, a ſpare buoy-rope ſhould be paſſed through the hawſe-hole, and faſtened near the end with a rolling-hitch; the end ſhould be wormed in the cunt-line and ſtopped, that it may be eaſily regained.

Cable, *ſtowing the*. See Stowing.

Cable, *ſtream*, a hawſer or rope a little ſmaller than the bower cables, uſed to moor a ſhip in a river or haven, which is ſheltered from the wind and ſea.

Cable *tier*, the hollow ſpace in the middle of a cable when it is coiled.

Cable *Iſland*, in *Geography*, a ſmall rocky iſland, the reſort of ſea-fowl, on the ſouthern coaſt of Ireland, forming the ſouth-weſtern point of Youghal bay. On the north ſide of it is good anchorage. W. long. 7° 51′. N. lat. 51° 53′.

CABLED, in *Heraldry*, is applied to a croſs formed of the two ends of a ſhip's cable: ſometimes alſo to a croſs covered over with rounds of rope; more properly called a croſs corded.

CABLET, in *Sea Language*, denotes any cable-laid rope under nine inches in circumference. Cablets uſed for tow lines or hawſers, require the ſtrands to be laid ſhorter than cable ſtrands, but not ſo ſhort-laid in cloſing; for, being uſed in water, they would become ſtiff, hard, unhandy to coil away, and liable to break in cold weather. Yarn for ropes of this ſort ſhould be finer than for cables, and ſpun to run from 18 to 20 threads to three inches in circumference. It ſhould not be much tarred, as the tar would ooze out and the ſtrands kink.

CABLIAU of *Strœm. söndm*, in *Ichthyology*, the common cod-fiſh, GADUS MORHUA of modern naturaliſts. In the *Linn. Fn. Suec.* it is called CABBLIA.

CABLING, in *Architecture*, the figure of a ſtaff, or reed, either plain or carved, in reſemblance of a rope, or a ruſh, wherewith a third part of the flutings of a column are ſometimes filled up; hence called *cabled flutings*.

There are alſo *cablings* in relievo without fluting, eſpecially on certain pilaſters, as in the church of Sapienza at Rome. See FLUTES.

CABLISH, *Cablicia*, in the *Foreſt Law*, denotes bruſh, or browſe-wood; though Spelman takes it more properly to ſignify trees or branches, thrown down by the wind; from the French *chablis*, or *bois chablis*, which denotes the ſame.

CABO, in *Geography*, a kingdom of Africa, in Nigritia, ſituate to the ſouth of the Rio Grande, and near the ſource of the Caſamanka, about 150 leagues from its mouth. Little is known concerning it; but ſome voyagers aſſert that the king is rich and powerful, and that in time of peace he keeps 7000 men well armed, in order to command due reſpect from his neighbours.

CABO *Corſo*, or *Cape-Coaſt*, a cape and factory of Africa, on the Gold coaſt. N. lat. 5° 16′. W. long. 2° 8′.

CABO *de Cruz*, a bold point of land on the ſouth ſide of the iſland of Cuba. N. lat. 19° 37′. W. long. 78° 28′.

CABO *de St. Juan*, the north-eaſternmoſt point of the iſland of Porto Rico. N. lat. 18° 30′.

CABOCHED, CABOSHED, or CABOSSED, formed from the obſolete French *caboche*, from *caput*, head, in *Heraldry*, is where the head of a beaſt is cut off behind the ears, by a ſection parallel to the face; or by a perpendicular ſection: in contradiſtinction to couped, which is done by a horizontal line; beſides that it is farther from the ears than *caboſſing*. The head in this caſe is placed full-faced, or affrontée, ſo that no part of the neck is viſible. This bearing is by ſome called *Trunked*.

CABOCHON, in *Conchology*, the name given by Argenville to the Linnæan PATELLA EQUESTRIS; which ſee.

CABOCLES, in *Modern Hiſtory*, a name given in the Weſt Indies by the Portugueſe to thoſe produced between Americans and Negroes.

CABOLITÆ, in *Ancient Geography*, a people of Aſia placed by Ptolemy in Paropamiſus.

CABOMBA, in *Botany*. See NECTRIS.

CABOT, SEBASTIAN, in *Biography*, an eminent navigator, the ſon of a Venetian pilot diſtinguiſhed by his ſkill in the ſame art, and often reſident in England, was born at Briſtol about the year 1477, and inſtructed by his father in thoſe branches of mathematical ſcience which were neceſſary for forming a ſkilful ſeaman. Before he had attained the age of 17 years, he made many trips to ſea; thus adding an acquaintance with the practical part of navigation to the knowledge of its theory. In his firſt voyage of any importance, he accompanied his father for the diſcovery of unknown lands, and particularly for exploring a north-weſt paſſage to the Eaſt Indies. John Cabot, encouraged in this attempt by the diſcoveries of Columbus, who returned from his firſt expedition in 1493, obtained, in 1495, letters patent from king Henry VII. empowering him and his three ſons to diſcover, conquer, and ſettle lands then unknown, in recompence of which they were to be inveſted with many privileges. The king, however, reſerved to himſelf one-fifth part of the neat profits, and reſtricted them to return from their voyage into the port of Briſtol. Accordingly in the following year he prepared for his expedition, and obtained the king's permiſſion to take up ſix ſhips of 200 tons burden and under, in any harbour of the realm, and to engage a ſufficient number of mariners. His majeſty was at the expence of fitting one ſhip at Briſtol, and the merchants of that city and of London added three or four ſmall veſſels, freighted with ſuitable commodities. With this fleet John Cabot and his ſon Sebaſtian ſet ſail in the Spring of 1497, and purſued their courſe till the 24th of June, when they diſcovered the iſland of "Baccalaos," ſo called from the fiſh which they found in great abundance on its coaſt, but now known by the name of Newfoundland. Another adjoining iſland they called St. John, probably from the Saint's day on which it was diſcovered. On this iſland, as they ſuppoſed it to be, which was the ſouth-weſt part of Newfoundland, they found inhabitants who were cloathed with the ſkins of beaſts, and who uſed bows, arrows, pikes, darts, wooden clubs, and ſlings. Three of theſe natives were brought with them to England. It is ſuppoſed, however, that Sebaſtian had made ſome voyages of diſcovery in the reign of Henry VII. without his father; and that in ſome of theſe he ſailed as far north as 67° and a half, but was prevented from proceeding farther by the mutiny of his ſailors. After the diſcovery of Newfoundland, Cabot and his ſon ſailed down to Cape Florida; and on their return to England they were well received, as they were the firſt navigators who had actually ſeen the continent of America; Columbus not having obſerved it till the following year. During the ſucceeding period of 20 years, there is a chaſm in the hiſtory of Sebaſtian's tranſactions; nor is it certain when or where his father died, though he probably terminated his life in England, to which he appears to have been much attached. In the 8th year of the reign of king Henry VIII. we find that Sebaſtian Cabot had formed an intimate connection with ſir Thomas Pert, then vice-admiral of England; and that he had obtained by his intereſt with the king, a good ſhip for the purpoſe of proſecuting his diſcoveries. It ſeems to have been at this time his intention to have ſailed by the ſouth to the Eaſt Indies, and with this view he ſailed firſt to Brazil; but diſappointed in his purpoſe through the timidity of his coadjutor, ſir Thomas Pert, as Hakluyt aſſerts, he directed his courſe to the iſlands of Hiſpaniola and Porto Rico, and having trafficked here for ſome time, he returned to England. Thus diſappointed in his views, he left England and removed to Spain, where he was very reſpectfully received and appointed pilot-major, for the purpoſe of reviewing all projects of diſcovery, which were, at that period, numerous and important. In the year 1524, many opulent merchants entered into a treaty with him, and engaged to defray the charges of an expedition to the Moluccas, or Spice iſlands, by the new-found paſſage of Magellan. Accordingly he ſet ſail from Cadiz with four ſhips, in April 1525; and proceeded firſt to the Canaries, then to the Cape Verd iſlands, and afterwards to Cape St. Auguſtine, and to the iſland of Patos, or Geeſe. At the bay of ALL SAINTS he was liberally ſupplied with proviſions, for which he made a very ungrateful return by forcibly carrying away four ſons of the principal perſons of the iſland. He then proceeded to the river La Plata, and landed on a deſert iſland Martin Mendez, his vice-admiral, captain Francis de Rojas, and Michael de Rojas, where he left them becauſe they had cenſured his conduct. Being prevented by a mutiny among his men and by ſcarcity of proviſions from proſecuting his voyage to the Spice Iſlands, he ſailed about 30 leagues up the river La Plata, and found an iſland which he called St. Gabriel, about a league in compaſs and half a league from the continent towards Brazil; and having diſcovered about three leagues higher a river which he named St. Salvador, and which, being very deep, afforded a good harbour, he brought up his veſſels and unloaded them. Here he built a fort; and advancing with boats 30 leagues higher, he found another river, called Zarcarana, and conſtructed on the banks of it, as the inhabitants were intelligent and not unfriendly, another fort, called by himſelf Santi Spiritus, or of the Holy Ghoſt, and by his followers Cabot's fort. He afterwards diſcovered the ſhores of the river Parana, with ſeveral iſlands and rivers, and at length arrived at the river Paraguay, where he found people tilling the ground; a circumſtance which had not before occurred to him in that part of the world. In a conflict with the Indians, by whom he was oppoſed, he killed many of them, but 25 of his own men were ſlain, and three taken priſoners. During this winter he fell in with James Garcia, who had been diſpatched from Galicia for the purpoſe of making diſcoveries, and having returned together to the fort of the Holy Ghoſt, they ſent meſſengers to Spain. The two perſons that were deputed by Cabot gave a very favourable account of the countries adjoining to the river La Plata which he had ſubdued, and produced gold, ſilver, and other valuable commodities, as teſtimonies to their commander's good conduct. At the ſame time they demanded a ſupply of proviſions and ammunition, as well as other articles adapted to the purpoſes of commerce, together with a recruit of ſeamen and ſoldiers. The merchants, however, who had fitted out Cabot's ſquadron, were unwilling to comply with theſe requiſitions, and choſe to ſurrender their rights to the crown of Caſtile. But the king delayed the neceſſary preparations ſo long, that Cabot, who had been five years employed in this expedition, and who was tired with waiting for neneſſary ſupplies, determined to return home. Accordingly he embarked his men and effects on board the largeſt of his ſhips, leaving the reſt behind him; and arrived at the Spaniſh court in the ſpring of the year 1531. In the mean while prejudices had been excited againſt him, on account of the rigour with which he had treated the Spaniſh mutineers, and becauſe he had not proceeded to the Moluccas; ſo that his reception was not favourable. However, he retained his place, and continued in the ſervice of Spain for many years: till at length, for reaſons with which we are not acquainted, he reſolved to return to England. This took place towards the latter end of the reign of Henry VIII. at which time he reſided at Briſtol. In the commencement of the following reign he was introduced firſt to the protector, lord Somerſet, and by him to king Edward VI. who took great pleaſure in his converſation, and granted him, in 1549, a penſion of 166l. 13s. 4d. a year; an annuity which was allowed him, according to Hakluyt, as grand pilot of England. From this time he was highly favoured by the king, and conſulted upon all commercial matters. In May 1552, the king granted a licence, together with letters of ſafe conduct, to ſuch perſons as were willing to embark on board three ſhips, deſtined for exploring a paſſage by the north to the Eaſt Indies. The enterpriſe was undertaken by the advice and recommendation of Cabot, then governor of the company of merchant-adventurers; and he furniſhed neceſſary directions, which evinced both his wiſdom and integrity. For his trouble and charge in this buſineſs, his majeſty preſented him with a gratuity of 200l. This expedition was entruſted to the command of ſir Hugh Willoughby, and it produced the diſcovery of the important trade to *Archangel*, which ſee. Cabot was alſo appointed by royal charter governor for life of the Ruſſia company, in whoſe concerns he took a very active part; and in 1555 letters patent were iſſued, by which their majeſties Philip and Mary, granted him an annuity of 166l. 13s. 4d. during his life. In April 1556, he appears to have retained the habitual ardour of his mind for the proſecution of diſcoveries; for he viſited Mr. Burroughs at Graveſend on board his ſmall veſſel deſtined for Ruſſia, and gave a liberal entertainment to the ſailors on this occaſion. This is the laſt circumſtance that is recorded concerning him; and he is ſuppoſed to have died in the following year, when he had probably attained the age of nearly 80 years. He was a ſkilful navigator, and poſſeſſed in his time a very high reputation. To his capacity, integrity, and zeal, ſociety was very much indebted. The variation of the compaſs was firſt obſerved by him. See Variation. Cabot publiſhed a large map, which was engraved by Clement Adams, and hung up in the privy gallery at Whitehall; and on this map was inſcribed a Latin account of the diſcovery of Newfoundland. He alſo publiſhed a work entitled "Navigatione nelle Parte Settentrionali," printed at Venice in 1583, fol.; and his inſtructions above referred to were printed in Hakluyt's voyages. Biog. Brit.

Cabot, in *Geography*, a townſhip of America, in the county of Caledonia and ſtate of Vermont, ſituate on the height of land between lake Champlain and Connecticut river, about 17 miles from the 15 mile falls in this river, and containing 349 inhabitants.

Cabot's *Head*, a promontory extending far into lake Huron, W. of Glouceſter, and embaying a great part of the lake at its eaſtern extremity.

CABOTE, in *Ichthyology*. See Corax.

CABOURG, in *Geography*, a town of France, in the department of Calvados, and diſtrict of Caen, 10 miles N. of it.

CABRA, a town of Spain in Andaluſia, ſituate at the foot of a mountain, near the ſource of a river of the ſame name, containing, beſides a church and ſix convents, a college for the ſtudy of philoſophy and divinity; 25 miles S.E. of Cordova.

Cabra, an inconſiderable town of Portugal, in the province of Beira; 20 miles E.S.E. of Viſeu.

Cabra, or **Kabra**, a town of Africa in the kingdom of Tombuctoo, ſituate on the river Guin, or Neel Abeed, weſt of the iſland Iinbala or Guinbala, and about 12 miles S. of Tombuctoo, of which it is the port. It is a large town without walls and a place of great trade. The inhabitants are ſaid to be ſubject to diſeaſes that are attributed to the heterogeneous qualities of their food, which is uſually a farrago of milk, fiſh, fleſh, butter, oil, and wine. Here reſides a judge, who is appointed by the king for deciding all controverſies. N. lat. 16° 24′. E. long. 1° 30′.

CABRAL, or **Cabrera, Pedro Alvarez**, in *Biography*, a Portugueſe navigator, who commanded the ſecond fleet fitted out in 1500 for the Eaſt Indies by Emanuel king of Portugal. Anxious to avoid the coaſt of Africa in the courſe of his voyage, he ſtood out far to ſea, and after a month's ſailing, was driven by a tempeſt on the ſhore of an unknown country, which proved to be that part of South America, now called Braſil. Having landed at Santa Cruz on the 24th of April, 1500, he took poſſeſſion of the whole country for the crown of Portugal. (See Brasil.) From this new coaſt he proceeded to Sofala in Africa, whither he arrived after having loſt ſix of his thirteen ſhips; and from thence he ſailed to Calicut where he obtained leave of the ſovereign, or zamorin, to form a commercial eſtabliſhment. Some time after there occurred a jealouſy between him and the inhabitants, which produced hoſtilities, in the courſe of which Cabral burnt ſeveral ſhips in the port, and battered the town, ſo that the zamorin was at length obliged to acquieſce in the terms that were propoſed. He afterwards went to Cananor, where he made a treaty with the prince; and in 1501 he returned to Portugal with a rich cargo. He publiſhed an account of this voyage, printed in an Italian tranſlation by Ramuſio at Venice. Having gained reputation by his diſcoveries and exploits, he died in his own country. Nouv. Dict. Hiſt.

Cabral, in *Geography*, a town of Spain, in the territory of Cordova; 3 miles N.W. of Lucena.

CABRE, a town of the iſland of Cuba; 30 miles S. of Spiritu Santo.

CABRELLA, a town of Portugal, in the province of Eſtremadura; 7½ leagues E.S.E. of Setuval.

CABRERA, Lat. *Capraria*, a ſmall iſland in the Mediterranean, deriving its name from the number of goats upon it. It is mountainous and deſert; no part being inhabited except its port, which is large and ſafe, and the entrance of which, oppoſite to Majorca, is defended by a caſtle and a ſmall garriſon. Under the weſt end of the iſland there is a good road. Criminals are baniſhed into this iſland; 2½ leagues S. from Majorca.—Alſo, a ſmall iſland near the north coaſt of the iſland of Sardinia, N. lat. 41° 15′. E. long. 9° 27′.—Alſo, another iſland, named likewiſe Capraa, lying about E.N.E. from Cape Corſe, on the north point of Corſica, nearly N. from the weſt end of the Elbe Iſland.—Alſo, another iſland E. of the iſland Sapienza, at the S.W. point of the Morea.—Alſo, another iſland in the gulf of Venice, not far from the coaſt of Italy, and nearly north from mount St. Angelo, or the gulf of Varennes.

CABRERA *iſland*, lies on the ſouth coaſt of Candia iſland, S. of the Archipelago iſlands, about twelve leagues E.N.E. from the iſland of Goza. On the eaſt of it is a fair bay, in which is a good road; and another to the weſt.

CABRERES, a town of France, in the department of the Lot, and diſtrict of Cahors; 13 miles E.N.E. of it.

CABRES, *Ilha del*, or Goat iſland, a ſmall iſland belonging to Africa, near the coaſt of Guinea, at a ſmall diſtance from the iſland of St. Thomas. It is mountainous and covered with lemon-trees.

CABRETA, *cape*, lies on the coaſt of Spain, 5 leagues E. from the iſland Tariffa, and the weſternmoſt point of the great bay of Gibraltar.

CABRIEL, a river of Spain which runs into the Xucar, ſoon after it enters Valencia.

CABRIERES, a town of France, in the county of Venaiſſin, the inhabitants of which were ordered to be maſſacred by an arret of parliament in 1545, under the pretext of religion; 3 leagues N. of Cavaillon.

CABRILLA, in *Ichthyology*, a ſpecies of Perca, found in the Mediterranean ſea, the body of which is marked with four longitudinal ſanguineous bands. Linn. Muſ. Ad. Fr.

CABRITA *iſland*, in *Geography*, See Caprea.

CABROL, Bartholomew, in *Biography*, a native of Languedoc, received his education in anatomy and ſurgery, at Montpellier. Returning to his own country, in 1555, he was appointed ſurgeon to the hoſpital of St. Andrew, in that city. In 1570 he was invited by the Univerſity of Montpellier to take the office of demonſtrator in anatomy; an office he filled with credit ſeveral years. In 1594 he publiſhed an anatomical treatiſe, under the title of "Alphabet Anatomique," at Tournon, 4to. reprinted at Geneva in 1602, and afterwards tranſlated into Latin, with the title of "Alphabeton Anatomicum," id eſt, "Anatomes Elenchus accuratiſſimus, omnes humani corporis partes, ea qua ſecari ſolent methodo delineans, acceſſere oſteologia, obſervationeſque medicis ac chirurgis perutiles, 1604, Geneva." In this form it has been frequently reprinted; and is valuable, Haller ſays, for the number of curious and uſeful obſervations contained in it. It is inſerted in a collection of treatiſes, entitled, "Collegium Anatomicum clariſſimorum trium virorum, Jaſſolini, Severini et Cabrolii. Douglas Bibliog. Haller, Bib. Chir. Eloy. Dict. Hiſt.

CABRON, *cape*, in *Geography*, the north-eaſt point of Preſque iſle de Samana, in the iſland of St. Domingo, 22 leagues S.E. by E. from old cape François. N. lat. 19° 33′ W. long. 68° 40′.

CABRUSI, in the *Writings of the Ancients*, a word frequently uſed to expreſs Cyprian, or coming from the iſland of Cyprus. The ancient Greeks had almoſt all their vitriols and vitriolic minerals from this iſland; they therefore ſometimes called theſe cabruſi, without any addition. It is very probable that our word copperas, the common name of green vitriol, is a falſe pronunciation of this word cabruſi.

CABUIA, a Weſt Indian ſpecies of hemp, produced in the province of Panama, from a plant ſomewhat like the *chardon* or *iris*; when ripe, they lay it to ſteep in water, and after drying it again, beat it with wooden mallets till nothing but the hemp remains, which they afterwards ſpin, and make thread and ropes of it; the former of which is ſo hard and tough, that with it they ſaw iron, by fitting it on a box, and laying a little fine ſand over the metal as the work proceeds.

CABUL, Cabuliſtan, or Zabuliſtan, in *Geography*, a country of Aſia, on the limits of Hindooſtan, and weſt of the Indus, which was formerly a province of Perſia, afterwards annexed to the Mogul empire, and comprehended again under the Perſian monarchy in 1739, by Nadir Shah. It is bounded on the north by Kuttore or Caferiſtan, and the Hindoo-Kho mountains, which latter ſeparate Cabul from Balk and Badakſham; on the weſt by the ſame mountains and Candahar, on the ſouth by Moultan and Lahore, and on the eaſt by Caſhmere. This Soubah, under the Mogul emperors, comprehended the whole ſpace between the Indus and the mountains of Hindoo-Kho, being in dimenſions 150 coſſes (each coſs being about $1\frac{9}{10}$ ſtatute mile, (according to the Ayin Acbaree; and this is its greateſt extent; for 100 coſſes are given for its breadth between Kurrabagh, ſituate 11 royal coſſes S.W. of Ghizni, and Chuganſerai at the weſtern extremity of Caferiſtan. Cabul is confined on the north by the continuation of Hindoo-Kho; and on the north-eaſt by Caferiſtan. Towards the ſouth, or the quarter of Bunguſh, its extent is not aſcertained: but as its greateſt breadth is included within the ſpace between Kurrabagh and Chuganſerai, we may conclude that it cannot extend far beyond the river of Nughz. We have an ample deſcription of Cabul in the Ayin Acbaree; from which, as well as from every other account, it appears to be a country much diverſified by mountains covered with eternal ſnow, hills of a moderate height and eaſy aſcent, rich plains and ſtately foreſts; and theſe enlivened by innumerable ſtreams of water. It produces every article neceſſary to human life, together with the moſt delicate fruits and flowers. In the Ayin Acbaree Cabul is reckoned a part of the ſoubah of Caſhmere; but it has been ſince, with great propriety, regarded as a ſoubah of itſelf. Cabul, with reſpect to its natural geography, is divided into two parts, ſeparated by a ridge of very high mountains, uſually covered with ſnow, which runs from weſt to eaſt from the neighbourhood of Ghizni to that of Deenkyte on the Indus, below Attock. The tract lying to the north of this ridge is named Lumghan, or the Lumghanat; and that on the ſouth Bunguſh, or the Bunguſhat; each having one or more conſiderable rivers interſecting their whole length, and diſcharging themſelves into the Indus. Each tract has alſo its proper roads, and its paſſes over the Indus, from the diſtricts of Cabul, Candahar, and Ghizni, reſpectively: but the northern, or Lumghanat road, is that in common uſe, either to Perſia or to Samarcand, notwithſtanding its circuitous nature, as it reſpects the former of theſe countries; for it is both the eaſieſt and the ſafeſt.

Cabul, as well as Candahar, together with ſome diſtricts on the eaſt of the Indus, are compriſed within the extenſive dominions of Timur Shah Abdalla, (uſually ſtyled king of Candahar,) which extend weſtward to the neighbourhood of the city of Terſhiſh; including generally Cabul, Candahar, Paiſhawur, Ghizni, Gaur, Seiſtan or Sigiſtan, and Koraſan. This tract is at leaſt 800 Britiſh miles in length, from eaſt to weſt, and its breadth, though unaſcertained, does not bear any proportion to its length. It does not differ much from the tract compriſed within the ancient kingdom of Ghizni. Timur Shah's Indian ſubjects are chiefly Afghans; the reſt, Perſians and Tartars of almoſt every denomination. His government is ſaid to be mild and equitable, with ſome degree of relaxation as to military diſcipline; which, in a government purely military, forebodes diſſolution. Rennell's Memoir.

CABUL, a city of Aſia in the above province, is the preſent capital of the ſucceſſor of Timur Shah, and ſituated on a river of the ſame name, near the foot of the Indian Caucaſus, or Hindoo Kho; and the proximity of this ridge occaſions the moſt rapid changes in the temperature of the atmoſphere. Its ſituation is ſpoken of in terms of rapture by the Indian hiſtorians; it being no leſs romantic than pleaſant; enjoying a wholeſome air, and having within its reach the fruits and other products both of the temperate and the torrid zones. In a political light, it is conſidered as the gate of India towards Tartary; as Candahar holds the ſame place with reſpect to Perſia. Mr. Forſter, in his "Journey from Bengal to England," deſcribes Cabul as a walled city, about 1½ mile in circumference, and ſeated on the eaſtern ſide of a range of two united hills, generally the figure of a ſemicircle. The fortification, which is of a ſimple conſtruction, with ſcarcely a ditch, and the houſes built of rough ſtones, clay, and unburned bricks, exhibit a mean appearance, and are ill ſuited to the grandeur that might have been ſuppoſed to ſubſiſt in the capital of a great empire. But the Afghans, he ſays, are a rude and unlettered people, and their chiefs have little propenſity to the refinements of life, which indeed their country is ill adapted to gratify. From the Indus to the weſtern limit of this extenſive territory, there is an invariable deficiency of wood; inſomuch, that the lower claſs of people in the northern quarter ſuffer as much, perhaps, from the want of fuel in the winter ſeaſon, as thoſe of other countries would do from a ſcarcity of proviſions.

This quarter of Afganiſtan, poſſeſſing but few Indian productions, receives ſugars and cotton cloths chiefly from Peſhawur, whither it ſends iron, leather, and tobacco. To Candahar it exports iron, leather, and lamp-oil, whence the returns are made in ſundry manufactures of Perſia and Europe, with a large ſupply of excellent melons. The Tartars of Bucharia bring to Cabul the horſes of Turkeſtan, furs, and hides; the latter reſembling thoſe in Europe called Bulgar; the amount of which is applied to the purchaſe of indigo, and other commodities of India. The adjacent parts of Uſbeck Tartary, of which Balk is the capital, hold a kind of dependency on Timur Shah.

The Afghans are the indigenous poſſeſſors of a tract of country, which ſtretches from the mountains of Tartary to certain parts of the gulf of Cambay and Perſia; and from the Indus to the confines of Perſia. The inhabitants of this wide domain have no written character, and ſpeak a language peculiar to themſelves. They are a robuſt, hardy race of men, and being generally addicted to a ſtate of predatory warfare, their manners largely partake of a barbarous inſolence, and they avow a fixed contempt for the occupations of civil life. See AFGHANS.

Ahmed Abdalla, firſt king of Candahar, was originally the chief of an Afghan tribe, conquered by Nadir Shah, on whoſe death he ſuddenly appeared among his former ſubjects, and ſoon erected a conſiderable kingdom in the eaſtern part of Perſia, including moſt of the Indian provinces ceded by the Mogul to Nadir. He eſtabliſhed his capital at Cabul. Ahmed died about the year 1773, and was ſucceeded by Timur, who continued to reſide at Cabul; but the monarchy has been ſtyled that of Candahar from a central province. The ſucceſſor of Timur was Zemaun, who probably ſtill rules this extenſive country. Cabul is ſituated in N. lat. 34° 32′. E. long. 68° 34′.

CABUL, a river of the above-mentioned province, has alſo the proper name of Kameh or Kamah from the vicinity of Jalalabad, 60 or 70 miles below the city of Cabul down to Paiſhawur. At Jalalabad it is navigable for jalehs, or rafts of a particular conſtruction; and as no embarkations in hollow veſſels are in uſe, we may infer that the navigation is interrupted by rapids, for the water of the Kamah is ſufficient to carry boats. The Cabul, after receiving the rivers of Bijore, Penjekoreh, Chendoul, and Sewad, joins the Indus at Attock.

CABURE, in *Ornithology*, the Braſilian name of the great eared owl of that country, STRIX BRASILIANA of recent authors. The CABOURE of Willughby is the ſame bird.

CABURNS, in *Sea-language*, denote ſmall lines made of ſpun yarn, wherewith to bind cables, ſeize tackles, and the like.

CABUSEIBA, in *Botany*. See MYROXYLON, PERUVIANUM.

CABYBARA, in *Zoology*, an animal of the CAVIA genus, diſtinguiſhed ſpecifically by having no tail; fore feet three toed, and palmated. Schreber.

This animal grows to the length of about two feet and an half; the head is oblong; ſnout narrow; noſtrils black and roundiſh; upper lip cleft; whiſkers black; eyes large; ears ſhort, erect, naked, and black. It inhabits the eaſtern parts of South America, where it frequents fenny woods near large rivers; ſwims and dives well; feeds on fiſh and vegetables, the former of which it catches in the night; brings forth one young at a time. This is the thick noſed tapir of Pennant.

CABYLA, or CALYBE, in *Ancient Geography*, a ſmall town of Thrace.

CABYLES, in *Modern Hiſtory*, the Mooriſh mountaineers of Algiers (See ALGIERS), are partly the immediate deſcendants of the moſt ancient inhabitants of the country, and in this reſpect frequently denominated Brebers or Berbers (See BREBES); and partly the mixed progeny of the aborigines, and of the nations who in former times invaded the country and ſettled in it; but all of them have always been and ſtill are diſtinguiſhed from the other inhabitants of the country by their language, love of freedom, and rude unpoliſhed manners. The Cabyles are divided into diſtinct tribes, many of which are free and independent, and do not acknowledge the ſuperiority of Algiers; eſpecially thoſe who inhabit the inacceſſible ridges of mountains. The neighbouring tribes are often united by friendly alliance, without ſubjecting themſelves to a common head. Others live in a continual ſtate of contention and feud with their neighbours, the chief cauſes of which are the infidelity and elopement of their wives. They are, in general, well-grown, robuſt, meagre, and of a ſun-burnt red, and often blackiſh-yellow complexion, and have black or dark-brown hair. Their external appearance is rendered ſtill more uncouth by dirt and tattered clothes. They commonly dwell in ſtraw-huts; though ſtone-houſes occaſionally occur in their "daſkras," or villages. Their number decreaſes, and their love of liberty gradually declines. The inhabitants of the higheſt parts of the mountains, however, ſtill aſſert their independence, and defend their liberty with undaunted valour againſt every hoſtile attack. Their courage, concurring with a perfect knowledge of the country, ſaves them from the ſuperior force of their enemies, as the Algerines have, within a late period, frequently experienced. The government, therefore, endeavours to maintain a good underſtanding and friendſhip, where force is ineffectual, and often yields even to unreaſonable demands. Thus the Cabyles of Couco are treated with great lenity; for the ſituation of their country is favourable, and they can aſſemble a ſtrong army; and they carry great quantities of oil and ſoap for ſale to Algiers. The caſe is the ſame with reſpect to the Cabyles who inhabit the ſea-coaſt about Bugia, Bona, and Tabarca. Among the Cabyles, who acknowledge no common chief, thoſe of the greateſt age are particularly honoured; and only their prieſts, or "Marabuts," enjoy the general confidence of the tribes, and have under the cloak of religion acquired great power and authority, which in ſome inſtances have become hereditary. Theſe then act in the capacity of heads of the tribes, form treaties of peace, ſend ambaſſadors, and are by others, and even by the Turks, conſidered as the chiefs of the nation. In the vicinity of the ſepulchre of a deceaſed Marabut, or ſaint, is generally the habitation of the Marabut of the tribe, who, by means of a flag hoiſted on a pole erected upon the edifice, gives the uſual ſignal when the time of prayer arrives. From the ſame place ſignals are made, on the approach of the enemy, to the Cabyles, to aſſemble them at the appointed place of rendezvous. The language of the Cabyles, like that of the Moors, is a dialect of the Arabic. It deviates, however, ſo much from the latter, that in many places Moors and Cabyles are not able to underſtand one another.

CABYNE, in *Geography*, a ſmall iſland in the Indian ocean, ſouth of Bruton; and near the iſland called Hagediſſen or Lizard-iſland.

CACABELOS, a ſmall town of Spain in Leon, ſeated in a valley between high mountains; 40 miles N. W. of Leon.

CACABOGA, in *Zoology*, the name of an American ſerpent, by ſome accounted the ſame with the Tareiboia, or black water ſnake of that part of the world; but by others deſcribed as being of a yellow colour, living about houſes, and doing great miſchief among poultry, although its bite is not fatal to mankind. This is an ambiguous ſpecies.

CAÇAÇA, in *Geography*, a town of Africa, in the kingdom of Fez, taken by the Moors from the Spaniards in 1534, is defended by a ſtrong fort on a rock; 16 miles S. of Melilla.

CACAGUALES, a town of North America, in the country of Mexico, and province of Tlaſcala.

CACALIA, in *Botany*, (κακαλια, Dioſcorides.) Cluſ. C. Bauh. 197. Tournef. Cl. 12. gen. 10. Tab. 258. Ray Method. Plant. 34. Hiſt. 291. Linn. gen. 933, who in his earlier works called the genus Kleinia, but afterwards adopted the name taken up by Cluſius, &c. though dubious of its identity with the plant of Dioſcorides and Pliny. Reich. 1013. Schreb. 1269. Gært. 963. Tab. 166. Juſſ. 178. Vent. 2. 510. La Mark Pl. 673. Claſs and order, *ſyngeneſia polygamia æqualis*. Nat. Ord. *Compoſitæ diſcoideæ*. Linn. *Corymbiferæ*. Juſſ.

Gen. Ch. *Cal.* common, ſimple, oblong, ſomewhat calycled at the baſe, cylindric; ſcales five to ten, or more, equal, lanceolate, linear, forming a tube, with a few ſhort ones incumbent on the baſe. *Cor.* compound, tubular; florets hermaphrodite, uniform; border four or five-cleft, erect, gradually leſſening into the tube. *Stam.* filaments five, very ſhort, capillary; anthers cylindric, tubular. *Piſt.* germ. oblong; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, oblong, revolute. *Peric.* the permanent calyx. *Seeds* ſolitary, narrow-ovate; down capillary. *Recep.* naked, flat, dotted.

Eſſ. Ch. *Cal.* cylindric, oblong, ſomewhat calycled at the baſe.

Obſ. Linnæus in his Species Plant. and Syſt. Nat. admitted ſome plants into this genus, which in oppoſition to his own generic character are without the ſhort ſcales at the baſe of the calyx. Theſe are now placed under a diſtinct genus, for which Linnæus's original name Kleinia has been revived. La Marck in Encyc. and profeſſor Martyn in his edition of Miller, ſtill, however, adhere to the arrangement of Linnæus. The latter has inconſiſtently retained the original generic character, which the former has altered ſo as to adapt it to all his ſpecies.

Species. * *Stems ſhrubby.*

1. C. *pendula*, Willd. Forſk. deſcript. 145. "Stem and branches fleſhy, leafleſs, ſcaly; peduncles one-flowered," Vahl. Symb. 3. p. 90. Perennial. *Stem* about three feet high, branched, trifid towards the ſummit. *Scales* ſcattered, ſpiral-wiſe, rather crowded, about half an inch long, lanceolate-awl-ſhaped, yellowiſh, rigid, pungent, preſſed cloſe to the branches. *Peduncles* from the ſummits of the branches, ſolitary, ſtraight, about ſeven inches long, with a few linear, ſmall, remote ſcales. *Calyx* many-leaved, containing many florets. *Corolla* purple. 2. C. *cylindrica*, La Marck. "Stem weak; leaves ſlender, cylindric, fleſhy, with a few hairs at their axils." Perennial. *Stem* a foot and a half high. *Branches* ſlender, cylindric, ſmooth, leafy. *Leaves* ſcattered, cylindric, two inches long, pale green. A native of Africa, cultivated in the royal garden at Paris. 3. C. *carnoſa*, Willd. "Leaves roundiſh, fleſhy incurved; peduncles terminal, one-flowered, naked." Ait. Hort. Kew. 3. p. 156. Perennial. Native of the Cape of Good Hope. 4. C. *ficoides*, Linn. Sp. Pl. (Kleinia Hort. Clif.) "Leaves compreſſed, fleſhy." Perennial. *Stems* ſeven or eight feet high, Miller; (about two feet; La Marck), woody at bottom, ſoft and ſucculent upwards, irregularly branched. *Leaves* ſcattered, thick, tapering, ſucculent, a little curved, a little compreſſed in a direction perpendicular to the horizon; the upper ones covered with a very glaucous meal reſembling that on ſome kinds of plum. *Flowers* yellowiſh white, at the extremities of the branches; in a looſe, branched corymb. *Stigma* dark purple. Miller and La Marck. A native of Africa. 5. C. *repens*, Linn. Mant. 110. "Leaves depreſſed, fleſhy." Perennial. It differs from the laſt in having a creeping root; and leaves not compreſſed but concave on their upper ſurface. Native of the Cape of Good Hope. The leaves and upper part of the branches of theſe two are pickled by the French with their meal on, and eſteemed not inferior to rock ſamphire. 6. C. *cuneifolia*. Linn. Mant. 110. "Leaves wedge-ſhaped, fleſhy." Perennial. Smaller than the two preceding. *Leaves* ſcattered, glaucous, veinleſs, flat above, and ſomewhat convex underneath. A native of the Cape. Cultivated in the Upſal garden. Linnæus, though he could not make it flower, judged it to be a Cacalia, not a Cotyledon, on account of its leaves not being oppoſite. 7. C. *articulata*, Linn. Sup. 354. Thunberg prod. 142. l'Herit. ſtirp. tab. 83. (laciniata Jacq. ic. rar. tab. 168. runcinata La Marck?) "Stem decumbent, jointed; lower leaves haſtate, upper lyrate." Linn. jun. "Leaves fleſhy, flat; leaflets three-lobed:" Willd. "Leaves petioled, flat, haſtate-runcinate, fleſhy, glaucous;" La Marck. Perennial. *Stems*

three feet high, upright but weak, round, fleſhy, marked with lines of a deeper green, branching; young branches jointed. *Leaves* ſcattered, generally pinnate; pinnules oblong, tooth-gaſhed or entire, the end one largeſt. Jacquin. Pinnatifid or haſtate, but more frequently ternate-pinnatifid; the ſegments lanceolate, ſpreading very much, the two loweſt diſtinct; the ſinuſes rounded. L'Herit. Runcinate, or ſometimes ſimply haſtate, ſituated towards the ſummit of the branches and ſtem. *Flowers* white or ſlightly tinged with red, in a looſe corymb; peduncles long. La Marck. Obſ. According to Jacquin, as quoted by profeſſor Martyn, the calyx is without incumbent ſcales at the baſe, which would make it a Kleinia; but Willdenow, who had acceſs to a living plant, continues it under cacalia. A native of the Cape of Good Hope. 8. C. *papillaris*, Linn. Sp. Pl. (Kleinia Hort. Clif. Cacalianthemum Dill. elth.) “Stem beſet with truncated, petiolary ſpines; leaves lanceolate, plain.” Perennial. *Stem* about three feet high cylindric, beſet on all ſides with apparently truncated tubercles, which are the permanent petioles of fallen leaves. *Leaves* three or four inches long, nearly cylindric, with a longitudinal furrow, glaucous-green, ſcattered about the ſummits of the branches. A native of the Cape of Good Hope. 9. C. *Kleinia*, Linn. Spec. Plant. (Kleinia, Hiſt. Cliff. 595. Calcalianthemum Dill, elth.) “Stem compound; ſcars of the petioles obſolete, leaves lanceolate, flat; flowers corymboſe.” *Stem* thick, fleſhy, cylindric, branched, ſmooth; the ſcars of the fallen leaves a little protuberant; branches ſmaller at their inſertion and ſeemingly jointed. *Leaves* four or five inches long, fleſhy, pointed, ſlightly furrowed on their upper ſurface, growing in tuſts at the ſummits of the branches. *Peduncles* ſeveral in the centre of the tuft of leaves, each ſupporting a corymb of oblong, pale-carnation-coloured flowers. La Marck. *Receptacle* narrow, ſprinkled with obſolete papillæ, naked, ſmooth. *Seeds* oblong, nearly cylindric, ſmooth, rufeſcent; *down* longer than the calyx, of a ſilky whiteneſs; rays capillary, very minutely denticulated. A native of the Canary Iſlands. By ſome gardeners it has been called cabbage tree, from the reſemblance of its ſtalks to thoſe of cabbage; by others carnation tree from the ſhape of the leaves and colour of the flowers. Miller. 10. C. *odora*, Willd. “leaves lanceolate, flat; flowers umbellate.” Vahl. Symb. 3. p. 90. Perennial. *Stem* erect, branched, ſcarred with three white, elevated lines proceeding from each ſcar upwards and downwards. *Leaves* at the ſummits of the younger branches, ſeſſile, ſcattered, thick, ſmooth. *Peduncles* ſix or ſeven, erect, forming an umbel from the ſummits of the branches, and furniſhed at their baſe with a few lanceolate ſcales. Calyx cylindric, five-leaved, ſmooth, with two linear leaves at its baſe. Vahl. Found by Forſkal on the mountains of Arabia Felix. 11. C. *Anteuphorbium*, Linn. Spec. Plant. 1168. (Kleinia, Hort. Clif. Anteuphorbium, Bauh. Pin. 387. Dod. pempt. 378. Lob. ic. 2. p. 26. Moris. Hiſt. 3. p. 345. tab. 37. fig. 10. Dill. elth. 63. tab. 55. f. 2, 3.) “Leaves ovate-oblong, flat, with a triple line at the baſe of the petioles.” Perennial. *Stems* ſeveral, three or four feet high, cylindric, as large as a man's finger, irregularly branched. *Leaves* ſucculent, pale green. It was formerly eſteemed a ſpecific againſt the poiſonous effect of euphorbium. A native of the Cape of Good Hope. It has been cultivated in European gardens ſince 1570, but it very rarely flowers. The flower figured by Dillenius was produced in the garden of Mr. Blaithwait at Dirham in Glouceſterſtire. 12 C. *rigida*, Willd. “Leaves ovate, obtuſe, flat.” Thunb. Prod. 142. Perennial. A native of the Cape of Good Hope. 13. C. *arbuſcula*, Willd. “Leaves lanceolate, flat, ſmooth.” Thunb. Prod. 142. A native of the Cape of Good Hope. 14. C. *tomentoſa*, Linn. Sup. 353. “Leaves ſeſſile, lanceolate toothed, tomentous beneath.” Perennial. Found by Thunberg at the Cape of Good Hope. 15. C. *aſclepiadea*, Linn. Sup. 352. “Stem tomentoſe; leaves petioled, ovate-lanceolate, entire, very ſmooth above, tomentoſe beneath, revolute at the edge, panicles terminal.” Perennial. *Stems* upright, ſtraight. *Leaves* oppoſite, ſpreading at the baſe, and gradually drawn to a point, veined, the conſiſtence of a bay leaf; petioles roundiſh, tomentoſe. *Panicles* ſmall, crowded. *Calyx* with few flowers; the ſcales at its baſe rather large. It has the habit of an aſclepias. Found by Mutis in South America. 16. C. *appendiculata*, Linn. Sup. “Stem tomentoſe; leaves ovate-heart-ſhaped, acute, angular, tomentoſe beneath; petioles with leafy appendages.” Perennial. *Stem* angular, hoary. *Leaves* higher than the ſtem, on long petioles, a little angular, nerved, veined; appendages three pair of very ſmall, oppoſite, entire, petioled leaflets; the largeſt pair ſituated the farther from the leaf. *Pedicles* furniſhed with a bracte. *Flowers* yellow. Found by Maſſon in watery places of the iſland of Teneriff. Another plant was found by him on the mountains of the ſame iſland which he judged to be a diſtinct ſpecies, but the younger Linnæus thought it only a variety with a very ſmooth ſtem, and leaves cordate-oblong, a little toothed, and not angular. 17. C. *reticulata*, Willd. “Leaves heart-ſhaped, roundiſh, embracing the ſtem, toothed; flowers corymboſe.” Vahl Symb. iii. 91. Perennial. *Stem* branched; branches from the nerves of the decurrent leaves, angular, ſmooth, thickened at the joints under the leaves. *Leaves* reſembling thoſe of *borbonia crenata*, alternate, about an inch long, ſmooth, reticulated with veins; teeth, as well as the edges of the reflexed leaves, thickened; nerves of a blood colour at the baſe. *Corymb* ſomewhat faſtigiate; peduncles and pedicels ſmooth with a ſmall leaf at the baſe of the pedicles. *Calyx* ſimple, ſmooth: leaflets twelve, linear, lanceolate, equal. *Down* ſimple, the length of the calyx, Vahl. 18. C. *procumbens*. Martyn's Miller, (Rumph. Amb. t. 103. f. 2.) “Stem ſomewhat ſhrubby, procumbent; leaves ovate-lanceolate, ſlightly ſerrated, fleſhy; racemes elongated, interrupted.” Lour. Cochinch. 485. Perennial. *Stems* nine feet high, procumbent, round, equal, ſmooth, ſucculent, branched. *Leaves* bright green, ſmooth, alternate, petioled. *Calyx* cylindric, even. *Florets* gold-coloured, few, long, with the ſegments of the border erect. A native of China and Cochinchina, where it is uſed as a pot-herb.

** *Stems herbaceous.*

19. C. *acaulis*, Linn. Sup. 353. “Leaves ſemicolumnar; ſcapes one-flowered.” Thunb. Prod. 142. Perennial. A native of the Cape of Good Hope. 20. C. *lutea*, Miller. “Leaves five-parted, acute, glaucous beneath: flowers terminal, on very long peduncles.” *Scape* about eight inches high, terminated by ſix or eight yellow flowers, forming almoſt an umbel. *Leaves* cut into five or ſix long, acute ſegments almoſt to the midrib; ſegments acutely cut in two or three places. A native of St. Helena, whence it was ſent to Mr. Miller. 21. C. *radicans*, Linn. Sup. 354. “Stem creeping, taking root; leaves round-ovate, fleſhy.” Thunb. Prod. 142. Perennial. Cape of Good Hope. 22. C. *ſempervirens*, Willd. (*Semperviva*, Forſk. and La Marck.) “Stem erect; leaves fleſhy, lanceolate, obtuſe; peduncles generally two, terminal, one-flowered.” Perennial *Stem* ſcarcely a foot high. *Leaves* crowded together at the baſe of the ſtem, ſeſſile, two inches long, ſmooth, ſhining, flat, keeled beneath. *Peduncles* ſtraight, ſmooth, ſprinkled with white dots, beſet with linear ſcattered ſcales. *Calyx* red, or nearly violet with thirteen teeth and thirteen furrows. *Florets* near ſixty. A native of Arabia Felix, on mountains.

23.

23. C. *ſonchifolia.* Linn. Sp. Pl. 1169. (Kleinia, Flor. Zeyl. Muel Schari, Rheed. *Senecio maderaſpatanus*, Pluk. Amalth. 192. t. 444. f. 1. *Chondrilla zeylandica.* Burm. Zeyl. 61. *Sonchus amboinenſis*, Rumph. Amb. 5. p. 257. t. 103. *Tagolina*, Pet. Gaz. t. 80. f. 13.) "Leaves embracing the ſtem. toothed; lower ones lyre-ſhaped; upper lanceolate, arrow-ſhaped." Willd. *Root* annual. *Stem* ſlender, a little branched, about a foot and a half high, round, and ſprinkled with a few hairs. *Leaves* alternate, with a few hairs eſpecially on the rib. *Flowers* terminal, about the ſize of thoſe of common groundſel, cylindric. *Peduncles* briſtle-ſhaped. *Calyx* perfectly ſimple. The whole plant has the appearance of the common ſow-thiſtle, but it is eaſily diſtinguiſhed from it by the ſimple calyx and tubular florets. A native of Ceylon, Malabar, Amboina, China, &c. A decoction of it is eſteemed a febrifuge and antiaſthmatic; its juice is given in diarrhœas. 24. C. *ſagittata*, Willd. "Leaves toothed; the lower ones petioled, obovate; the upper oblong-lanceolate, arrow-ſhaped, embracing the ſtem." Vahl. Symb. iii. p. 91. excluding the ſynonyms. Annual. Reſembling the preceding, but three times larger in all its parts. *Lower-leaves* petioled, obovate, not lyre-ſhaped. *Flowers* of an elegant orange-purple colour. A native of Java. 25. C. *hieracioides*, Willd. "Stem ſimple; leaves petioled, obovate, toothed." Annual. *Stem* a foot high, erect, ſometimes with one or two very ſmall branches from the axils of the lower leaves. *Leaves* alternate, obtuſe, remotely toothed, ſmooth on both ſides; the uppermoſt lanceolate, ſeſſile. *Flowers* ſomewhat corymboſe. *Peduncles* alternate, pubeſcent, ſupported by a lanceolate bracte. *Calyx* with twelve lanceolate leaves, and many flowers. A native of the Eaſt Indies. 26. C. *bicolor*, Willd. Stem branched; leaves lanceolate, ſmooth toothed; thoſe of the ſtem embracing it; thoſe of the branches petioled," Willd. Roxburg. *Stem* two feet high or more, erect, ſmooth, ſtriated. *Peduncles* very long, terminal, ſcaly, one-flowered. *Calyxes* twelve leaved, many-flowered, the ſize of thoſe of C. *ſagittata*. *Florets* purple. A native of the Eaſt Indies. 27. C. *incana*, Linn. Sp. Pl. "Leaves lanceolate, toothed." *Stem* erect, tall. *Leaves* ſcarcely petioled, rather thick. *Peduncles* terminal, branched, long, naked or with one or two very ſmall leaves. A native of the Eaſt Indies. 28. C. *rotundifolia*, Willd. "Stem branched; leaves roundiſh, petioled, repand, pubeſcent; flowers corymboſe." *Stem* two feet high or more, erect, round, ſtriated, ſlightly pubeſcent. Leaves alternate, ſmall, ſcabrous on both ſides, ſprinkled with very ſhort hairs. *Corymbs* terminal, many-flowered, divaricated. *Calyxes* of twelve lanceolate leaves. A native of the Eaſt Indies. 29. C. *ſcabra*, Willd. "Radical leaves petioled, oblong, toothed; ſtem-leaves lanceolate, ſeſſile." Vahl. Symb. iii. p. 92. *Stem* erect, a foot high, ſimple, round, ſtriated, hairy, eſpecially at the baſe. *Root-leaves*, two inches long, with unequal teeth, terminating in a ſharp point, rather ſcabrous above, veined, narrowed at the baſe, and decurrent into the petiole. *Stem-leaves* few; the three loweſt near together, an inch and half long, with four or five teeth on each ſide; the three upper ones remote, half an inch long, linear-lanceolate, very entire, erect. *Petioles* of the radical leaves long, hirſute, flat. *Flowers* five, peduncled, alternate, ſituated near the ſummit of the ſtem; pedicles round, hirſute, with a linear-lanceolate bracte at the baſe of each pedicle, and another in the middle. *Calyx* perfectly ſimple, of twelve linear-oblong leaflets the length of the florets. *Down* ſeſſile, feathered with very minute hairs, viſible only under a lens. Vahl. A native of Brazil. 30. C. *indica*, La Marck. "Stem downy; leaves nearly deltoid, irregularly toothed, on long petioles; bractes briſtle-ſhaped, inveſting the peduncles." *Stem* about a foot high, clothed with a white cottony down, branched near the bottom, leafy. *Flowers* nearly ſolitary at the ſummit of each branch; ſcales of the calyx ſtraight; peduncles cottony. A native of the Eaſt Indies, communicated to La Marck by Sonnerat. 31. C. *ſaracenica*, Linn. Sp. Pl. 1169. (*Solidago* Lemonier, Ob. 163. Sauv. Monſp. 84. Gouan Monſp. 144. *Senecio perennis*, Vaill. Act. 366. *Virga aurea*, Moriſ. Hiſt. iii. p. 23. Bauh. Hiſt. ii. p. 1063. *Conyza* Chem. Act. Par. 1705. p. 394.) "Leaves lanceolate, ſerrated, decurrent." Perennial. *Stem* two or three feet high, ſtriated, almoſt entirely ſmooth, leafy, ſtraight, a little branched at its ſummit. *Leaves* alternate, pointed, ſeſſile, or even embracing the ſtem, ſmooth above, and ſlightly pubeſcent beneath. *Flowers* pale yellow, in a terminal corymb. *Calyx* nearly ſimple. *Peduncles* furniſhed with briſtle-ſhaped leaflets. La Marck. A native of the ſouth of France. This plant has ſo ſtrong a reſemblance to *Senecio Saracenicus*, that La Marck has ſeparated it from that genus chiefly in deference to the authority of Linnæus. 32. C. *haſtata*. Linn. Spec. Pl. (*Senecio*, Gmel. Sib. ii. p. 136. t. 66.) "Leaves three-lobed, acuminate, ſerrated; flowers nodding." Perennial. *Stem* covered with a glaucous meal. *Leaves* haſtate-deltoid. *Flowers* of about five white florets, without the ſetaceous bractes, except at the ſubdiviſions. *Anthers* black. *Peduncles* hoary, ſomewhat tomentoſe, Linn. *Calyx* cylindric, conſiſting of many leaves in a ſimple or nearly double ſeries, calycled at the baſe with acute ſcales. *Receptacle* rather flat, naked, with pentagon areas, incloſing a depreſſed little nipple. *Seeds* roundiſh, ſtriated, of a pale bay colour. *Down* capillary, ſoft, white, minutely toothed, a little longer than the ſeed. Gært. A native of Siberia. La Marck judges it only a variety of the preceding. 33. C. *ſuavolens*, Linn. Sp. Pl. "Leaves haſtate-arrow-ſhaped, toothed; petioles dilated upwards. Perennial. *Stems* four or five feet high, ſtriated, leafy. *Leaves* alternate, pointed, ſmooth. *Flowers* whitiſh, in a terminal compound corymb; calyx and peduncle ſmooth, with ſetaceous bractes under the calyx, and under the diviſions of the peduncles. A native of Virginia and Canada. 34. C. *atriplicifolia*, Linn. Sp. Pl. (*Porophyllum*, Gron virg. 1. p. 94. *Nardus*, Pluk. alm. t. 101. f. 2.) "Leaves ſomewhat heart-ſhaped, toothed, ſinuate; calyxes with five florets," *Root* perennial, compoſed of many fleſhy, ſpreading tubes. *Stems* three or four feet high, round, ſlightly ſtriated, leafy, a little branched. *Leaves* alternate, petioled, ſmooth, of a glaucous colour beneath, lower ones heart-ſhaped, rounded, as large as the human hand, with large unequal indentures; thoſe on the ſtem heart-ſhaped, pointed, angular. *Flowers* ſmall, oblong, pale, or reddiſh, in a terminal, looſe corymbus. *Calyx* ſimple, conſiſting of five or ſix linear leaflets, ſcarioſe at their edges. La Marck. A native of Virginia and Canada. 35. C. *reniformis*, Willd. "Leaves petioled; radical ones between kidney and heart-ſhaped, toothed in a repand manner; ſtem ones oblong, toothed, wedge-ſhaped at the baſe, very entire; corymbs faſtigiate." Perennial. *Radical leaves* large, ſmooth, hairy underneath on the nerves; *ſtem-leaves* very entire, remotely toothed from the middle to the end. *Corymbs* many-flowered. *Calyx* of five, lanceolate obtuſe leaflets. *Florets* numerous, white. It reſembles C. atriplicifolia, but is clearly diſtinguiſhed from it by the form of its leaves and its faſtigiate corymbs. A native of Pennſylvania. 36. C. *petaſites*, La Marck. (Alpina, Linn. Sp. Plant. Willden. 33, but not all the ſynonyms, hirſuta, Villars Dauph. 3. 170, 173. C. incano folio, Cluſ. hiſt. 2. p. 115. C. foliis craſſis hirſutis, Bauh. Pin. 198.) "Lower leaves large, roundiſh-heart-ſhaped, angular, toothed, ſtem-

leaves ſomewhat haſtate, auricled at the baſe; corymb looſe." Perennial. *Stem* three or four feet high, round, reddiſh, a little pubeſcent. *Radical leaves* near a foot in diameter, toothed between the angles, green and ſmooth above, whitiſh and cottony underneath, reſembling thoſe of the common butterbur; petioles long; ſtem-leaves ſmaller, alternate, furniſhed at their baſe with two roundiſh auricles which embrace the ſtem; upper ones lanceolate, ſeſſile and embracing the ſtem. *Flowers* purple, in a terminal, looſe, and branched corymb: florets two or three: calyx ſimple, of four leaflets. La Marck. *Bracte* linear at the baſe of each peduncle. *Calyx* calycled, with three linear, open leaflets. Villars. Obſerved by La Marck on Mont d'Or, in Auvergne, in ſheltered, moiſt ſituations, and eſpecially in the ravines where it grows in abundance. There is a ſmaller variety with cluſtered flowers. 37. C. *leucophyllus*. Willden. (alpina Tournef. inſt. 452. tomentoſa, Jacquin and Villars.) " Leaves petioled, cottony on both ſides, toothed: lower ones heart-ſhaped, acuminate; upper ones lanceolate; petioles naked; flowers corymboſe; calyxes many-flowered." Willd. This ſpecies is remarkable for the whiteneſs of all its parts. *Stem* from twelve to fifteen inches high, ſtraight, ſimple, cottony. *Leaves* alternate, frequently with two ſmall auricles at the baſe of the petiole. *Flowers* terminal. in ſeveral faſcicles, or ſmall, cloſe corymbs; calyx of more than ſix leaflets; florets from eight to fifteen. It varies in ſometimes having the upper ſurface of the leaves green. A native of the Alps. This variety ſeems to be the albifrons of the younger Linnæus and Willdenow, excluding all the ſynonyms quoted by the latter. 38. C. *alliariæfolia*, La Marck, (alpina *β* Linn. pyrenaica, Tourn. 452.) " Leaves between kidney and heart-ſhaped, ſerrated, ſmooth on both ſides, without auricles: calyx with about five florets." La Marck. Perennial. *Stem* about a foot high, almoſt ſmooth. *Leaves*, eſpecially the lower ones, rounded like thoſe of eryſimum alliaria, or rather thoſe of caltha paluſtris, green on both ſides, with branched nerves. *Flowers* purple, in a ſmall compound terminal corymb. *Calyx* ſmooth, of five or ſix oblong, obtuſe leaves. A native of the Pyrenees and the mountains of Dauphiny. Obſ. Gowan's deſcription of his C. alliariæ, (Illuſt. p. 65.) does not correſpond with this plant, though he quotes ſome of its ſynonyms. 39. C. *echinata*, Linn. Sup. 353. " Leaves between kidney and heart-ſhaped, angular, toothed, downy beneath; leaflets of the calyx tubercled." Found by Maſſon on precipices in the iſland of Teneriff. 40. C. *candicans*, Willd. " Downy; radical and lower leaves ovate, petioled, crenate; upper ones ſeſſile, elliptic, very entire." Vahl. Symb. 3. p. 91. t. 71. *Stem* a foot high, erect, ſimple, leafy, about the ſize of a ſwan's quill, and, as well as the reſt of the plant, the calyxes excepted, cloathed with a very white wool. *Radical leaves* two inches long; *lower ſtem-leaves* three inches; *petioles* of the radical and lower ſtem-leaves three inches long, flat, embracing the ſtem, dilated upwards into the leaf. *Corymb* terminal many-flowered. *Pedicles* one-flowered, with an acuminate leaflet at the baſe of each. Scales of the *calyx* lanceolate, ſmooth. *Florets* the length of the calyx. Vahl. A native of the ſtraits of Magellan. 41. C. *ſcandeus*, Willd. " Stem climbing; leaves triangular, ſinuate-toothed." Thunb. Prod. 142. A native of the Cape of Good Hope. Obſ. The C. Scandens of l'Heritier is the Eupatorium Scandens of Linnæus removed to Mikania by Willdenow. 42. C. *quinqueloba*, Willd. " *Stem* climbing; leaves five-lobed." Thunb. Prod. 142. Cape of Good Hope. 43. C. *bipinnata*, Linn. Sup. (pinnatifida, Berg. cap. 230.) " Leaves twice pinnate, linear." *Stem* erect, ſtriated, ſmooth. *Leaves* rather crowded, toothed, ſmooth three inches long. Panicle terminal, ſomewhat faſtigiate. *Flowers* yellow. *Calyces* cylindric, five-leaved, five flowered, acute. A native of the Cape of Good Hope. 44. C. *bulboſa*, Mart. Mil. " Leaves radical, lyrate; ſtem almoſt naked; panicle few-flowered." Lour. Cochinch. 485. *Root* a roundiſh knotted, perennial bulb. *Root-leaves* toothed, ſomewhat fleſhy, petioled, few. *Stem* a foot and a half high, upright, round. *Flowers* gold-coloured, on a terminating peduncle, ſeveral together. *Calyx* cylindric, with a calycle of five thread-ſhape looſe leaflets. Tube of the *florets* longer than the border, inflated, reflexed, with a ſhort converging border. *Stigmas* two, long, erect. A native of China and Cochinchina. 44. C. *pinnatifida*, Mart. Mil. " Leaves pinnatifid; ſegments lanceolate, ſerrated: ſtem twiſted. Lour. Cochin. 486, *Stem* two feet high, upright, thick. *Leaves* ſmooth, not fleſhy. *Flowers* yellow, in a terminating panicle, few together. *Calyx* oblong, round." A native of China near Canton, among rice.

Propagation and Culture. All the ſorts which are natives of the Cape of Good Hope may be propagated during the ſummer months, by cuttings, which ſhould be laid to dry a fortnight, that the wound may be healed over before they are planted; but if they have been kept ſix months they will take root. The pots in which they are planted may be plunged in a moderate hot-bed; but if they are planted in June or July they will root as well in the open air. They ſhould have a light ſandy earth, and in winter be placed in an airy glaſs-caſe, where they may enjoy the ſun and air in mild weather, but muſt be protected from the froſt. Like other ſucculent plants from the ſame country, they muſt have little water in winter, and only a moderate quantity in ſummer.

The *carnoſa* increaſes faſt by its roots, which may be parted either in the beginning of September or at the end of March. They ſhould be planted in pots filled with light earth, and conſtantly kept in the tan-bed in the ſtove.

The *papillaris* and *anteuphorbium* require a ſandy poor ſoil, and muſt be kept very dry both ſummer and winter; but they require the open air in ſummer. The *kleinia*, if kept in a dry warm glaſs caſe in winter, and in a warm ſheltered ſituation in ſummer, will flower annually, and grow to the height of eight or ten feet.

The *ſonchifolia* is propagated by ſeeds, which ſucceed beſt when ſown in autumn ſoon after they are ripe, and the pot plunged in the tan-bed in a ſtove. In ſpring they may be ſown in a hot-bed, and at a proper time tranſplanted into another hot-bed, ſhading them till they have taken root. When the plants have acquired ſtrength they ſhould be planted in pots, and either plunged into a moderate hot-bed under a deep frame, or placed in a glaſs-caſe, where they will flower and perfect their ſeeds. The *ſuaveolens* and *atriplicifolia* multiply greatly by their ſpreading roots, and alſo by their ſeeds, which are wafted to a great diſtance by the wind. The roots ſhould be tranſplanted in autumn. They require a loamy ſoil, and a ſhady ſituation. See Martyn's Miller.

Cacalia *Porophyllum* and *Suffruticoſa*, Linn. *ruderalis*. Swartz; and *angulata*, Vahl. See Kleinia.

Cacalia *Sonchifolia*, Forſkal. See Kleinia *angulata*.

Cacalia *Linaria*, Cavanilles. See Kleinia *ſuffruticoſa*.

Cacalia *Cordifolia* and *Laurifolia*. Lin. Sup. See Mikania.

Cacalia *foliis auriculatis*, &c. Burman. Zeyl. 52, t. 21. See Eupatorium *Zeylanicum*.

Cacalia *foliis rotundioribus*, Moriſ. 3, 94. See Eupatorium *Rotundiſolium*.

CACALIÆ, in *Entomology*, a ſpecies of Chrysomela that inhabits Auſtria: the colour is greeniſh, with a longitudinal ſtreak on the wing-caſes and ſuture blue: wings red. Herbſt.

CACALIANTHEMUM, in *Botany*, Dill. Elth. See Cacalia *Papillaris* and C. *Kleinia*.

CACALLA, or Cazalla, in *Geography*, a town of Spain, in the country of Seville, famous for its wine; 40 miles N. of Seville.

CACALOTL, in *Ornithology*, the Braſilian name of the Corvus varius of Briſſon, a variety of our common raven, according to *Fernand's* Hiſtory of New Spain, &c.

CACALOTOTL. Ray deſcribes the leſſer ani of modern writers, Crotophaga ani of Gmelin, under this name.

CACAMO. See Acamantis.

CACAO, in *Botany*. See Theobroma and Chocolate. The cacao nuts are uſed by the Indians as money; 150 of the nuts being eſtimated at much the ſame value with a Spaniſh ryal.

Cacao *affinis*. Sloane. See Randia *mitis*.

Cacao, in *Entomology*, a ſpecies of Bruchus, found among the ſeeds of the Theobroma. The body is fuſcous, with griſeous ſpots. Fabricius, &c.

CACAOTETE, in *Natural Hiſtory*, the name by which the Braſilians call the Belemnites, which is very common with them as well as with us.

CACAPOHON, in *Geography*, a river of Virginia, which runs about 70 miles north-eaſterly along the weſtern ſide of north-ridge, and diſcharges itſelf into Potowmack river, 30 miles N. from Frederickſtown.

CACARA, in *Botany*, Rumph. See Dolichos *unguiculatus* and *pruriens*.

CACASTOL, in *Ornithology*, the name given by Buffon to the Mexican ſtare, Sturnus Mexicanus, a bird of a blue colour varied with black. Ray calls it *Caxcaxtototl*, and Briſſon *Cotinga Mexicana*.

CACATOCHA of *Valent*, in *Ichthyology*. See Coryphæna pentadactyla. The fiſh called by the ſame writer Cacatocha Babintang is the Chætodon Argus of Brunniche, a ſpecies diſtinguiſhed by having eleven dorſal ſpines, the body marked with many black dots, and the tail entire.

CACATORY *fever*, a denomination given by Sylvius to an intermittent fever, accompanied with a ſevere looſeneſs, and ſometimes gripes.

CACATUA, in *Ornithology*, ſynonymous with Kakatoë, and Cockatoo. Briſſon calls the leſſer white Cockatoo, Psittacus sulphureus of Gmel. *Cacatua luteo-criſtata*. His cacatua minor is the red vented cockatoo of Brown; and the cacatua rubro-criſtata, the greater red-creſted cockatoo of Latham, &c.

CACAVATE, in *Botany*, a name given to the cacao (Theobroma Linn.) in the general hiſtory of plants publiſhed at Lyons, 1587.

CACCARI, in *Geography*, a town of Naples, and province of Calabria Citra; 10 miles W. of Umbriatico.

CACCAVONE, a town of Naples, in the country of Moliſe; 9 miles N. of Moliſe.

CACCIA, a ſmall diſtrict of the iſland of Corſica. See Algeri.

Caccia, Ital. Chasse, Fr. a muſical term for a *Hunting-piece*. *Cornoda caccia*, a *hunting horn*, commonly called a French horn. *Alla caccia*, in the hunting ſtyle. See Chace.

CACCINI, Giulio Romano, in *Biography*, one of the firſt cultivators of *recitative* during the latter end of the 16th century at Florence. He is ſaid, by Gio Battiſta Doni, to have been a young, elegant, and ſpirited ſinger, accuſtomed to attend the meetings of a ſociety of learned noblemen and gentlemen at Florence; the members of which ſociety were much diſpleaſed with the little reſpect that was paid to lyric poetry by the compoſers of that time, who thought of nothing but fugues, canons, and crowded harmony, which being totally devoid of melody, rendered the words that were ſet in this manner wholly unintelligible; as the muſic was all in choruſes, *fugato*, where every part was ſinging different words at the ſame time. Theſe gentlemen wiſhed to diſcover ſome kind of ſimple melody that would tune declamation, admit of harmony occaſionally, and approach as nearly as poſſible to the declamation of the ancients; which they were ſure was in muſical intervals, as it was accompanied by inſtruments. *Tibiæ pares et impares*.

"Caccini being ſeized with a paſſion for this kind of muſic, ſtudied it with great diligence, compoſing and ſinging to a ſingle inſtrument, which was generally the Theorbo lute, played by *Bardillo*, who happened then to be at Florence. In imitation therefore of Galilei, but in a more beautiful and pleaſing ſtyle, Caccini ſet many canzonets and ſonnets, written by excellent poets, and not by ſuch wretched ſcribblers (*rimatori a dozzina*) as were uſually employed before, and are ſtill frequently the favourites of muſicians; ſo that he may be ſaid to have been the firſt to ſee this error, and to diſcover that the art of counterpoint will not alone complete the education of a muſician, as is generally imagined. And he afterwards confeſſed, in a diſcourſe prefixed to his works, that the converſations held at Count del Vernio's were of more uſe to him, than thirty years' ſtudy and exerciſe of his art. Here he likewiſe claims the merit of having firſt publiſhed ſongs for a ſingle voice, which, indeed, had the greateſt ſucceſs. And it muſt be confeſſed, that we owe to him, in a great meaſure, the new and graceful manner of ſinging, which at that time ſpread itſelf all over Italy; for he compoſed a great number of airs which he taught to innumerable ſcholars, and among the reſt to his daughter, who became a famous ſinger, and ſtill continues very excellent in that faculty.

"In the recitative ſtyle, however, Caccini had a formidable rival in Jacopo Peri, a Florentine, who was not only a good compoſer, but a famous ſinger, and performer on keyed inſtruments, having been taught by Chriſtopher Malvezzi; and applying with great diligence and enthuſiaſm to this kind of ſinging, ſucceeded wonderfully, and met with univerſal applauſe.

"The firſt poem ſet in this new manner was *Dafne*, a paſtoral written by *Rinuccini*, and ſet by Jacopo Peri and Caccini, in a manner which charmed the whole city." See Recitative and Opera.

Various experiments in dramatic muſic were made at the houſes of the nobility of Florence previous to the exhibition of the firſt ſerious opera, which was the *Euridice*, written by Rinuccini, and chiefly ſet by Jacopo Peri, for the royal nuptials of Mary of Medicis with Henry IV. of France, in 1600. Though the muſic of this drama went under the name of Peri, who performed a part in it himſelf, yet he confeſſes in his preface that Giulio Caccini, "whoſe great merit was known to the whole world," compoſed ſome parts of it, and taught the ſingers. Caccini himſelf afterwards ſet the entire drama of Euridice to muſic *in ſtilo Rappreſentativo*, and publiſhed it at Florence. Specimens of his muſical recitation are given in Burney's General Hiſtory of Muſic, vol. IV. ſo that there can be no doubt but that Caccini was one of the firſt founders of the muſical drama or Opera, whence all the improvements in ſetting words, in ſinging, and in producing inſtrumental effects by a well regulated orcheſtra for theſe laſt 200 years, may be deduced.

CACCO, in *Ornithology*, one of the ſynonymous names by which Buffon diſtinguiſhes the long-billed rain cuckow, CUCULUS VETULA of *Gmelin*, &c.

CACELLA, in *Geography*, a ſea-port town of Portugal, in the province of Algarva, on the ſouth coaſt, about 8 miles W. from the mouth of the Guadiana. N. lat. 37° 9'. W. long. 6° 40'.

CACERA DELL' PAGANI, a town of Naples, in the province of Capitanata; 13 miles S. of Troia.

CACERES, a town of Aſia, in the iſland of Luçon, or Manilla, founded by the ſecond governor and proprietor of theſe iſlands, D. Francis de Sande, and conſiſting of Indian huts and ſome convents, well built. It is the reſidence of a biſhop, under whom are the provinces of Colilaya, Camarines, and Ifalon. N. lat. 14° 15'. E. long. 124° 40'.

CACERES, a town of Spain, in the province of Eſtremadura, ſeated on the Sabor, and well known for its fine wool; 20 miles W. of Truxillo.

CACERES, a town of North America, in Mexico, and diſtrict of Tlaſcala; 70 miles N.W. of Vera Cruz.

CACHACHRON HEAD, the ſouth point of Dominica iſland in the Weſt Indies, and nearly N. from the north end of Martinico.

CACHALES, in *Ancient Geography*, a river of Greece in the Phocide, which waſhed the walls of Tithoreus, according to Pauſanias.

CACHALOT, or CACHELOT, in *Zoology*. See PHYSETER MACROCEPHALUS.

CACHAN, or KASHAN, in *Geography*, a town of Perſia, in the province of Irak, which carries on an extenſive trade in ſilk, ſtuffs, brocades, and fine earthen ware, inhabited by Chriſtians and Guebres; 50 miles N. of Iſpahan. N. lat. 34° 10'. E. long. 50° 2'.

CACHAO, CHACO, CHECO, or KESHO, one of the eight provinces of Tonquin, ſeated in the central part of the kingdom, and encompaſſed by the other ſeven. Its ſoil is fertile, and ſome parts of the country are mountainous; it abounds with a variety of trees, and particularly that which yields the varniſh. The ſilk manufacture is carried on in this province more than in any of the others. It takes its name from its capital, which is the metropolis of the whole kingdom; though Dampier reckons it as, in other reſpects, hardly comparable to a Chineſe city of the third rank, having, however, a conſiderable population, which principally depends on the crowds of neighbouring villagers who reſort to it at particular times, and eſpecially on market-days, with their various commodities. Theſe perſons are allowed to have their halls in different parts of the city, for the convenience of the diſpoſal of their wares. The town itſelf, though it is the conſtant reſidence of the Tonquineſe monarchs, has neither walls nor fortifications; and if we except the royal palace and the arſenal, has little elſe worthy of notice. The ſtreets are neither regular nor handſome; ſome of them, indeed, are airy and wide, but the reſt are narrow, and all of them are paved: the houſes are low and mean, conſtructed of wood and clay, and not above one ſtory high. The magazines and warehouſes belonging to foreigners are the only edifices built of brick. In various parts of the city there are, even in dry weather, ditches of ſtagnated water and ſtinking mud, which are very offenſive to ſtrangers; and yet, upon the whole, its airy ſituation, and ſerene air, render it healthy and pleaſant to the natives; ſo that it is ſeldom, if ever, viſited with thoſe peſtilential diſeaſes that are common in large cities of thoſe eaſtern climes. On account, however, of the materials with which its edifices are conſtructed, it is ſubject to frequent and dreadful conflagrations. As a preventative of the deſolating effects of theſe calamities, every houſe is furniſhed with a low building of brick, in form of an oven, in which the inhabitants depoſit, on occaſions of any alarm, their moſt valuable property. The government likewiſe obliges every family to keep a ciſtern, always full of water, on the top of the houſe, together with a long pole and bucket for throwing water upon the houſe. The chief palace of the chowa, or king, is ſituated in the centre of the city, and ſurrounded with a ſtrong wall, encloſing within its circuit a great number of apartments, two ſtories high; thoſe of the chowa and his wives are embelliſhed with a variety of carving and gilding after the Indian manner, and are finely varniſhed. In the outward court are a great number of ſumptuous ſtables for the king's elephants and horſes; the inner courts are inacceſſible, not only to ſtrangers, but even to the king's ſubjects, the members of the privy council and the miniſters of ſtate excepted. This encloſure, which is of a vaſt circumference, is faced with brick within and without, and the whole ſtructure is terminated by ſpacious gardens. The king is a kind of priſoner in this palace, and his authority is exerciſed by an officer, whoſe family have long tranſmitted the executive power in hereditary ſucceſſion. The arſenal is a large building, well ſtored with warlike ammunition and artillery. It ſtands on the banks of the river Song-koy, and on that branch of it which Dampier calls Dombea, repreſented by him as the deepeſt and wideſt of the two. The Engliſh factory-houſe is ſituated on the north ſide of the city, fronting the river. It is a low edifice, with a ſpacious dining-room in the centre, and on each ſide are the apartments of the merchants, factors, and ſervants. At each end of the building are ſmall houſes for other uſes, which form two wings, with the ſquare in the middle, and parallel with the river, near the bank of which ſtands a flag-ſtaff, on which they commonly diſplay the Engliſh colours on Sundays, and all other remarkable days. Adjoining to this houſe, on the ſouth ſide, is the Daniſh factory, which is neither ſo large nor ſo convenient. On the ſame ſide of the river runs a long dike, with its timber and ſtones ſtrongly cemented together, which prevents the river, during the time of their heavy rains, from overflowing the city. This river diſembogues itſelf into the gulf of Tonquin. Dr. Halley, in the Philoſophical Tranſactions, has given an account of the ſurpriſing tides in this bay; each flux being of 12 hours duration, and its reflux the ſame, ſo that there occurs but one high-water in 24 hours. Cachao, or Keſho, is the only city in the whole kingdom, and is ſaid to conſiſt of about 20,000 houſes. N. lat. 22° 10'. E. long 105° 31'. See TONQUIN.

CACHAR, a rich but mountainous territory of the kingdom of Ava, lying north-weſt of Munnipoora, ſubject to the independent ſovereignty of a rajah. Its capital is Coſpore.

CACHASSÆ, in *Ancient Geography*, a people of Scythia, placed by Ptolemy on this ſide of Imaus, between the Noroſſi and the Aſpaſii.

CACHE, or, as it is called in China, *Cayas*, and in many parts of India, *Cas*, *Caſoe*, *Caſie*, and *Caſſie*, in *Commerce*, a ſmall copper coin, equal in value to a little more than a French denier.

CACHEF, or CACHEEF, in the *Turkiſh Affairs*, the governor of a city, town, or even a province of Egypt.

The title cachef is alſo given to the captains or commanders of little flying armies, intended to keep the Arabs in obedience.

Egypt is divided by the Turks into thirty-nine *cacheftecks*, or governments.

CACHEMIRE, in *Geography*. See Cashmere.

CACHEO, a town of Negroland in Africa, ſeated on the river St. Domingo, or Cacheo, and belonging to the Portugueſe, who have three forts, and carry on a great trade there in ſlaves and wax. N. lat. 12° 5′. W. long. 16° 20′. The river divides into ſeveral large branches before it falls into the ocean.

CACHET, Christopher, in *Biography*, born at Neufchateau in Lorraine, the 26th of November 1572, received the rudiments of his education among the Jeſuits. To improve himſelf further, he viſited the principal ſtates of Italy, but purpoſing to practiſe medicine, he fixed his reſidence at Padua, and after finiſhing his ſtudies there, he ſettled at Nancy, where he arrived at the higheſt honours in his profeſſion, being phyſician and aulic counſellor to four of his ſovereigns, as appears by his epitaph, under his portrait, in the houſe of the Cordeliers at Nancy, where he was buried Sept. 30, 1624.

Ut erat bono publico natus,
Lucem literis, nomen libris, laudem ſuis, Patriæ gloriam, famam ſibi,
Principibus ſæpe ſalutem peperit.
Sereniſſimis ducibus
Carolo 3tio. Henrico 2do. Franciſco 2do. Carolo 4to.
Archiater et conſiliarius.

He was author of ſeveral works: "Controverſiæ Theoricæ Practicæ, in primam Aphoriſmorum Hippocratis Sectionem. Opus in duas partes diviſum, Philoſophis ac Medicis perutile et perjucundum. In quo quæcumque ad Venæſectionem, Purgationem, et Victus Rationem pertinent, enodantur, &c." Tulli Leucorum, 1612, 8vo. "Pandora Bacchica furens, Medicis Armis oppugnata;" Tulli, 1614, 12mo. "Apologia dogmatica in Hermetici cujuſdam anonymi ſcriptum de curatione Calculi, in qua Chymicarum Ineptiarum vanitas exploditur;" Tull. 1613, 8vo. "Vrai et aſſuré Preſervatif de la Petite Verole et Rougeole;" 1617, 8vo. The only art here taught is to keep children carefully from all infected places. Haller. Bib. Med. Eloy. Dict. Hiſt.

CACHETUS, in *Ancient Geography*, a river of Aſia, in the kingdom of Pontus, near the town of Heraclea, according to Diodorus Siculus.

CACHEXIA, a term applied by the older writers in *Medicine*, to denote thoſe conditions of the body, from whatever cauſes they may ariſe, in which the functions are imperfectly performed, and the complexion unhealthy. It is derived from κακος, *bad*, and ἕξις, *habit*. The cachectic ſtate of the conſtitution was ſuppoſed to depend upon an acrimony, or ſome other morbid change in the fluids of the body; and this ſeems to have been chiefly inferred from the change of complexion. Hence Van Swieten obſerves, that "expert phyſicians always examine carefully into the appearance of the ſkin, in thoſe parts where the integuments are thin, and the veſſels lie expoſed, when they wiſh to know the condition of the blood and humours." § 1170. Theſe hypotheſes, however, are now conſidered as unfounded. But upon whatever circumſtances the cachectic ſtate depends, it is obvious, that it occurs in all inſtances of ſlow convaleſcence from acute and chronic diſeaſes in general, and accompanies all lingering affections of the viſcera and other parts; and therefore that it is eſſentially different in its nature in different inſtances. Hence it is impoſſible to give a general hiſtory of it, as of a ſpecific diſeaſe; or to enumerate the remedies which may be ſucceſsfully employed for its cure. Where it is merely a debility, conſequent on ſome ſevere diſeaſe, moderate exerciſe, a light nutritious diet, and tonic medicines are indicated. But where it is a concomitant of ſome organic affection, the nature of that muſt determine the nature of the remedy to be adopted.

In the more accurate language of the preſent day, this vague and indefinite term is ſeldom employed. But it has been uſed with great propriety by Sauvages and Cullen to denote a particular claſs of diſeaſes, in their reſpective ſyſtems of noſology; including thoſe complaints in which the general habit is affected, and a change of complexion, with emaciation or morbid enlargement, are characteriſtic ſymptoms. Such are dropſy, jaundice, rickets, &c.

CACHIBONA, or Clyde, in *Geography*, a river of the iſland of Dominica, which runs into the ſea on the eaſt coaſt, a little to the north of Halifax bay.

CACHICAME, in *Zoology*, Buffon's name of the *Pig-headed Armadillo*; *Daſypus novemcinctus* of Linnæus.

CACHIMAYO, in *Geography*, a large river of South America, in Peru, which falls into the ocean within 2 leagues of La Plata.

CACHIQUE *Tower* and *Bay*, are ſituated on the coaſt of Barbary, in the Mediterranean, nearly W. from Algiers 6 or 7 leagues.

CACHOLONG, in *Mineralogy*. See Chalcedony.

CACHOPS *Sands*, in *Geography*, are two remarkable banks, which contract the channel of the mouth of the Tagus, at its influx into the ſea, below Liſbon.

CACHORRODOMATO, in *Zoology*, the name by which the Portugueſe in America call the Taibi; a creature ſaid to reſemble the Opoſſum in many reſpects, and by ſome ſuſpected to be the male of that creature.

CACHRUS, in *Entomology*, a ſpecies of Papilio, (*Plebejus*) with entire yellowiſh wings, and a common fuſcous border ſpotted with white. Fabr. &c. This inhabits South America.

CACHRYS, in *Botany*, καχρυς, Gr. The word is uſed in various ſenſes by different authors, and has been the occaſion of great perplexity to the grammarians and commentators. In Theophraſtus (lib. iii. cap. 7.) it ſeems to denote the catkins of the oak, walnut, pine, &c. by other writers it is uſed, ſometimes for the root, ſometimes for the ſeed of the plant to which modern botaniſts have given the ſame name, and ſometimes for the plant itſelf. It alſo ſignified the ſeeds of roaſted barley; and ſome have ſuppoſed that the plant derived its name from the reſemblance of its ſeeds to thoſe of barley. (See the notes on Theophraſtus by Conſtantine and Bodeus a Stapel, p. 139, 140.) Tournef. Inſt. p. 325. *Plate* 127. Raii Meth. Plant. 47. Linn. gen. 342. Schreb. 474. Willd. 538. Gært. 808. *Pl.* 140. Juſſ. p. 223. Vent. vol. iii. p. 26. Libanotis Cachryophorus, Raii Hiſt. Plant. p. 424. Claſs and order, *pentandria digynia*. Nat. Ord. *Umbellatæ*, Linn. *Umbelliferæ*, Juſſ.

Gen. Ch. *Cal.* univerſal and partial umbels manifold: univerſal and partial involucres, many-leaved, linear-lanceolate: perianth proper, ſcarcely diſcernible. *Cor.* flowers all uniform: petals five, lanceolate, almoſt upright, equal, flattiſh. *Stam.* filaments five, ſimple, the length of the corolla: anthers ſimple. *Piſt.* germ top-ſhaped, inferior: ſtyles two, inferior, the length of the corolla. *Peric.* fruit ſomewhat egg-ſhaped, obtuſe, very large, ſplitting in two. *Seeds* two, very large, very convex on one ſide, flat on the other; of a fungous or ſpungy ſubſtance, each encloſing a ſolitary ovate-oblong kernel.

Eſſ. Ch. fruit ſomewhat egg-ſhaped, with a thick integument of a ſpungy ſubſtance.

Sp. 1. C. *odontalgica*, Linn. Sup. 181. Pallas It. vol. iii. p. 270. t. g. f. 1, 2, 3. Vol. v. p. 106. *Pl.* 4. French tranſlation. Gært. vol. ii. p. 274. *Pl.* 140. f. 3. "Radical

dical leaves twice pinnate, white with down : ſtem naked ; ſeeds perfectly plain." *Root* perennial, very long, acrid and aromatic, producing when chewed an abundance of ſaliva in the mouth, and on that account employed as a cure for the tooth-ache. Pinnules of the radical leaves ternate, the leaflets elegantly incurved upwards. *Stem* ſimple, ſtreaked, from nine to twenty-one inches high, panicled at top with umbelled branches forming a kind of thyrſe ; naked, with the exception of a ſtipule-like leaf at the origin of each branch, cut nearly half way down into three or four ſegments, and a pair of ſhort lanceolate leaves a little above the middle of each branch. *Flowers* yellow. Gærtner obſerves, that the ſtructure and poſition of the cotyledon of the ſeed is very ſingular, being leafy, elliptic, divaricated downward and collateral, nearly as in meniſpermum, except that both are included in one cell of the albumen. Found abundantly by Pallas in the arid deſerts, between the Volga and the Jaick. 2. C. *Moriſoni*, Willd. Allion. Auct. p. 23. Moriſ. Umb. 63. *Pl.* 3. f. 1. C. lævigata. La Marck Encyc. 1. p. 256. " Leaves ſuper-decompound, briſtle-ſhaped, cut into many ſegments : ſeeds plain, ſmooth." Vahl. Symb. 3. p. 49. *Root* perennial, long, thick as a man's arm, white. *Stem* two or three feet high, ſtriated, ſmooth. *Root-leaves* large, finely cut ; the laſt ſegments briſtle-ſhaped and ſhort : upper leaves of the ſtem oppoſite. *Flowers* yellow. *Seeds* white, ſmooth, not furrowed. La Marck quotes the libanotis of Gouan as a ſynonym of this ſpecies ; but Gouan deſcribes the ſeeds of his plant as furrowed. Profeſſor Martyn obſerves, that the libanotis of Gouan ſeems to be a different ſpecies from that of Linnæus. A native of Spain, Italy, and the ſouth of France. 3. C. *Libanotis*, Linn. Sp. Pl. Moriſ. Hiſt. 3. p. 267. S. 9. Pl. 1. fig. 6. Umb. Pl. 3. f. 3. Libanotis ferulæ folio, ſemine anguloſo. Bauh. Pin. 158. " Leaves twice pinnate ; leaflets acute, much divided ; ſeeds furrowed, ſmooth." *Root* perennial, large, white, branched, aromatic. *Stem* thick, round, ſmooth, finely ſtriated, leafy, branched, about two feet high. *Leaves* large, green, almoſt as finely cut as the preceding. *Flowers* yellow. The whole plant has an aromatic, ſweet ſmell, and is eſteemed carminative, aſtringent, and anti-icteric. A native of Italy, the ſouth of France, and the coaſt of Barbary. 4. C. *ſicula*, Linn. Sp. Pl. Moriſon. Hiſt. 3. p. 267. S. 9. Pl. 1. f. 3. Umb. Pl. 3. f. 2. " Leaves many times divided ; leaflets linear, acute : ſeeds furrowed, hiſpid." *Root* perennial, large, long, branched. *Stem* two or three feet high, thick, round, ſtriated, ſmooth, branched. *Radical-leaves* a little reſembling thoſe of Peucedanum, large, a little rough to the touch : their common petiole imperfectly cylindric, ſtriated. *Flowers* yellow. *Seeds* deeply channelled, angular, remarkably rough. 5. C. *taurica*, Willd. " Leaves twice pinnate ; leaflets linear, acute ; ſeeds furrowed, tubercled." *Leaves* as in the preceding, but narrower. Involucre univerſal, none ; partial of eight or ten linear leaflets. *Flowers* dioicous. *Seeds* three times leſs than thoſe of the preceding, furrowed, thickly ſet with large, globular, often reddiſh tubercles. Willdenow, from a dried ſpecimen. A native of Tauris and Siberia. 6. C. *cretica*, Willd. La Marck Encyc. 1. p. 257. " Leaves twice pinnate ; leaflets lanceolate, ſerrated ; ſeeds furrowed, rough." *Root* perennial. *Stem* two feet and a half high, channelled ; leaflets reſembling thoſe of Angelica Sylveſtris. Seeds ovate-pointed, blackiſh, channelled, rough with ſtiff hairs, and furniſhed with a remarkably fungous integument. A native of Candia. 7. C. *panacifolia*, Willd. Vahl. Symb. 1. 25. Martyn's Miller. (C. paſtinacea, La Marck Encyc. C. ſicula, Moriſ. Hiſt. 3. p. 267. Sec. 9. Pl. 1. f. 4. Panax ſiculum, Boccone Sec. 1. Pl. 1.) " Radical-leaves pinnate, ovate-obtuſe, ſomewhat lobed ; ſeeds hirſute." *Root* perennial. *Stem* four or five feet high, almoſt naked ; branches alternate. *Radical-leaves* large, unequally winged with five or three leaflets, elliptic obtuſe ; crenulated, and ſometimes lobed, pubeſcent, a little harſh to the touch, of a greyiſh green colour : leaflets at the ſummit of each leaf, decurrent on the petiole. *Flowers* white. Involucres of from ſix to nine leaves. Germs covered with white hairs. La Marck. Seeds a little ſpungy. Vahl. A native of Sicily, Spain, and Barbary.

Cachrys *Orientalis*, Tournef. Cor. 23. Travels, 2. p. 121. Pl. See Laserpitium *ferulatum*.

Cachrys, in *Entomology*, a ſpecies of Papilio (*Heſperia* Fabr.) that inhabits Cayenne. The wings are entire, yellowiſh, with a common brown border ſpotted with white. Fabr. &c.

CACHU, Cachou, or Catechu. See Catechu.

CACHUNDE, the name of a medicine highly celebrated among the Chineſe and Indians, and made of ſeveral aromatic ingredients, the perfumes, medicinal earth, and precious ſtones : they make the whole into a ſtiff paſte, and form out of it ſeveral figures according to their fancy, which are dried for uſe ; theſe are principally uſed in the Eaſt Indies, but are ſometimes brought over to Portugal. In China, the principal perſons uſually carry a ſmall piece in their mouths, which is a continued cordial, and gives their breath a very ſweet ſmell. It is a highly valuable medicine alſo, in all nervous complaints, and is eſteemed a prolonger of life, and a provocative to venery, the two great intentions of moſt of the medicines in uſe in the Eaſt.

CACHYMIA, in *Metallurgy*, a term uſed by Paracelſus for an imperfect metalline ore, as he expreſſes it, an immature metalline body, which is neither a ſaline ſubſtance nor a metal.

The cachymiæ may be divided into ſulphureous, as marcaſite ; mercurial, as arſenic or orpiment ; and ſaline, as all talcs.

CACIDARI, in *Ancient Geography*, a people of Scythia, on this ſide of Imaus, according to Pliny.

CACIQUES, in *Hiſtory*, a denomination anciently given in America to governors of provinces and generals of armies. It was alſo appropriated to the ſovereigns of the five great kingdoms into which the iſland of Hiſpaniola was divided when the Spaniards firſt viſited it, and alſo to the ſovereigns of the principalities or kingdoms in the other iſlands. Their power over the ſubject, which was hereditary, was abſolute, and they were regarded with almoſt idolatrous veneration. Beſides theſe, there were alſo ſubordinate chieftains, or princes, who were tributaries to the ſovereign of each diſtrict. They ſeem to have ſomewhat reſembled the ancient barons or feudatories of Europe ; holding their poſſeſſions by the tenure of ſervice. Oviedo (lib. iii. c 4.) relates, that they were under the obligation of perſonally attending the ſovereign, both in peace and war, whenever they were ſo commanded. We have already obſerved, that the dignity of the Cacique was hereditary : but if Martyr is to be credited, the law of ſucceſſion among them was different from that of all other people ; for he obſerves (P. Martyr, decad. iii. lib. 9.) that the Caciques bequeathed the ſupreme authority to the children of their ſiſters, according to ſeniority, and diſinherited their own offspring ; being certain, as he further obſerves, that, by this policy, they preſerved the blood-royal, which might not happen to be the caſe in advancing any of the children of their numerous wives. The account of Oviedo, however, is more probable ; he remarks (lib v. c. 3.) that one of the wives of each Cacique was particularly diſtinguiſhed above the reſt, and appears to have been conſidered by the people as the reigning queen, and that her children, according to the priority of birth, ſucceeded to the father's honours; but in default of iſſue by the favourite princeſs, the ſiſters of the Cacique, if no brothers ſurvived, took place of the Cacique's own children by his other wives. The principal Cacique was diſtinguiſhed by regal ornaments, and numerous attendants. When he travelled through his dominions, he was commonly borne on men's ſhoulders; and he was held in ſuch veneration, that if he ordered any of his ſubjects to caſt themſelves headlong from a high rock, to drown themſelves in the ſea, merely at his own ſovereign pleaſure, he was obeyed without a murmur; oppoſition to the ſupreme authority being conſidered not only as unavailing, but as impious. Their veneration extended even beyond death; for when a Cacique died, his body was embowelled, and dried in an oven, moderately heated, ſo that the bones and even the ſkin were preſerved entire. The corpſe was then placed in a cave with his anceſtors; and thus they intended to render, not the name alone, but the perſons alſo, of their worthies immortal. If a Cacique died in battle, and the body could not be recovered, they compoſed ſongs in his praiſe, which they taught to their children, and theſe ſongs formed a branch of thoſe ſolemnities which were called "Arietoes," conſiſting of hymns and public dances, accompanied with muſical inſtruments made of ſhells, and a ſort of drum, the ſound of which was heard at a great diſtance. Martyr relates (Decad. iii. lib. 9.) that on the death of a Cacique, the moſt beloved of his wives was immolated at his funeral. But Oviedo (lib. v. c. 3.) denies that this cuſtom was general among them.

CACOBÆ, in *Ancient Geography*, a people placed by Ptolemy in India, on this ſide of the Ganges.

CACOCHYMIA, from κακος, *bad*, and χυμος, *juice*, or *humour*, a word formerly employed by medical writers to denote a ſuppoſed morbid condition of the fluids of the living body.

CACODES, in the *Ancient Writers of Medicine*, a name given to ſeveral kinds of matter diſcharged from the human body, which had an ill ſmell. The offenſive matter voided ſometimes by vomit has this name, as alſo that evacuated by ſtool, and the diſcharge of foul ulcers.

CACOETHES, or Cacoethia. See Malignant.

CACONGO, in *Geography*, a kingdom of Africa, on the coaſt of Loango, ſituate between three conſiderable ports, much frequented by foreigners; viz. Loango, Cabinda, and Cacongo. The territory is in general flat, the air is more ſalubrious than that of Congo or Angola, and the ſoil alſo more fertile, on account of its frequent ſhowers, and its black mould, which, in the other adjacent kingdoms, is either chalky or ſandy. The inhabitants are likewiſe more civilized, though not leſs ſuperſtitiouſly addicted to the ſame heatheniſh rites, than their neighbours. They bear the character of a treacherous, fraudulent, turbulent, and cowardly race; but they are much employed in traffic with the Europeans, and eſpecially the Dutch, from whom they purchaſe a great variety of European goods, as coarſe cloths, knit caps, hatchets, and other iron tools, linen, and other commodities, which they exchange for ſlaves at Congo, Angola, and other African ſtates. This country is governed by its own hereditary princes, but under the protection of the kings of Loango, to whom they were formerly vaſſals, though they have ſince ſhaken off the yoke. The chief town is of the ſame name, and it is ſituated in S. lat. 4° 45′. E. long. 13°.

Cacongo, one of the chief rivers of the above kingdom, the others being the Kaja and the Cabinda. It runs 4 leagues S. of the Kaja, and 7 to the N. of the Cabinda, and is ſaid to be navigable by boats of 10 tons burden. This river runs through almoſt the whole length of the kingdom from eaſt to weſt, and after a courſe of about 80 or 90 miles, falls into the ſea, near the town of Cacongo. About 4 miles from its mouth is the town, or rather village of Melemba, where the ſea makes a kind of ſemicircular bay, which affords a convenient road for the veſſels that traffic thither, the whole coaſt between the Cacongo and Zaire being extremely dangerous and full of rocks and ſhelves. The lands on each ſide are fertile and delightful, and abound with elephants' teeth, which the Membates, who are ſituated on the other ſide of the Zaire fetch and carry to the port of Pinda, where the Portugueſe, or any other Europeans, buy and export them.

CACOORS, in *Botany*, a ſpecies of Mimosa, which ſee. The ſeeds of this plant are mentioned by ſir Hans Sloane as being thrown aſhore on the Hebrides and Orkneys. See Molucca Bean.

CACOPHONIA, compounded of κακος, evil, and Φωνη, voice, in *Grammar* and *Rhetoric*, the meeting of two letters, or ſyllables, or even of two words, which yield an uncouth and diſagreeable ſound.

Cacophonia, in *Medicine*, denotes a vice or depravation of the voice, or ſpeech; of which there are two ſpecies, *aphonia* and *dyſphonia*.

CACOPHONY, Gr. in *Muſic*, the combination of many ſounds ill choſen or out of tune, noiſe.

CACORLA, in *Geography*, a little town in Spain, in the country of Jaen, belonging to the archbiſhop of Toledo, 4 leagues E. of Ubeda.

CACOSIN, a town of the iſland of Cuba, 50 miles N.N.W. of Bayamo.

CACOUCIA, in *Botany*. La Marck Encyc. Illuſt. Pl. 359. Aublet. Guian. p. 450. t. 179. Juſſ. 320. (Schouſbæa, Willdenow 857.) Claſs and order, *decandria monogynia*. Nat. ord. *Onagræ* Juſſ. *Myrti* Lam.

Gen. Ch. *Cal.* ſuperior, bell-ſhaped, coloured, five-pointed, deciduous. *Cor.* petals five, ſharply egg-ſhaped, inſerted at the diviſions of the calyx. *Stam.* filaments very long, inſerted on the calyx below the inſertion of the petals; anthers ovate. *Piſt.* germ inferior, angular; ſtyle ſimple, as long as the ſtamens; ſtigma acute. *Peric.* a kind of berry, five-angled, ſomewhat ſpindle-ſhaped, almoſt woody, pulpy within, covered with a white ſkin or aril.

Eſſ. Ch. *Calyx* bell-ſhaped, five-parted, bearing the corolla; petals five; berry five-angled, one-ſeeded; ſeed arilled.

Obſ. Nearly allied to Combretum and Fuchſia, but differing in the fruit.

Species, C. *coccinea*. A perennial ſhrub, with a ſtem about ſix or ſeven inches in diameter, branched, climbing to the top of the higheſt trees, from which its branches hang down clothed with leaves and flowers. *Leaves* alternate, ovate, acuminate, very entire, veined, green, firm, with an even ſurface, on very ſhort pet oles. *Flowers* ſcarlet, ſeſſile, ſcattered in long terminal ſpikes, with a long ſtraight pointed bracte to each flower. La Marck. A native of Cayenne.

CACTI, the third natural order in the fourteenth claſs of Juſſieu, with the following character. *Calyx* ſuperior, divided at the apex. *Petals* definite or indefinite, inſerted at the top of the calyx. *Stamens* definite or indefinite, with the ſame inſertion as the petals. *Germ* inferior, ſimple; ſtyle ſingle; ſtigma divided. *Berry* inferior, one-celled, many-ſeeded; the ſeeds attached to its inner ſurface. *Stem* ſhrubby or arboreſcent; *leaves* alternate or none. It contains only two genera, *Ribes*, with definite petals and ſtamens, and *Cactus*, with petals and ſtamens indefinite. Juſſieu obſerves that theſe two genera, notwithſtanding the difference in the number of their ſtamens and petals, are cloſely connected by their inferior germen, ſingle ſtyle, and one-celled fruit, with the ſeeds attached to its inner ſurface, and that the affinity is ſtrengthened by the ſimilar ſtructure of the ſpines in ſeveral of their ſpecies. La Marck adds to this natural order Tetragonia and Meſembryanthemum, which Juſſieu arranges under Ficoideæ, his fifth order of the ſame claſs.

Cacti, in *Entomology*, a ſpecies of Coccinella, with the wing-ſheaths black, and two red ſpots. Fabricius. Found on the cacti of America.—Alſo, a ſpecies of Coccus.

CACTOIDEÆ, in *Botany*, the fifth natural order of Ventenat's fourteenth claſs, who places under it only the Linnæan genus Cactus, conſidering Ribes as more properly belonging to the Saxifrageæ, but forming the connecting link between that order and Cactus. This able botaniſt has fallen into a ſlight abſurdity in calling an order which contains only the genus Cactus, Cactoideæ; which in fact is only ſaying that Cactus is like itſelf.

CACTUS, (κακτος, Gr. the name of a plant deſcribed firſt by Theophraſtus, and afterwards by Dioſcorides, Athenæus, and Pliny. Theophraſtus, whom the ſucceeding writers have nearly copied, ſpeaks of it as a plant not indigenous in Greece, and peculiar to Sicily, producing from the root ſeveral creeping ſtems, with a broad and prickly leaf, which, when ſtripped of their bark, are eaten either freſh or pickled; with an upright ſtem beſides, which he ſays is called pternix, and is eaten freſh but not pickled; and having a prickly pericarp, called aſculia, which is likewiſe eatable when ſeparated from the down of the ſeeds, and reſembles the head of a palm. Moſt of the earlier modern botaniſts, ſupported by the authority of Athenæus, ſuppoſe it to be the ſame plant which the Greeks called κιναρα, and the Romans Carduus, the Cynara ſcolymus of Linnæus, or common artichoke; but Bodæus a Stapel ſtrongly inſiſts, that it muſt be another plant not aſcertained by modern botaniſts. See his Notes on Theophraſtus, p. 627.—629, where he has corrected the corrupt texts of Theophraſtus and Athenæus, by comparing them with each other, and with the Latin of Pliny. What are called by Theophraſtus creeping ſtems, are probably nothing more than the ſtrong midrib of the broad prickly leaves.) Linn. gen. 613. Schreb. 838. Willden. 966. Gært. 799. Juſſ. p. 311. Vent. vol. 3. 291. Claſs and order, *icoſandria monogynia*. Nat. ord. *Succulentæ* Linn. *Cacti* Juſſ. *Cactoideæ* Vent.

Gen. Ch. *Cal.* ſuperior, imbricated, tubular, deciduous. *Cor.* petals numerous, diſpoſed in ſeveral ranks; the *outer* ones ſhorter, the *inner* rather larger. *Stam.* filaments numerous, inſerted into the calyx; anthers oblong. *Piſt.* germ inferior; ſtyle cylindric; ſtigma headed, multifid. *Peric.* berry oblong, umbilicated at its ſummit, one-celled. *Seeds* numerous, bedded in pulp.

Eſſ. Ch. *Calyx* ſuperior, imbricated. *Corolla* of many petals. *Berry* one-celled. *Seeds* numerous.

Obſ. Linnæus, on account of the conformity in the parts of fructification, has united in one genus a numerous tribe of ſucculent plants, differing greatly from each other, and many of them from all other plants, in their general ſtructure and habit, which former botaniſts had diſtributed into ſeparate genera, under the names of Melocactus, Cereus, Opuntia, and Pereſkia. He obſerves, that Melocactus is monocotyledinous, and Opuntia dicotyledinous; but that nevertheleſs they are of the ſame natural genus. Juſſieu mentions the circumſtance on the authority of Linnæus, but gives no farther information on the ſubject, referring the germination of Melocactus, as well as the exiſtence and nature of the periſpermum in all the Cacti, to future inquiry.

* *Echinomelocacti*, turks'-cap, or melon-thiſtles; of a roundiſh form, in ſome degree reſembling a melon.

Species 1. C. *mammilaris*, ſmaller melon thiſtle. Linn. Sp. Plant. (Echino-melocactus minor, Herm. Par. 136. tab. 136. Ficoides, Pluk. Alm. 184. tab. 29. f. 1. Comm. hort. 1. p. 105. t. 55. Brad. ſuccul. 3. p. 11. tab. 19.) "Roundiſh, covered with ovate, bearded tubercles." The body of the plant conſiſts of a roundiſh fleſhy ſubſtance, ſeſſile, about the ſize of a man's fiſt, without remarkable angles, but beſet on all ſides with numerous conic tubercles, which are cottony at their ſummit, and terminated by ſmall diverging ſpines. There is alſo a ſlight cottony down between the tubercles. The flowers are ſmall, whitiſh, ſcattered about the plant between the tubercles. The berries are of a purpliſh blue colour, according to La Marck, but are ſaid by Miller to be of a fine ſcarlet, and continue freſh upon the plant through the winter. They have an agreeable flavour, and are very good to eat, eſpecially when properly dreſſed. Boſc. A native of South America, among rocks. 2. C. *glomeratus*, cluſtered melon-thiſtle. La Marck. Plum. Sp. 19. tab. 201. f. 1. "Ovate, downy, compound, growing cloſe together, covered with papillary tubercles." In ſeveral reſpects it reſembles the preceding, but differs from it in growing ſeveral together in a cloſe group, in its glaucous colour, and very white abundant down, in its ſize, which does not exceed that of a pullet's egg, and in the red colour of its flowers. Obſerved by Plumier at St. Domingo, and deſcribed by La Marck from his MSS. It appears to be the childing of Miller, though that is ſaid by him to be rather larger than the mamilloſa. 3. C. *melocactus*, great melon-thiſtle. Linn. Sp. Pl. (Melocactus, Bauh. Pin. 384. Tourn. 653. Echinomelocactus, Cluſ. Exot. tab. 92. Lob. ic. 2. p. 24. Bradl. Succ. 4. p. 9. tab. 32.) "Roundiſh, with fourteen angles." A roundiſh maſs, ſometimes more than a yard in circumference, and in its native country almoſt twice as large; conſiſting internally of a ſoft, green, fleſhy ſubſtance, full of moiſture; deeply divided into fourteen or fifteen regular, ſmooth, flat-ſided parts; the ridge of the ribs furniſhed with a row of cluſtered, ſtiff, ſtraight, diverging ſpines, about an inch long, and red at their ſummit. Flowers red, ſituated at the top of the plant. A native of South America. 4. C. *coronatus*, crowned melon-thiſtle. La Marck. "Ovate with twenty angles; crowned with a cottony pileus or cap." About a foot high, fleſhy; *ribs* oblique or a little ſpiral; their ridges beſet with a row of cluſtered diverging ſpines, about ſix or ſeven lines long, and generally a little curved; *cap* three inches and a half in diameter, compoſed of a white, very cloſe cottony down, interſperſed with cluſters of red ſpines, which are ſtiff as the briſtles of a bruſh, but not prickly. A native of South America. 5. C. *nobilis*, noble melon-thiſtle. Linn. Mant. "Roundiſh, with fifteen angles; ſpines broad, recurved." This ſpecies ſeems to hold a middle ſpace between the laſt two; but its external ſurface is entirely red. It varies in its form, being ſometimes oval or conic, and ſometimes more globular. Its ribs are oblique or ſpiral, and its ſpines long, white as ivory, and a little curved. A native of St. Domingo, among rocks on the coaſt. Obſ. Mr. Miller makes four diſtinct ſpecies of the great melon-thiſtle, and thinks that if the iſlands in the Weſt Indies were examined, many more would be found. Profeſſor Martyn conſiders them as only varieties. La Marck has made three ſpecies which we have adopted: though from the deſcription in different authors, it is not eaſy to determine which are ſpecies and which varieties. They grow from apertures in the ſteep ſides of rocks in the hotteſt part of America, and ſeldom live long when tranſplanted into a better ſoil. In times of great drought, the cattle rip them up with their horns, tear off the outſide ſkin, and greedily devour the fleſhy moiſt part. The fruit is an agreeable acid, and is frequently eaten in the Weſt Indies. Miller.

** *Erect cereuſes*, ſupporting themſelves. Torch-thiſtles, or torch-wood.

6. C. *cylindricus*, cylindric torch-thiſtle. La Marck, Juſſieu. "Erect, weak, cylindric, not angular, but reticulated on their ſurface, with decuſſated furrows." La Marck. "Teſſelated with regular, rhomb-ſhaped, little areas, bearing ſpines on their elevated centre." Juſſ. Spines cluſtered, whitiſh, very ſharp. A native of Peru. 7. C. *trigonus*, three-ſided torch-thiſtle. La Marck. (C. petaiaya. Linn. Syſt. Nat. Jacq. Americ. 151.) "Stem erect, triangular, with ſcarlet, leafy fruit." Nearly allied to C. triangularis of the next diviſion; but differs from it in having a *ſtem*, which ſupports itſelf to the height of eight or ten feet; and, though it riſes ſtill higher when it obtains the ſupport of a neighbouring tree, does not attach itſelf by any radicle. *Flower* whitiſh, ſix inches in diameter, with ſcarcely any ſmell, opening in the night. *Fruit* of a ſhining ſcarlet colour on the outſide, furniſhed with obtuſe leaflets, which are irregularly notched at the ſummit; pulp white, fleſhy, ſweet: ſeeds ſmall, black, ſhining. A native of Carthagena, and other parts of South America. There is a variety which has a ſtraight trilateral *ſtem*, almoſt as thick as a man's body, furniſhed with blackiſh, very ſharp, cluſtered ſpines, about two inches long; dividing at the top into triangular, fleſhy branches, of a delicate green colour, undulated, or ſcolloped at their angles, and diſpoſed in a large ſpreading panicle. From the upper branches riſe large beautiful white *flowers*, a little odorous, ſtanding on a germ, furniſhed with ſome ſcaly leaves. The *fruit* is yellowiſh, ſmooth, of the form and ſize of a large apple, with a white ſweet pulp, filled with ſmall blackiſh ſeeds. Obſerved by Plumier at St. Domingo. La Marck obſerves, that it may perhaps be diſtinct from Jacquin's plant; but as they agree in ſo many characters, he has placed them together, that he may not multiply ſpecies without neceſſity. 8. C. *paniculatus*, La Marck. (Melocactus arboreſcens. Plum. Sp. 19. Tournef. 653. Cactus brachiatus, Burm. Amer. tab. 192.) "Trunk erect, panicled at the ſummit with quadrangular, jointed branches; petals round, white, marked with red lines; fruit tubercled, yellowiſh." This plant, in its habit and ſize, exactly reſembles the variety of the preceding ſpecies; but the interior petals are ſcarcely larger than a finger nail, crenulated, very white, pencilled with ſmall red lines. *Stamens* entirely white: fruit ovate, a little larger than a gooſe's egg, with reddiſh ſpinous tubercles, and full of ſmall ſeeds of a dark cheſnut colour. A native of St. Domingo, deſcribed by La Marck from the MSS. of Plumier. 9. C. *tetragonus*, four-ſided torch-thiſtle. Linn. Sp. Pl. "Quadrangular, long, erect; angles compreſſed." *Stem* ſeldom more than four or five feet high, branched, deeply and widely cut in a longitudinal direction, ſo as to give it the appearance of having four thin wings. A native of South America. 10. C. *pentagonus*. Linn. Sp. Pl. "Erect, long, jointed, with about five angles." *Stem* ſlender, feeble, but upright; internodes about a foot long: cluſters of ſpines without any ſenſible down at their baſe. A native of America. 11. C. *hexagonus*, Linn. Sp. Pl. (Cereus Surinamenſis, Ephem. n. c. 3. p. 349. tab. 7 and 8. Herm. Par. 116. Raj. Dendr. 23. C. maximus Americanus, Bradl. Succ. 1. p. 1. tab. 1. Melocactus, Plum. Sp. 19. Burm. Amer. tab. 191.) "Erect, long, with ſix angles; angles diſtant." *Stem* thirty or forty feet high, not branched if the top be not injured, and it have room to grow; but whenever the ſtem is cut or injured, it puts out ſhoots from the angles, immediately under the wounded part, and frequently one or two lower down; theſe, if they are not cut off, form diſtinct ſtems, and grow upright, but are ſeldom ſo large as the principal ſtem. *Flowers* from the angles on the ſide of the ſtem, as large as thoſe of hollyhock, on a thick, fleſhy, ſcaly, round, channelled, and hairy peduncle; calyx prickly, cloſely ſurrounding the corolla, green, with purple ſtripes; inner petals white, and crenated at their extremity. Miller. A native of Surinam, whence it was introduced into Holland, and bore flowers in 1681. It was cultivated in England in 1690, and has been the moſt common ſort in the Engliſh ſtoves, but has not borne fruit, nor often produced flowers. 12. C. *heptagonus*, Linn. Sp. Pl. "Erect, oblong, with ſeven angles." *Stem* perennial, one or two feet high. A native of America. 13. C. *repandus*, Linn. Sp. Pl. Brown. Jam. 238. (Cereus altiſſimus gracilior, Sloan. Jam. 197. Hiſt. 2. p. 158. Raj. Dend. 22. Trew. Ehret. t. 14.) "Erect, long, octangular; angles compreſſed, waved; ſpines longer than the wool." *Stem* rather ſlender. *Fruit* yellow without, with ſcattered aſperities; ſnow-white within, containing many black ſeeds. A native of South America. 14. C. *lanuginoſus*, Linn. Sp. Pl. (Cereus curaſſavicus, Herm. Parad. tab. 115.) "Erect, long, with about nine angles; angles obſolete; ſpines ſhorter than the wool." *Stem* rather glaucous; ſpines intermixed with a yellowiſh wool. *Flowers* greeniſh. *Fruit* about the ſize of a walnut, red externally, and without ſpines. A native of Curaſſou. 15. C. *royeni*, Linn. Sp. Pl. (Cereus, Boer. Lug. 1. p. 293. Herm. 48. Par. 115.) "Erect, jointed, with nine angles; diviſions between the joints ſomewhat egg-ſhaped; ſpines the length of the wool." Perhaps only a variety of the preceding. *Stem* long; channels between the angles ſhallow, woolly, and very ſpinous; ſpines long, and yellowiſh; down pale white. *Fruit* red, and without ſpines. A native of America. 16. C. *peruvianus*, Linn. Spec. Pl. (Cereus peruvianus, Bauh. Pin. 458. Lob. ic. 2. p. 25. Cierge epineux, Act. Acad. 1516. p. 146.) "Erect, long, with about eight angles; angles obtuſe." *Stem* branched in its upper part; angles furniſhed with ſmall cluſters of brown, very ſlender, diverging ſpines, proceeding from a cottony tuft. *Flowers* lateral, almoſt ſeſſile, ſolitary, whitiſh, five or ſix inches in diameter; ſcales of the calyx fleſhy, green, purpliſh at their extremity; petals about thirty, lanceolate, white, with a tint of bright purple at their ſummit; ſtamens very numerous, ſhorter than the petals; anthers yellowiſh; ſtyle the length of the ſtamens; ſtigma with ten ſtraight diviſions. There is now, or at leaſt in 1803, there was growing at the Muſeum of Natural Hiſtory in Paris, a ſuperb plant of this ſpecies near forty feet high. It was preſented more than a hundred years ago, by Hotton profeſſor of botany at Leyden to Fagon firſt phyſician to Lewis XIV., and ſuperintendant of the royal garden, when it was only four or five inches high. The growth of each year is diſtinguiſhed by a contraction of the ſtem; each of theſe contractions is at firſt very deep, and remains nearly the ſame for ſome years, when it gradually diminiſhes, and at length is entirely obliterated. This plant grew at firſt about a foot and a half in a year, and when it was fourteen years old was twenty-three feet high and ſeven inches in diameter. At the age of eleven it produced its firſt two branches, about three feet from the ground. A year after it produced its firſt flowers, and has continued to flower ever ſince. See Dict. Agric. Nouv. Encyclopedie. A native of Peru. 17. C. *fimbriatus*, La Marck. Burm. Amer. tab. 195. f. 1. "Erect, long,

with about eight angles; petals fringed, fruit ſpinous, ſcarlet." *Stems* growing many together, about the thickneſs of a man's thigh, and from eighteen to twenty feet high; conic and very ſpinous at their ſummit, beſet at their angles with cluſters of white, long, very ſharp ſpines. *Flowers* at the ſummit of the ſtem, rather large; ſtyle much longer than the ſtamens. *Fruit* globular, fleſhy, nearly the ſize of an orange, of a bright ſhining red colour, rough with tubercles and armed with whitiſh, ſharp ſpines; fleſh of a flame colour, very tender, of an agreeable, acidulous flavour, and filled with numerous black ſeeds. La Marck from the MSS. of Plumier. A native of St. Domingo. 18. C. *polygonus*, La Marck. Burm. Americ. tab. 196. "Erect, branched, with eleven angles; fruit warty, red." This ſpecies is nearly allied to C. repandus, but is diſtinguiſhed from it by the number of its angles, and by the red colour of its fruit, and of the down on its ſummit. *Stem* perennial, about ten feet high, and ſix or ſeven inches in diameter; angles waved, and beſet with cluſters of ſmall ſpines: bark greyiſh, thick, covering a woody ſubſtance nearly as durable as oak, with an abundant, ſucculent, greeniſh pith. *Branches* from the ſummit of the ſtem, ſtraight, long, a little larger than a man's arm, fleſhy, greeniſh, with angles and ſpines ſimilar to thoſe of the ſtem, terminating in the ſhape of a cone and cloathed near the ſummit with a very red woolly down. *Flowers* growing near the ſummit, ſolitary, white, about the ſize of a crown piece. *Fruit* fleſhy, the ſhape and ſize of a fig, reddiſh brown without, ſucculent, nearly inſipid, ſeeds ſmall, black. La Marck from the MSS. of Plumier. A native of St. Domingo. 19. C. *menſarum*, Encyc. Diction. Agricul. Boſc. Nouv. Dict. Thierry de Menoville, Traité de la Culture du Nepal 1786. "Erect, with many angles, branched; fruit without ſpines, ſcaly, brown without, red without." Nearly allied to the preceding, but leſs in ſize, not ſo much branched or ſpinous, and of a darker green colour. *Flowers* red. A native of Guaxaca and Theguacan in South America, where it is known by the name of Pitahiaha, and is greatly eſteemed by the natives on account of its delicious fruit. Linnæus has applied the ſame name to a very different ſpecies, which La Marck, whom in this inſtance we have followed, has called trigonus. 20. C. *aurantiiformis*, Encyc. Dict. Agric. Boſc. Thierry. "Erect, with many angles, branched; fruit ſpherical, gold-coloured." Habit of the preceding. *Flowers* white. *Fruit* containing a white, inſipid, but refreſhing pulp. A native of St. Domingo. 21. C. *divaricatus*, La Marck. (Melocactus, Plum. Spec. 19. Burm. Am. Tab. 193.) "Very ſpinous; trunk erect, ſtriated, branched at the top; branches ſtraight, ſtriated, ſtanding out on all ſides; fruit gold-coloured, tubercled." *Stem* a little thicker than a man's thigh, three or four feet high, greeniſh; formidably armed with numerous, very ſharp, diverging ſpines. *Flowers* lateral, near the ſummits of the branches. *Fruit* globular, a little larger than a man's fiſt; pulp white, ſweetiſh; ſeeds ſmall, brown. A native of St. Domingo.

* *Creeping Cereuſes with lateral roots.*

22. C. *grandiflorus*, great or night-flowering, creeping cereus, Linn. Spec. Plant. (Cereus ſcandens minor, Miller Icon. Tab. 90. C. gracilis ſcandens ramoſus, flore ingenti, &c. Trew. Ehr. Tab. 31, 32. Eph. Nat. Cur. 1752, vol. ix. app. 184. Tab. 11, 12, 13. C. americanus, major articulatus. Volk. Heſp. 1. 133. t. 134.) "Creeping, with about five angles." *Stem* cylindric, branched, greeniſh; angles not very prominent; ſpines ſmall, cluſtered, diverging. *Flowers* lateral, about ſix inches, ſometimes near a foot in diameter, ſweet-ſcented; calyx large, long, tubular, ſcaly below, compoſed in its upper part of ſtraight, linear, pointed, yellowiſh leaflets, diſpoſed in ſeveral rows, and forming a kind of ray to the flower; petals white, numerous, lanceolate, diſpoſed in ſeveral rows, in a beautiful roſaceous form; ſtyle a little longer than the ſtamens; ſtigma with twenty diviſions. The flowers begin to open between ſeven and eight o'clock in the evening, uſually in the month of July, are fully blown by eleven, and by three or four in the morning they begin to fade, and ſoon after hang down in a ſtate of irrecoverable decay. When the plants are large, ſeveral flowers will open in the ſame night, and there will be a ſucceſſion of them for ſeveral nights together. *Fruit* a little larger than a gooſe's egg, covered with ſcaly tubercles, fleſhy, orange or red, of an agreeable acid flavour; ſeeds very ſmall. A native of Jamaica, Vera Cruz, and St. Domingo. 23. C. *flagelliformis*, pink-flowered, creeping cereus. Linn. Spec. Pl. Kniph. Cent. 1. Tab. 12. Knorr. Del. 1. f. 8. Curtis Bot. Mag. 17. 54. (Cereus minor ſcandens, flore purpureo, Ehr. Sel. 2. f. 2. Trew. Ehret. t. 30. Ficoides Americanum, Pluk. Alm. 148. t. 158. f. 6. Sloane Jam. 197. Hiſt. 2. p. 258.) "Creeping, with ten angles." *Stems* cylindric, channelled, about the ſize of a man's little finger, from three to five feet long; ſpines numerous, weak, cluſtered, proceeding from elevated points or tubercles. *Flowers* lateral, ſeſſile, oblong, of a lively pink colour; calyx coloured, tubular, its lower part compoſed of ſmall, ſtraight, ſharp ſcales; petals and upper leaves of the calyx, oblong, acuminate, of a ſimilar colour, and diſtinguiſhed from each other only by their ſize; ſtamens the length of the interior petals; filaments very white; anthers ſmall, yellow; ſtyle the length of the ſtamens, ſtigma ſcarcely divided. It produces more flowers than the preceding ſpecies, which keep open three or four days, if they have not too much warmth. The fruit had been produced, but not ripened, at Chelſea, in the time of Mr. Miller. A native of the warmer climates of South America. 24. C. *paraſiticus*. Paraſitic creeping cereus. Linn. Spec. Pl. "Creeping, round, ſtriated, without ſpines." Profeſſor Martyn ſuſpects it to be the root of ſome ſpecies of Epidendrum, but La Marck gives the following ſynonyms and deſcription. Cactus repens paraſiticus inermis aphyllus, ramoſus, propendens. Burn. Jam. 238. Opuntia minima, Plum. Sp. 6. Burm. Amer. tab. 197. f. 2. *Stems* ſlender, cylindric, jointed, branched, climbing or pendant from the trunks of large trees: when young beſet with prickles, but loſing them when old, and retaining only the remnants of them, which form greyiſh, ſharp tubercles. *Flowers* ſmall, lateral, ſeſſile. *Fruit* not ſo large as a common pea. A native of St. Domingo. 25. C. *pendulus*, ſlender, creeping cereus. Willden. Martyn, Swartz. 77. Burm, Jam. 238. (Caſſyta baccifera, I. Mil. Illuſt. Caſſyta polyſperma, Ait. Cat. Hort. Kew. Rhipſalis Caſſytha, Gært. 1. p. 137. Tab. 28. f. 1.) "Branches in whorls, round, ſmooth, without ſpines." A native of Jamaica, hanging from the largeſt trees to the length of two or three feet. Gærtner obſerves that, though ſir Joſeph Banks had hinted to him in a letter that it ought to be referred to the genus cactus, he was induced to keep it ſeparate, becauſe the embryo of cactus is ſlightly ſpiral, and the albumen of the ſeed farinaceous; whereas there is no albumen in this, and the embryo fills the whole cavity of the ſeed. 26. C. *triangularis*, triangular creeping cereus, Linn. Sp. Pl. Brown. Jam. 468. Jacq. Amer. 152. 75. Act. Helv. 5. 268. t. 2. (Cereus Bradl. Suc. 1. p. 4. t. 3. Eph. Nat. Cur. 1752. v. ix. app. 199. tab. 10. f. 14. 1754. v. ix. app. 349. t. 3. Ficoides, Pluk. Alm. 147. t. 29. f. 3.) "Creeping, triangular." Perennial. *Stems* long, climbing up trees,

and ſupporting themſelves by lateral roots, branched, twiſted, jointed, oblong, fleſhy, near three inches in diameter, contracted at the joints, with ſmall cluſters of ſhort ſpines on their edges. *Flowers* large, white, lateral, ſolitary; the lower and tubular part of the calyx conſiſting of ſhort ſcales, green at their baſe, and reddiſh at their ſummit; the others longer and ſharper, with a yellowiſh point. *Fruit* ovate, the ſize of a gooſe's egg, red without, and within marked with projecting tubercles, which are the remnants of the fallen ſcales of the calyx, ſuperior in flavour to that of any other ſpecies. A native of the Antilles, Jamaica, Guiana, and Brazil. It is cultivated in the iſland of Barbadoes for the ſake of its fruit. There is a variety with more ſcaly fruit, red without and white within, of a ſweetiſh but leſs pleaſing taſte.

Obſ. The plants of this and the preceding diviſion have been called *Cereuſes*, from *cera*, *wax*, on account of the fancied reſemblance of the ſtems of ſome of the ſpecies to a wax candle; and torch thiſtles, or torch wood, becauſe the Indians uſe them as flambeaux. The very improper appellation of thiſtles is derived from their prickles.

**** *Opuntias*, Indian figs, or prickly pears, compoſed of articulated diviſions growing one upon another, and commonly compreſſed or flattened at their ſides. Theſe plants are ſaid to be proliferous, becauſe the parts of the ſtem are ſeparated from each other by ſo deep a contraction, that they ſeem rather diſtinct individuals than ramifications of the ſame plant. 27. C. *moniliformis*. Necklace Indian fig. Linn. Sp. Pl. (*Melocactus*, Plum. Sp. 19. ic. 198. Burm. Am. tab. 198.) "Proliferouſly jointed, diviſions globular, ſpinous, glomerate." From the root, which is reddiſh, branched, and rather woody, there ſprings firſt a globular ſtem about the ſize of a green walnut, fleſhy, tender, of a lively green, and beſet with long, brown, ſharp ſpines; from this globe ſoon proceed two others exactly ſimilar, each of which produces two others, and ſo on ſucceſſively, till the whole forms an aſſemblage of globes, ſpread on the ground, and united together like the pearls of a necklace. *Flowers* on the upper globular diviſions red, ſolitary, ſeſſile. *Calyx* furniſhed with acute ſcales at its baſe; ſtyle much longer than the petals. *Fruit* bright red, a little larger than a pigeon's egg; pulp white, tender, of a pleaſant acidulous taſte. *Seeds* ſmall, of a gold colour. La Marck from the MSS. of Plumier. 28. C. *opuntia*, common Indian fig, or prickly pear, Linn. Sp. Pl. Brown Jam. 237. n. 2. Allion Pied. n. 1932. Plenck. Ic. t. 373. Gært. t. 138. f. 3. La Marck Illuſt. Pl. 114. (*Opuntia vulgaris*, Bauh. Hiſt. i. p. 154. Mil. Icon. 191. Tourn. 239. Plum. Sp. 6. Hall. Helvet. ii. 1099. *Ficus indica*, Lob. Ic. ii. p. 241.) "Proliferouſly jointed; diviſions ovate, compreſſed, ſpines briſtle-ſhaped." Six or eight feet high. *Diviſions* about a foot long, eight inches broad, and one inch thick, fleſhy, rounded at their edges, green, firm, attenuated at their baſe, appearing rather like leaves than diviſions of the ſame ſtem, and having been ſometimes, but erroneouſly, ſo called. As the plant grows old, the lower diviſions increaſe more in thickneſs than in length and breadth; and the joints ſwell and enlarge till they equal the other parts of the ſtem, and form a cylindric trunk. The lower diviſions ſometimes hang down ſo as to touch the ground, and take root one after another, till at length a large ſpace is covered by a ſingle plant. The young ones have on their ſurface numerous fleſhy, cylindric, pointed protuberances, ſeveral lines in length, and at leaſt one line in diameter, which do not remain more than two months, and are ſucceeded by cluſters of ſpines. Theſe are conſidered by La Marck as proper leaves, but are ſaid by Lancry (Encyc. Dict. Agricult.) to be rather rudiments of leaves. *Flowers* yellowiſh, generally on the upper edge of the diviſions, but ſometimes on their ſides; petals about ten; ovate-wedge-ſhaped; ſtamens not longer than the petals, irritable, when touched, before they ſhed their pollen; ſtigma with from five to ten diviſions. *Fruit* nearly the ſhape of a fig, generally of a deep red colour, encloſing a red ſucculent, ſweetiſh pulp, which is ſaid to make the urine of thoſe who eat it red as blood, without producing any other ſenſible effect. A native of America, like all the other ſpecies, but is now naturalized in many parts of the ſouth of Europe, and on the coaſt of Barbary. A variety of it is found in America, as far north as Nova Scotia and Newfoundland, which is larger than the common ſort, and armed with ſtronger ſpines; the fruit alſo is much larger, and of a deeper purple colour, the diviſions rounder and more compreſſed, and the whole plant more upright. Mr. Miller's figure is taken from a ſpecimen of this variety ſent him by Mr. Peter Collinſon. 29. C. *Ficus indica*, Linn. Sp. Pl. oblong Indian fig. (*Opuntia folio oblongo media*, Tourn. 239.) "Proliferouſly jointed, diviſions ovate-oblong, ſpines briſtle-ſhaped." This has the branches growing more upright than the former, and has longer ſpines; the fruit is alſo larger and of a deeper purple colour. It is the moſt common ſort in Jamaica. 30. C. *tuna*, Linn. Sp. great Indian fig. (*Opuntia major validiſſimis ſpinis*, Tournefort 239. Sloane Jam. 103. Hiſt. ii. p. 149. t. 244. f. 1. *Tuna major*, Dill. Elt. 396. t. 295. f. 380.) "Proliferouſly jointed; diviſions ovate-oblong; ſpines awl-ſhaped." This has ſtronger branches than the preceding, with larger whitiſh ſpines. The flowers are bright yellow. There is a variety with ſtrong black ſpines and purpliſh fruit. La Marck conſiders the laſt two as only varieties of C. *opuntia*, and adds, as another variety, the *opuntia minima folio ſubrotundo* of Tournefort, which is rarely more than half a foot high, with diviſions two or three inches broad, and few ſpines. 31. C. *coccinellifer*, Cochineal Indian fig. Linn. Sp. Pl. Brown Jam. 237. (*Opuntia maxima*, Sloane Jam. 194. Hiſt. ii. p. 152. t. 8. f. 1, 2. *Tuna*, Dill. Elt. 399. t. 297. f. 383. *Ficus indica*, Pluk. Alm. 146. t. 381. f. 2.) "Proliferouſly jointed; diviſions ovate-oblong, nearly without thorns." About ſix feet high. *Diviſions* a foot long, five or ſix inches broad, and near two inches thick; ſpines few and harmleſs. *Flowers* few, blood-red; ſtamens longer than the petals, by which it is deciſively diſtinguiſhed from the laſt three ſpecies. A native of Mexico and other parts of South America. This ſpecies is ſaid by Linnæus, and has been generally ſuppoſed by others, to be the plant on which the Cochineal inſect feeds; but Thiery de Menonville is of a different opinion, founded on his perſonal obſervations at Mexico. 32. C. *teſtudinis crus*, tortoiſe-leg Indian fig, Thiery. "Proliferouſly jointed; diviſions oblong, compreſſed, but in a zigzag manner, woody; ſpines numerous, very large, white; fruit ſpherical, green." In the courſe of a year it will grow to the height of ten feet, and produce thirty ſhoots; and in three or four years acquires the ſize of a tree. *Diviſions* ſituated perpendicularly one upon another, and ſo bent as to produce, in the ideas of the coloniſts, a reſemblance of the paws of a tortoiſe in the act of walking. *Flowers* aurora-coloured. *Fruit* unpleaſantly acid. A native of ſteril places in St. Domingo. 33. C. *luteus*, yellow Indian fig, Thiery. "Proliferouſly jointed; diviſions compreſſed, ovate; woody, nearly without ſpines; flower and fruit yellow; petals ſpreading." A beautiful plant growing to the ſize of a tree. *Fruit* egg-ſhaped, of an agreeable flavour. 34. C. *campechianus*, Thiery. "Proliferouſly jointed; diviſions compreſſed, oblong, woody, with few ſpines; flower and fruit red; ſtyle longer than the ſtamens and petals;

petals connivent." Smaller than the laſt two. *Diviſions* oblong, dark green, ſmooth, ſhining; ſpines not more than two together. *Petals* of a bright reddiſh purple colour; ſtigma ſulphur-coloured, with ſix diviſions. *Fruit* the ſize of a pigeon's egg, truncate at the ſummit, blood-red throughout, rather inſipid, armed with ſpines. A native of St. Domingo. 35. C. *ſylveſtris*, wild cochineal Indian fig, Thiery. "Proliferouſly jointed; diviſions compreſſed, very ſpinous; flower and fruit red; petals ſpreading." Not riſing into a tree, and ſeldom exceeding eighteen or twenty feet in height. *Diviſions* pale green or yellowiſh, from ten to fifteen inches long, and from ſeven to ten broad: ſpines white, from ten to fifteen in a cluſter, croſſing each other ſo as almoſt to cover the ſurface. *Fruit* the ſize of a walnut. A native of the inner parts of Mexico, and the moſt common ſpecies from Theguacan to Guaxaca. The wild cochineal inſect feeds on all the four preceding, but is moſt fond of the laſt; and is found on it in ſuch numbers as to deſtroy whole diviſions, and, in the opinion of Thiery, to prevent its growing to its full ſize. 36. C. *ſplendidus*, ſuperb Indian fig, Thiery. "Proliferouſly articulate; woody, very large; diviſions ample, oblong, glaucous; thoſe formed in the firſt three years, ſpinous; the younger ones nearly unarmed; ſpines rigid and pungent." A large tree. *Diviſions* numerous, thirty inches long, from twelve to fifteen, and even twenty broad, beſet with tufts of ſtiff, red briſtles, which are very pungent, and eaſily inſinuate themſelves into the ſkin, ſo as to become very troubleſome when neglected. In the older diviſions theſe tufts are accompanied by three ſpines of unequal ſize, very ſtrong and ſharp; the others have rarely more than one or two, and often none. The beautiful glaucous colour of this ſpecies, its immenſe ſize, the vigour and richneſs of its vegetation, with the number and amplitude of its diviſions, render it the moſt ſtriking and magnificent of all its family, and give it, in Thiery's opinion, a juſt right to the epithet ſuperb. This active naturaliſt never ſaw either the flower or the fruit, but was informed at Mexico, that the latter is delicious. It is not a native of Mexico, but is cultivated there ſolely for its fruit. Monſ. Thiery brought it from Mexico to St. Domingo, and is convinced by experiments, made for three ſucceſſive years, that it is equal to the C. nopal as a food for the true cochineal inſect of the merchant and dyer. 37. C. *nopal*, Thiery. True cochineal Indian fig. "Proliferouſly jointed, woody; diviſions compreſſed, ovate-oblong, perfectly ſmooth, green; thoſe formed in the firſt three years ſpinous; the younger ones nearly unarmed; ſpines rigid and pungent." Very ſimilar to the ſplendidus, from which it ſeems to differ chiefly in colour. Monſ. Thiery de Menonville is, however, well aſſured from all his inquiries and obſervations made on the ſpot, that this is the only ſpecies on which the true cochineal inſect is bred in Mexico. He is perſuaded that it does not grow wild in that country, and ſuſpects that it is a variety of ſome unknown ſpecies, brought by cultivation to its preſent ſtate of perfection. It differs from the C. coccinellifer of Linnæus and other botaniſts in being always found with ſtrong ſharp ſpines. The latter is alſo ſaid to grow wild in Jamaica, where C. nopal is entirely unknown. 38. C. *curaſſivicus*, curaſſow, or leaſt Indian fig, or pinpillow. Linn. Sp. Pl. (*Opuntia minima*, Bradl. ſucc. 1. p. 5. f. 4. *Ficus indica minima*, Com. hort. 1. p. 107. t. 56. Pluk. alm. 147. t. 281. f. 3.) "Proliferouſly jointed; ſlightly compreſſed, almoſt cylindric, bellying out in the middle." *Diviſions* about three feet long, feeble, and unable to ſupport themſelves, taking root as they lie on the ground, furniſhed with numerous cluſters of white, ſharp, ſlender ſpines. It is called pinpillow in the Weſt Indies from the reſemblance of its branches to a pincuſhion ſtuck full of pins. It flowered once at Badmington in the collection of the late ducheſs of Beaufort, and produced a yellow flower, but did not ripen its fruit. Said to be a native of Curaſſoa. 39. C. *ſpinoſiſſimus*, cluſter ſpined Indian fig. Willd. Ait. Kew. 2 p. 155. Mart. hort. Cantab. 88. La Marck enc. i. p. 557. "Stem feebly erect, compreſſed; diviſions compreſſed, diſpoſed croſſwiſe; ſpines very numerous, long, yellowiſh." Nearly allied to C. divaricatus, with which it would perhaps have been better aſſociated, notwithſtanding its compreſſed diviſions. *Stem* from three to five feet high, not channelled or angular, producing near its ſummit, oblong, much compreſſed branches, in a cruciform direction, or making nearly right angles with each other; ſpines very ſlender in numerous cluſters, each of which proceeds from a tubercle, and conſiſts of two ſorts of ſpines; the lower ones long, few in number, and diverging; the upper ones ſmall, numerous, and collected into a bundle like the hairs of a pencil. A native of Jamaica. 40. C. *phyllanthus*, ſpleen-wort-leaved Indian fig. Linn. Sp. Pl. Brown jam. 237. (*Cereus*, Dill. elth. 73. t. 64. f. 74. *Opuntia*, Sloan. jam. 216. hiſt. 2. p. 159. *Phyllanthus*, Pluk. alm. 296. t. 247. f. 5.) "Proliferous, enſiform, compreſſed, ſerrate-repand." Diſtinguiſhed from all the other ſpecies by its peculiar form. Diviſions of the *ſtem* ſword-ſhaped, much compreſſed, feeble, about two inches broad, and from two to four feet long, bordered by large, rounded, indentures, and traverſed longitudinally by a thick, cylindric nerve, ſo as to bear ſome reſemblance to the leaves of ſcolopendrium: *ſpines* none. *Flowers* in the indentures at the edge of the diviſions, and at the ſummit, whitiſh: *calyx* long, ſlender, curved, greeniſh, beſet with ſcattered ſcales. *Fruit* eſculent, bright red, with eight ribs, and ſcaly tubercles; pulp white; ſeeds black. A native of South America.

Obſ. Profeſſor Martyn has followed Willdenow in admitting a ſpecies on the authority of Swartz, which they call alatus: but it is evident from the deſcription that it is no other than C. phyllanthus. Willdenow has moſt incautiouſly applied to both the ſynonym of Brown, (Jam. 237.) and has even tranſcribed it twice at full length, at the diſtance of only ten lines.

***** *Furniſhed with true leaves.*

The ſpecies placed under this ſection are totally different in habit from all the preceding, having not only real leaves, but ſtems and branches ſimilar to thoſe of other trees and ſhrubs.

41. C. *pereſkia*, Barbadoes gooſeberry, or blad-apple. Linn. Sp. Pl. Brown jam. 237. (*Pereſkia*, Hort. Cliff. 122. Plum. gen. 37. Dil. Elt. 305. t. 227. f. 294. *Malus americana*, Comm. hort. 1. p. 135. t. 70. *Portulaka*, Pluk. alm. 135. t. 215. f. 6. *Groſſulariæ fructu majore arbor*, Sloan. Jam. 165. hiſt. 2. p. 86. Rai. dend. 27.) "Stem round, woody; prickles in pairs, recurved; leaves lanceolate-egg-ſhaped." An evergreen ſhrub. *Stem branched*, furniſhed in its lower part with long, ſtiff, cluſtered ſpines. *Branches* long, cylindric, flexible, ſarmentous, full of pith, and armed at each knot with a pair of prickles reſembling thoſe of the common bramble. *Leaves* alternate, roundiſh, ſucculent, contracted into a petiole at their baſe; green, ſmooth, about the ſize of thoſe of purſlane. *Flowers* monoicous, white, very fragrant, growing ſeveral together on a common ſhort peduncle in the axils of the leaves. *Fruit* globular, leafy, pale yellow, pleaſantly acid, a little larger than a hazel nut. *Seeds* generally three, black, roundiſh, compreſſed. A native of the Weſt Indies. It was raiſed from ſeeds by Commelin, in 1690, and cultivated in the royal garden at Hampton Court, in 1696; but though it vegetates vigorouſly, it has not flowered in Europe. 42. C. *por-*

C. *portulacifolius*, Linn. Spec. (*Opuntia*, Plum. Sp. 6. ic. 197. fig. 1.) "Stem round, woody, ſpinous; leaves wedge-ſhaped, retuſe." About the ſize of a common apple-tree. *Trunk* the thickneſs of a man's thigh, with ſpreading ſpinous branches. *Leaves* alternate, in ſize and conſiſtence like thoſe of C. pereſkia; with a ſolitary ſpine at the baſe, a little longer than the cluſtered ones on the branches. *Flowers* at the ends of the upper branches, probably monoicous, purpliſh, roſaceous: petals rounded, a little larger than a finger nail. *Fruit* globular, about the ſize of a common apple, without the tufts of leaves which are found on C. pereſkia, greeniſh, with a whitiſh, mucilaginous, acid pulp. *Seeds* numerous, dark-coloured.

All the known ſpecies are perennial.

Cactus, in *Gardening*, comprehends different curious plants of the ſucculent exotic kinds, of ſtrange and ſingular growths, cultivated in this climate for curioſity in ſtoves and green-houſes. They may be divided into the melon-thiſtle, the torch-thiſtle, and creeping cereus, and the Indian fig kinds. The ſpecies principally cultivated in the firſt ſort, are C. *mamillaris*, ſmaller cactus, or melon-thiſtle; C. *melo-cactus*, melo-cactus, great melon-thiſtle, or turk's cap. In the ſecond kind, C. *tetragonus*, four-angled upright cereus, or torch-thiſtle; C. *pentagonus*, five-angled upright torch-thiſtle; C. *hexagonus*, ſix-angled torch-thiſtle; C. *heptagonus*, ſeven-angled upright torch-thiſtle; C. *repandus*, ſlender-upright torch-thiſtle; C. *lanuginoſus*, woolly upright torch-thiſtle; C. *peruvianus*, Peruvian upright torch-thiſtle; C. *royeni*, Royen's upright torch-thiſtle; C. *grandiflorus*, great flowering creeping cereus; C. *flagelliformis*, pink flowering creeping cereus; C. *triangularis*, triangular cereus, or ſtrawberry pear. And in the third ſort, C. *opuntia*, common Indian fig, or prickly pear; C. *ficus Indica*, oblong Indian fig; C. *tuna*, great Indian fig, or prickly pear; C. *coccinellifer*, cochineal Indian fig; C. *curaſſavicus*, curaſſoa, leaſt Indian fig, or pin-pillow; C. *ſpinoſiſſimus*, cluſter-ſpined Indian fig; C. *phyllanthus*, ſpleen-wort leaved Indian fig; C. *alatus*, narrow long jointed Indian fig; C. *moniliformis*, neck-lace Indian fig; C. *pereſkia*, Barbadoes gooſeberry.

The two firſt ſorts are plants of a very ſingular ſtructure, having much the form of a large melon, without ſtems, branches, or leaves, ſitting in a cloſe manner to the ſurface of the earth, and differing in height from a foot to a yard, being deeply ribbed longitudinally in ſome ſorts, and in all cloſely armed with ſtrong ſpines. They are perennial, both in root and top, continuing many years; affording ornament and variety in the ſtoves of hot-houſes. Each ſpecies has ſeveral varieties.

The ſecond ſort alſo affords plants of highly curious ſucculent growths, in ſome of the ſpecies and varieties riſing to a conſiderable height, and producing flowers of great beauty; and in others creeping or trailing to ſome diſtance, or hanging down over the ſides of the pots that contain them—affording much variety in this way, as well as by their elegant and curious flowers, eſpecially in ſome of the kinds, as the *grandiflorus*, and ſome others. The ſix-angled torch-thiſtle, and ſmaller creeping cereus, are the leaſt tender.

In the third ſort, the plants are likewiſe highly curious from their fleſhy ſucculent jointed growths, and being beſet with ſharp ſpines: in many of the kinds moſt of the ſpecies, except the firſt, are leſs hardy than thoſe of any of the other two kinds. They, however, produce much variety in ſtove collections among other plants of ſimilar growths.

Method of Culture in the Melon-Thiſtle Kind.

Theſe plants may be increaſed with facility, either by ſowing the ſeeds in pots of light ſandy earth, and plunging them in the bark bed; when, after the plants have advanced a little in growth, they ſhould be pricked out into ſeparate very ſmall pots, and plunging them in the bark bed, where they moſtly make great progreſs, though it is often ſome years before they acquire any conſiderable ſize or growth; or by ſetting the young plants which iſſue from the ſides of the old ones in pots of the ſame ſort of earth, in the ſpring or autumn, managing them in the ſame way as thoſe raiſed from ſeeds. But in order to have large plants at once, they may be procured from the Weſt Indies in tubs of dry compoſt rubbiſh, care being taken to guard them well from cold and moiſture. On their arrival they ſhould be planted out in pots, and plunged in the bark bed till perfectly rooted, and become ſtrong plants.

Theſe plants ſhould always be placed upon the tops of the flues or ſhelves of the hot-houſes in winter, and in the bark beds in ſummer; very moderate waterings being given in very hot weather, but none at all in the winter ſeaſon, as they are very ſucculent plants, and quickly rot by moiſture.

Method of Culture in the Cereus or Torch-Thiſtle Kind.

Theſe plants are conſtantly increaſed by planting the cuttings of branches, which have been laid in a dry place ſome weeks for the moiſture to exhale, and the wounded parts to be healed over, in ſmall pots in the ſummer ſeaſon, filled with a compoſt conſtituted of one third light earth, the ſame quantities of ſea-ſand and ſifted lime rubbiſh, well mixed together for ſome length of time before it is made uſe of, plunging them in the bark hot-bed of the ſtove; ſome rather coarſe gravel or ſhells being previouſly placed in the bottoms of the pots to prevent the ſtagnation of moiſture.

In the upright ſorts, the cuttings for this uſe may be provided by taking off the tops of ſuch kinds as are wanted; the plants afterwards throwing out ſhoots below, ſo as to furniſh plentiful ſupplies annually. But in the creeping ſorts, as there are various ſtalks and branches, theſe may be taken off in cuttings of from three to five or ſix inches in length, and be planted out in the ſame manner as the above.

About the beginning or middle of Auguſt, the plants, after being raiſed in this manner, ſhould have air given them by degrees, in order to harden them againſt winter, but not be wholly expoſed either to it or the ſun; and towards the end of September removed into the ſtove, or green-houſe, for the winter, during which ſeaſon they muſt not have much water. The young plants ſhould conſtantly have a dry ſituation in winter, as they imbibe the greateſt part of their nouriſhment from the air, in order to prevent their roots from rotting; and ſhould not be expoſed in the open air, even in ſummer, unleſs under ſhelter, as rains are very injurious to them. Nor ſhould the creeping ſorts be expoſed too much to the open air, even in the hotteſt ſeaſons; but, if they be deſigned to flower in winter, be kept very warm, and have no water given them at that period.

The great flowering creeping cereus being a tender plant, requires a warm ſtove to protect it, in which it may be trained againſt the walls, or upon ſticks. But the ſix-angled, and ſmall ſort, with pink-coloured leaves, are not ſo tender, being capable of being preſerved in a good green-houſe, or when placed under a hot-bed frame, in the autumn, winter, and very early ſpring months.

Method of Culture in the Indian Fig Kind.

Theſe plants are capable of being readily increaſed during the early ſummer months, by cuttings of the joints of the branches taken off, and planted in pots of light ſandy compoſt. Theſe cuttings, previous to planting, ſhould, as in the other ſorts, be laid in a dry place, ten or fifteen days, to heal over the cut parts; and the hot-houſe kinds, by being then plunged in the bark-bed, or other hot-bed, will be greatly promoted in their rooting; but the green-houſe ſort, or common *opuntia*, readily ſtrikes root without, though it is greatly forwarded by ſuch aſſiſtance. They all require the earth to be occaſionally moiſtened a little. In the ſummer ſeaſon, they likewiſe often require water, but it muſt not be given in large quantities, leſt it rot them; and in winter, it ſhould be proportioned to the warmth of the ſtove; as, if the air be kept very warm, they require to be often refreſhed with a very little to prevent the branches ſhrinking; but if kept in only a moderate degree of warmth, little is neceſſary. The heat in which they thrive beſt is that marked temperate on botanical thermometers, as when kept too warm in winter, it cauſes their ſhoots to be very weak and tender. The ſorts which are inclinable to grow upright ſhould have their branches ſupported with ſtakes, to prevent their being broken down with their own weight. Plants of this ſort are moſtly expoſed to the open air in the ſummer ſeaſon; but they thrive much better when continued in the ſtoves, provided they have free air; as when ſet abroad, the rains much diminiſh their beauty, retard their growth, and prevent their producing flowers and fruit in ſuch plenty, as when conſtantly kept protected in the houſe.

Cactus, in *Natural Hiſtory*, a ſpecies of *Madrepora*, with compreſſed, divergent, dichotomous, branches, carinated at margin, and ſides contiguouſly ſtellated, found only in a foſſil ſtate. Forſk. Fn. Arab.

CACULE, in the *Materia Medica*, a name given by Avicenna, Serapio, and all the other Arabian writers, to the *cardamom* ſeeds. They diſtinguiſh two kinds of this fruit, a larger and a ſmaller. The larger is the grain of paradiſe, and the ſmaller the common cardamom ſeed of theſe times. They alſo called the cardamoms in general by the name *heil*, and diſtinguiſhed the ſmall kind, now principally in uſe, by the word *hilbanc*, which after writers corrupted into *hilbave* and *hilbua*, or *helbua*.

CACULO, in *Geography*, a ſmall town of Africa, near the river Faleme, on its eaſtern bank. N. lat. 13° 56′. W. long. 10° 20′.

CACUS, in *Entomology*, a ſpecies of Sphinx, with black indented wings, marked with three pale approximate ſtreaks: poſterior pair black ſtriated with black. Cramer, &c. Inhabits Surinam.

Cacus, in *Fabulous Hiſtory* and *Mythology*, the ſon of Vulcan, repreſented by Virgil as a monſter, half man and half ſatyr, and of an enormous height, diſcharging from his mouth ſtreams of flame. The fable reports that Hercules, after the defeat of Geryon, conducted his herd along the banks of the Tiber, and whilſt they were feeding fell aſleep. In the mean while Cacus ſtole away eight cows, and in order to eſcape detection, drew them backwards by their tails into his den on mount Aventine. When Hercules determined to quit theſe paſtures, the lowing of thoſe bulls which remained was anſwered by that of the cows which Cacus had ſtolen, and thus the theft was diſcovered. Hercules ran with great fury towards the cavern; but found its entrance cloſed by a large rock, which was ſuſpended by chains of iron forged by Vulcan. However, he removed the rock and found his way into the den amidſt the flames and ſmoke vomited by the monſter, ſeized him by the throat, and ſtrangled him. In memory of this victory, the inhabitants of mount Aventine obſerved a yearly feſtival in honour of Hercules. The Latin poets have emulated one another in celebrating this defeat of Cacus. The den of Cacus, ſays Bryant (Analyſis of Ancient Mythology, Vol. II. p. 22), was properly Ca-chus, the cavern or temple of Chus; from which the poets and later hiſtorians have formed a ſtrange perſonage, whom they repreſented as a ſhepherd, and the ſon of Vulcan. There certainly, he ſays, ſtood a temple of old upon the Aventine mountain in Latium, which was the terror of the neighbourhood. The cruelties of the prieſts, and their continual depredations, may be inferred from the hiſtory of Cacus. Virgil (Æn. lib. viii. v. 190, &c.) makes Evander deſcribe the place to Æneas, though it is ſuppoſed in his time to have been in ruins. Livy (lib. i. c. 7.) mentions Cacus as a ſhepherd, and a perſon of great ſtrength and violence. He is alſo mentioned by Plutarch (in Amatorio, vol. ii. p. 762) as vomiting fire and flames from his mouth. As in temples of this ſort there were both prieſts and prieſteſſes, we read of a Cacus and a Caca. The latter was ſuppoſed to have been a goddeſs who was made a deity for having betrayed her brother to Hercules. Lactantius de Falſa Religione, apud Inſtitut. lib. i. c. 20. The learned Bryant adds, that under the characters of Caca and Cacus, we have a hiſtory of Cacuſian prieſts, who ſeem to have been a ſet of people devoted to rapine and murder.

CACUTHIS, in *Ancient Geography*, a river of India, which, according to Arrian, diſcharged itſelf into the Ganges.

CACYPARIS, a river of Sicily, on the eaſtern coaſt, between Syracuſe and Helorum.

CACYRON, a town placed by Ptolemy in the interior part of Sicily. The inhabitants are called by Pliny Cacyrini.

CADA Water, a river of Scotland, which runs into Loch Fine; 9 miles S. W. of Inverary.

CADABA, in *Botany*, La Marck Encyc. Forſk. Ægypt. 68. (Stræmia, Willd. 365. Vahl. Sym. 1. p. 20.) Claſs and order, *gynandria pentandria* Forſk. *Pentandria monogynia* Willd. Vahl. Nat. ord. *Capparides*, Juſſ.

Gen. Ch. *Calyx* four-leaved, ſpreading, deciduous. *Cor.* petals four or none; claws filiform, the length of the calyx, ſituated on the receptacle of the calyx, two on each ſide; borders lanceolate, waved. *Nect.* tubular-ligulate, ſituated between the upper diviſion of the calyx and the receptacle of the fructification. *Stam.* filaments five or four, inſerted on the peduncle of the germ; anthers upright. *Piſt.* germ ſuperior, cylindric, pedicelled; ſtyle none; ſtigma ſimple. *Peric.* capſule pedicelled, cylindric, one-celled, two-valved; valves revolute. *Seeds* numerous, kidney-ſhaped, diſpoſed in three rows in a kind of pulp.

Eſſ. Ch. *Calyx* four-leaved. *Nectary* ligulate. *Capſule* pedicelled, pulpy.

Obſ. It reſembles capparis in its pulpy capſules, and cleome in its flowers. Its gynandrous ſtamens and tubular ligulate nectary diſtinguiſh it from the former, and its fruit from the latter. Vahl and Willdenow call the pericarp a berry; Juſſieu conſiders it as a ſilique. La Marck ſtyles it both a ſilique and a capſule within the compaſs of a few lines. Its valvular ſtructure is inconſiſtent with the eſſential character of a berry; and the ſituation of its ſeeds does not correſpond with the definition of a ſilique: it is therefore properly a capſule. We have preferred Forſkal's original generic name to that afterwards adopted by Vahl. If there be no ſtrong reaſon to the contrary, the right of priority ſhould always be reſpected.

Sp. 1. C. *indica*, La Marck, (Cleome fruticoſa: Linn. Sp. Pl. Burm. Ind. 140. tab. 46. f. 3. Stræmia tetrandra. Willd.) "Leaves oblong egg-ſhaped, ſmooth; flowers tetrandrous." A ſhrub. *Stem* cylindric, branched. *Leaves* entire, alternate, petioled, ſometimes obtuſe and ſometimes rather pointed, an inch long, and four or five lines broad; petioles ſhort. *Flowers* whitiſh, peduncled; in ſhort, ſimple, terminating racemes. *Pedicel* of the fructification about an inch long, making an obtuſe angle with the peduncle of the flower. *Capſule* pulpy, which determines it to be a cadaba, not a cleome. A native of the Eaſt Indies, whence Sonnerat ſent ſpecimens of the flowers and fruit to La Marck. 2. C. *rotundifolia*, Forſk. "Leaves circular, ſmooth." A middle-ſized tree. *Leaves* alternate, flat, rather thick, ſometimes ſlightly ſinuate, and often emarginate, petiole half the length of the leaf. *Flowers* erect, in terminating racemes, without petals; nectary greeniſh; the ligulate part ovate, flat, red above and yellow beneath. *Stamens* inſerted on the lower part of the pedicel of the germ. *Fruit* two inches long, cylindric, ſwelling out in knobs, ſmooth, green: valves red within. *Seeds* black, in a dry reddiſh pulp. A native of Arabia. 3. C. *farinoſa*, Forſk. "Leaves egg-ſhaped, oblong, mealy." A ſhrub. *Branches* round; covered, like the leaves, with a mealy down. *Leaves* alternate, obtuſe, entire, flat, half an inch long. *Flowers* peduncled, in terminating racemes; petals waved; nectary white; ſtamen inſerted a little below the middle of the pedicel of the germ. A native of Arabia. 4. C. *glanduloſa*, Forſk. "Branches, leaves, calyx, and piſtil glandular, villous." A ſhrub. *Branches* round, as well as all the other parts of the plant covered with glandular hairs. *Leaves* half an inch long, petioled, alternate, roundiſh, entire, rough to the touch. *Flowers* nodding, from four to ſix, in a terminating raceme; capſule half an inch long, very hairy. A native of Arabia.

CADAHALSO, in *Geography*, a town of Spain, in New Caſtile, ſurrounded with pleaſant gardens and woods; 6 miles N. of Eſcalons.

CADALEN, a town of France, in the department of the Tarn, and chief place of a canton in the diſtrict of Gaillac; 2 leagues S.E. of it. The town contains 1,627, and the canton 4,709 inhabitants; the territory includes 155 kiliometres, and 7 communes.

CADAN, or KADAN, a town of Bohemia, in the circle of Saaz, ſeated on the Eger, and founded in 821; 10 miles E. of Saaz. N. lat. 50° 20′. E. long. 13° 34′.

CADAON, a river of Portugal, which forms the harbour of Setuval.

CADARA, in *Ancient Geography*, a town of Arabia Felix, on the Perſian gulf.—Alſo, a large peninſula of the Red Sea, on the ſouthern coaſt of Arabia, which formed an extenſive bay, croſſed by Ptolemy Philadelphus, in 12 days and nights. Pliny.

CADARI, or KADARI, a ſect of Mahometans, who aſſert free-will, attribute the actions of men to men alone, not to any ſecret power determining the will; and deny all abſolute decrees, and predeſtination. The author of this ſect was Mabed ben Kaled Al Gihoni, who ſuffered martyrdom for it. The word comes from the Arabic, קדר, *cadara*, power. Ben Aun calls the Cadarians, the Magi, or Manichees of the Muſſulmen. This name is given by ſome to the Motazalites, though they diſclaim it, and give it to the Jabarians, who likewiſe reject it as an infamous appellation, becauſe Mahomet is ſaid to have declared the Kadarians to be the Magians of his followers.

CADAVAL, in *Geography*, a town of Portugal, in the province of Traz-os-Montes; 13 miles S.S.W. of Mirandella.—Alſo, a town of Portugal, in the province of Eſtremadura, including a diſtrict of eight pariſhes, and about 350 inhabitants; 13 miles S.E. of Peniche.

CADAVAYLLO *River*, is about 3 leagues N.N.E. from the ſand off the mouth of Lima river, on the coaſt of Peru in South America.

CADAVERUM, in *Entomology*, a ſpecies of ACARUS, having the body ſomewhat bilobate, and the poſterior part furniſhed with four briſtles, which are longer than the body. Schranck. Found in the carcaſes of inſects.

CADAUM CASTRA, in *Ancient Geography*, a place of Africa, in Mauritania Cæſarienſis, on the coaſt from Cala to Ruſucurrum. Antonin. Itin.

CA-DE′, or CHIADA, in *Geography*. See *League of* GOD'S *houſe*.

CADE, a cag, caſk, or barrel; uſed in the book of rates for a determinate number of ſome ſorts of fiſh.—Thus a cade of herrings is a veſſel containing the quantity of five hundred herrings, and of ſprats one thouſand.

Anciently the cade of herrings appears to have contained ſix hundred fiſh, reckoning ſix ſcore to the hundred.

CADE *bay*, in *Geography*, lies on the ſouth-weſt ſide of the iſland of Antigua, in the Weſt Indies, and a little to the north-weſt from Carliſle bay on the ſouth of the iſland.

CADE'S *Inſurrection*, in *Engliſh Hiſtory*, a formidable inſurrection, which took place in Kent in 1450, and which was ſo called from the artful and bold adventurer, John Cade, by whom it was headed. Cade having collected a conſiderable number of the common people, by ſpecious promiſes of reforming all abuſes, whence he obtained the name of John Amend all, marched towards London, and encamped on Blackheath. From hence two addreſſes were ſent by the inſurgents to the king and council, artfully profeſſing the greateſt attachment to the perſon and government of the king, and requeſting the redreſs of grievances, together with the puniſhment of evil counſellors, who had oppreſſed the people at home, and occaſioned the loſs of the king's dominions abroad, and that the king would govern by the advice of the dukes of York, Exeter, Buckingham, and Norfolk, and the well-affected barons of the kingdom. Theſe addreſſes, which had marked out for deſtruction certain members of the council, were rejected, and it was reſolved to ſubdue the inſurgents by force. For this purpoſe, an army of 15,000 men was ordered to march againſt the inſurgents; and a detachment overtook and engaged them near Seven-oaks, but was defeated. Cade and his followers, elated by this victory, returned to their former ſtation on Blackheath; and as the aſpect of affairs was now become ſerious and alarming, lenient meaſures were adopted, and the archbiſhop of Canterbury and the duke of Buckingham were deputed to treat with the rebels. In the conference that enſued, Cade behaved with decency and firmneſs, but refuſed to lay down his arms, till the requiſitions in his addreſs were granted. After the return of the meſſengers, the court retired to Kenilworth caſtle, and the tower of London was garriſoned. Cade advanced to Southwark, and was at length admitted into London. Having ſeized and beheaded lord Say and Seale, late high treaſurer of England, and his ſon-in-law ſir James Cromer, ſheriff of Kent, they proceeded to pillage the city; but they were ſoon driven out of it, and failing in their attempts to repoſſeſs it, they agreed to a ſhort truce. A proclamation was iſſued from the tower, which announced a pardon under the great ſeal to all who immediately departed to their own homes; and this proclamation produced ſuch an effect, that in a few hours the army, lately ſo formidable, diſappeared. Cade, finding that he was thus ſuddenly abandoned, put his booty on board a barge, and ſent it to Rocheſter, and proceeded by land with a few attendants; but being denied admittance into Queenborough caſtle, he diſmiſſed all his followers, and put on a diſguiſe. A proclamation was immediately publiſhed, offering a reward of 1000 marks to any who brought him in, dead or alive. He was diſcovered lurking in a garden at Hothfield, in Suſſex, by Alexander Eden, a gentleman of Kent, and, making ſome reſiſtance, was killed, and his body was brought to London. Thus ended an inſurrection, which, under a leader of higher rank and greater honour, might have produced a revolution.

Cade *Lamb*, in *Rural Economy*, a young lamb brought up in the houſe wholly by the hand. Where the ewe dies ſoon after lambing, the young lamb may be preſerved and brought up in this way.

Cade, *oil of*, (huile de Cade, Fr.) is an empyreumatic oil of turpentine, thinner than tar, and obtained along with it in the diſtillation of pine wood. It appears to be very ſimilar to what is called in this country *ſpirit* of *tar*. See Turpentine.

Cade's *point*, in *Geography*, lies at the north-weſt end of the iſland of Nevis, in the Weſt Indies, and is the neareſt cape to Major's bay, at the ſouth-eaſt end of the iſland of St. Chriſtopher's, or St. Kitt's.

Cade-*worm*, in *Entomology*, a name given by ſome authors to the larvæ of the phryganeæ, which are found in ditches, and uſed as bait for fiſh. See Phryganea.

CADEL-AUANACU, in *Botany*, Rheed. mal. 2. p. 61. t. 75. Rai. hiſt. 167. 1855. Sup. 112. 666. See Croton *tiglium*.

CADELI, Rheed. mal. See Achyranthes *aſpera*.

CADELIUM, Rumph. Amb. See Phaseolus *Max*.

CADEMOSTO, or Cadamusti, Lewis, or properly Alvise da ca De Mosto, in *Biography*, a celebrated Venetian navigator, was born about the year 1432; and having made ſeveral voyages in the Mediterranean, he left Venice in 1454, and being accidentally driven by a ſtorm on the coaſt of Portugal, he was employed by the infant don Henry in a voyage of diſcovery. A caravel was fitted out and laden, chiefly at the expence of De Moſto, who embarked in March 1455 with Vincenzo Diaz, to whom the command of the veſſel was entruſted, and proceeded to the coaſt of Africa. Being joined at ſea by two other veſſels, they ſailed to ſome diſtance beyond Cape Verd; but the crews, through fear of the negroes, refuſing to proceed further, they were under the neceſſity of returning to Portugal. In the following year, Cademoſto, accompanied by Uſomare, a Genoeſe, undertook a ſecond voyage with three ſhips towards the ſame parts; and having paſſed cape Blanco, they were driven by a ſtorm on Cape Verd iſlands, which had not yet been diſcovered. From hence, they proceeded as far as the mouth of the river St. Domingo. Cademoſto, after his return to Portugal, publiſhed, in 1464, an account of his voyage, which is valuable, as it contains the earlieſt relation extant of the Portugueſe navigations on the African coaſt, and of the gold trade of Tombut, and its principal branches. This work was firſt publiſhed at Vicenza in 1507; it was afterwards tranſlated into Latin and French, and inſerted by Grinæus in his collection entitled "Novus Orbis," and by Ramuſio in his collection of voyages, and ſince in ſeveral others. The author reſided ſome years ago at Lagos in general eſteem. He returned to Venice in 1464, and after this period we have no further account of him. Nouv. Dict. Hiſt.

CADENA, in *Ancient Geography*, a town of Aſia Minor, in Bithynia.

CADENAC, in *Geography*, an ancient town of France, in the department of the Lot, by which river it is ſurrounded, ſeated on a ſteep rock, which, having never ſubmitted to the Engliſh in their various invaſions and conqueſts, was inveſted with peculiar privileges; 28 miles E.N.E. of Cahors.

CADENCE, in *Muſic*, denotes a kind of cloſe, or reſt, either at the end of a ſong, or ſome of its parts, into which it is divided as into members, or periods.

The word ſeems a metaphor drawn from the dancing-ſchool, where it properly ſignifies a pauſe, or fall, from motion to reſt. A cadence is properly when the parts fall, and terminate on a chord, or note, the ear ſeeming naturally to expect it. Regularly it is to be made on the final or dominant, though ſometimes alſo on the mediant or middle chord of a note.

Cadences in ſinging anſwer nearly to points or ſtops in diſcourſe. They are reſts contrived to favour the weakneſs of the performers, as well as the hearers, of a muſical compoſition. Men are not able to ſuſtain their attention, or their voice, beyond the ſpace of two meaſures; even in this ſhort interval we perceive the ſong to fall, and tend rapidly to a pauſe, or reſt: the notes which introduce theſe pauſes, are called cadences, on the proper conducting and expreſſing of which a great part of the muſician's ſkill depends. The chief cadence or cloſe is the key itſelf, in which the baſs muſt always conclude; the next in dignity is the fifth above; then, if the key-note is made ſharp, a cadence may be made on the ſecond of the key; after which (by means of a ſharp fifth) on the ſixth; and by a ſharp ſecond on the third of a key; after which, returning to the original key and ſubject, when the hearer is reminded of both, by means of a flat ſeventh, there may be a cloſe in the fourth of the key; after which, with a ſharp ſeventh, the piece may terminate by a final cadence or cloſe in the original key. See Close, Modulation.

In all theſe cadences, a major key is underſtood. For cadences in a minor key, ſee Counterpoint.

Dr. Pepuſch's definition of cadences in muſic is, perhaps, the moſt ſhort, clear, and comprehenſive, to be found in any elementary book.

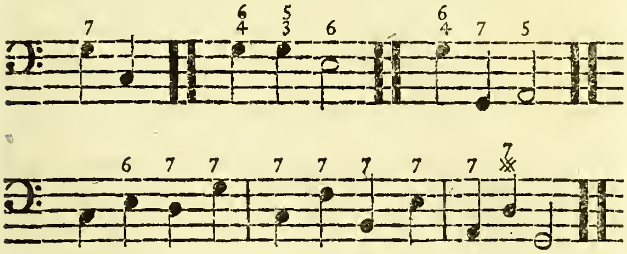
"Cadences in muſic are the ſame as ſtops in ſpeaking or writing; that is to ſay, they are endings or terminations either of a part or of the whole piece of muſic, as ſtops are of a part or of the whole ſpeech. For which reaſon they are diſtinguiſhed into full cadences and middle cadences; theſe laſt are like commas and ſemicolons, after which more is expected to follow, they not making ſo full a ſtop as the others; whereas after a full cadence we are ſenſible that we are come to a concluſion." Treatiſe on Harmony, p. 4.

This author's arrangement of the modulation in the key of C as the repreſentative of all major keys, differs ſomewhat from the preſent practice. It is however that of the greateſt maſters of the early part of the laſt century. $\overset{1}{C}$, $\overset{2}{G}$, $\overset{3}{E}$, $\overset{4}{A}$, $\overset{5}{F}$, c, which include all the concords to the key note.

In a long piece of muſic, however, he allows a tranſient modulation into D minor, as a ſixth cadence. But Dr. Pepuſch's modulation into E differs totally from that of the ſecular compoſers of more modern times. It is, in fact, no more than a ſemi-cadence on the fifth of the key of A minor, with a ſharp third; nor is the ſcale any thing more than that ſpecies of octave aſſigned by moſt writers on ancient muſic to the Dorian mode. See Mode, and Ancient Music. It begins and ends in E without flat or ſharp; $\overset{\frown}{EF}GA\overset{\frown}{BC}D$ e. Dr. Pepuſch ſays, that "from the peculiarity of its modulation, whatever is compoſed in this mode or key is ſo ſolemn, and it ſeems ſo much appropriated to church muſic, that it is called by the Italians *tuono di chieſa*. From the contemplation of this ſcale, the ſieur Blainville, in 1751, fancied, or wiſhed others to fancy, that he had diſcovered a new cadence, or key, different from the major and minor, the ſecond being minor, and the ſeventh major. See Dict. de Rouſſeau, art. *Mode*.

The reſolution of a diſcord, according to Rouſſeau, is a kind of cadence. “ And, as all harmonic phraſes are neceſſarily connected by diſcords, expreſſed or underſtood, it follows, that all muſic may be ſaid to conſiſt of a ſucceſſion of cadences.” The *regle de l'octave* ſeems to favour this idea; as every other ſound carries a diſcord. See Regle *de l'octave.*

According to Rameau, there are four kinds of cadences; the perfect, imperfect, interrupted, and diſappointed.



Padre Martini's cadences, in his Saggio di Contrappunto, being ſuch as are peculiar to the eccleſiaſtical modes, will be of little uſe in ſecular muſic. The cloſes of Haydn, Mozart, and Paeſiello, however new, elegant, and ingenious the treble may be, are all built on the baſes and harmony of the old cloſes of 100 years ago ; for in a full cloſe, as the baſe muſt fall a fifth or riſe a fourth, the treble muſt either fall from the ninth to the eighth, or riſe from the ſeventh to the eighth.

In early days of counterpoint, the great ſtudy of compoſers was cadences. A Studio of Paleſtrina being found at Rome in the year 1770, it was chiefly filled with cadences and chants, in his own hand-writing.

In melody, the preparation for cloſes in the principal part are infinite; in harmony they are numerous, but may be numbered. Neither Rameau's cadences, nor thoſe of Padre Martini, quite ſatiſfy us. In Gaſparini there is an ample collection, chap. vi. *per far le cadenze d'ogni ſorte.* From theſe Walther has cited many, but more correctly; for Gaſparini's book, in the edition which we have ſeen, is miſerably printed. The cadences in Walther are good, as far as harmony is concerned, which is not ſo changeable as melody; and to theſe, chiefly from Gaſparini, we have all the Italian names: as *cadenza maggiore, minore, maggiore ſminuita, cadenza ſfuggita, finta, fiorita, perfetta, imperfetta, irregulare, d'inganno,* &c.

In ancient muſic, cadence is nearly ſynonymous with rhythm. The French make uſe of the term cadence for a trille or ſhake.

Cadence, in the *Modern Dancing,* is when the ſeveral ſteps and motions follow, or correſpond to, the notes or meaſures of the muſic.

Cadence, in the *Manege,* denotes an equal meaſure, or proportion obſerved by a horſe in all his motions, when he is thoroughly managed, and works juſtly, either at the gallop, *terra à terra,* or the airs.

A horſe's working in cadence imports, that his times or motions are uniform, and that one does not take in more ground than another.

Cadence, in *Oratory,* and *Poetry,* denotes the harmonious movement of verſe or proſe; otherwiſe called the numbers, and by the ancients ῥυθμος. See Rhythm.

As to proſe, Ariſtotle ſuggeſts that though it be not meaſured like verſe, it ſhould nevertheleſs be numerous or harmonious (ſee Number); and Cicero enjoins the orator to take care to gratify the ear, “ ſuperbiſſimum aurium judicium.” Indeed, the fineſt thoughts will be deſtitute of power to pleaſe, if they are expreſſed in terms that are harſh and ill arranged. As the ear is agreeably ſoothed by a ſoft and flowing diſcourſe, it is offended by want of harmony in the ſtructure and flow of the periods; whether it be occaſioned by the exceſſive brevity and abruptneſs of termination, on the one hand, or by exceſs of length, a kind of crawling, languid, movement on the other, which are both alike diſguſting to a delicate ear. By obſerving a due mean between thoſe two extremes, a diſcourſe acquires that harmony which is adapted both to pleaſe and even to perſuade. See Style.

As to the cadence of verſe, it depends, in Greek and Latin poetry, on the number and proper intermixture of thoſe feet or periodic meaſures which enter into the compoſition of verſe, and which vary in the different kinds of it; and, in living languages, the cadence reſults from the number of ſyllables which each verſe admits, and from the richneſs, variety, and diſpoſition of the rhymes. In the ancient poetry, ſays M. Rollin (Method of Teaching and Studying the Belles Lettres, vol. i. p. 249.) “ there is a plain, common, and ordinary harmony of cadence, which ſupports itſelf alike univerſally, renders the verſe ſmooth and flowing, carefully throws out whatever may offend the ear by a rough and diſagreeable ſound; and, by the mixture of different numbers and meaſures, forms that pleaſing harmony, diffuſed throughout the whole body of the poem.” “ Beſides this,” he ſays, “ there are certain particular cadences, of greater ſignificancy, which make a more ſenſible impreſſion. Theſe ſorts of cadences are very beautiful in verſification, and add a conſiderable grace, provided they are uſed with prudence and addreſs, and do not return too often. They prevent the tedioufneſs, which uniform cadences, and regular returns, in one and the ſame meaſure, cannot fail of producing.” “ In the Latin poetry,” he adds, “ we have entire liberty to divide our verſes as we pleaſe, to vary the pauſes (cæſuras, or cadences) at will, and artfully to ſpare delicate ears the uniform returns of the dactyle and ſpondee, which cloſe an heroic verſe.” Accordingly he produces a variety of examples from Virgil, which ſeem to evince and illuſtrate the value of this kind of liberty, and the uſe that may be made of it. Thus, long words, properly placed, form a full and harmonious cadence, eſpecially if there are ſeveral ſpondees in the verſe; e. g.

“ Luctantes ventos tempeſtateſque ſonoras
Imperio premit.” Æn. I. 57.

Again, the ſpondaic verſe has ſometimes a great degree of gravity. Virgil has uſed it very advantageouſly in the deſcription of Sinon's ſurpriſe and aſtoniſhment.

“ Namque ut conſpectu in medio turbatus, inermis
Conſtitit, atque oculis Phrygia agmina circumſpexit.”
Æn. II. 67.

It is alſo very proper for expreſſing any ſentiment that is ſad and doleful; e. g.

“ Quæ quondam in buſtis aut culminibus deſertis
Nocte ſedens, ſerúm canit importuna per umbras.”
Æn. XII. 863.

A monoſyllable at the end of a verſe ſerves ſometimes to give it great force; e. g.

“ Hæret pede pes, denſuſque viro vir.” Æn. X. 361.

There are alſo ſeveral ſorts of ſuſpended cadences, which have their peculiar graces; e. g.

“ Et fruſtra retinacula tendens
Fertur equis auriga, neque audit currus habenas.”
Georg. I. 513.

Broken cadences likewiſe produce a good effect; e. g.

“ Tali remigio navis ſe tarda movebat:
Vela facit tamen.” Æn. V. 280.

Eliſions contribute very much to the beauty of verſe, by making the numbers ſmooth, flowing, rough, or majeſtic, according to the difference of the objects to be expreſſed. Spondees and long words, which give a ſlowneſs and heavineſs to verſe, are proper for expreſſing ſorrow; e. g.

" Extinctum nymphæ crudeli funere Daphnim
Flebant." Eclog. V. 20.

Joy, on the other hand, demands the rapidity of dactyles; e. g.

" Saltantes ſatyros imitabitur Alpheſibœus." Eclog. V. 73.

To expreſs ſoftneſs, we muſt ſelect words conſiſting of many vowels, with ſmooth and flowing conſonants; and avoid ſuch ſyllables as are compoſed of ſeveral conſonants, harſh eliſions, and rough letters or aſpirates; e. g.

" Devenêre locos lætos, et amœna vireta
Fortunatorum nemorum, ſedeſque beatas."
Æn. VI. 638.

In expreſſing roughneſs, we muſt chuſe words which begin and end with an *r*, or which double the *r*; rough conſonants, as the *x*, or the aſpirate *h*; words formed of double conſonants; and eliſions; e. g.

" Ergo ægrè raſtris terram rimantur." Georg. III. 534.

Lightneſs and ſwiftneſs are expreſſed by dactyles; e. g.

" Mox aëre lapſa quieto
Radit iter liquidum, celeres neque commovet alas."
Æn. V. 216.

Heavineſs, on the other hand, requires ſpondees; e. g.

" Illi inter ſeſe magna vi brachia tollunt
In numerum, verſantque tenaci forcipe ferrum."
Georg. IV. 174.

In other cadences, words placed at the end have a peculiar force or grace; e. g.

" Vox quoque per lucos vulgo exaudita ſilentes
Ingens." Georg. I. 476.

See Order, Juncture, and Number.

Cadence, in *Reading*, denotes the falling or lowering of the voice below the key note at the cloſe of every period. The key-note, in ſpeaking, is that tone or ſound with which the modulation commences, and it is generally continued through every complete ſentence or period; and to this the occaſional inflexions of the voice, either above or below it, may be ſuppoſed to refer. Of courſe the tones that fall a little lower than the key at the cloſe of a ſentence or period, are called *cadences;* and they are ſometimes diſtinguiſhed into two kinds, under the appropriate epithets of *ſignificant* and *ornamental;* the former ſerve to mark the ſenſe, and the latter to decorate the modulation. In many extenſive and long periods, the full ſenſe of which is long ſuſpended, and where the final words are not very important, the cadence is a kind of notice of their termination, diſtinct from the pauſe, which, beſides the ornamental variety it affords, is a very neceſſary and uſeful article in perſpicuous elocution. As this cadence naturally accompanies the termination of every entire ſenſe, it may ſometimes fall before the ſemicolon, but more generally before the colon, as well as the period; for theſe marks are often found to terminate a complete ſenſe; and in ſuch caſes the relation of that which follows to that which preceded, is ſignified to the mind by the relative ſhortneſs of the ſtop, and the mode of introducing the additional matter. See Modulation, Pause, and Punctuation.

CADENCED. An air or melody in *muſic* is ſaid to be well cadenced, when the rhythm is good, the accents well placed, and the paſſages well phraſed. See Rhythm, Accent, and Phrase.

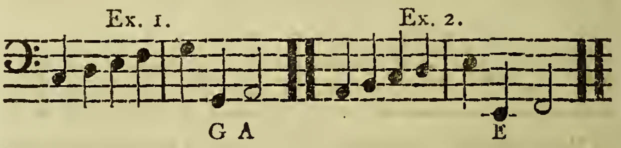
CADENCY, in *Heraldry*, the ſtate or quality of a cadet. Niſbet has an eſſay on the additional figures and marks of cadency. See Diminution.

CADENE, in *Commerce*, one of the ſorts of carpets which the Europeans import from the Levant, by way of Smyrna. They are the worſt ſort, and are commonly ſold by the piece from one to two piaſtres per carpet.

CADENET, in *Geography*, a town of France, in the department of Vaucluſe, and chief place of a canton in the diſtrict of Apt, near the Durance, three leagues S. of Apt. The town contains 2051, and the canton 8811 inhabitants; the territory comprehends 260 kiliometres and 9 communes. N. lat. 43° 40′. E. long. 53° 30′.

CADENSO, or Cadenio, one of the Laccadive iſlands in the Indian ſea. N. lat. 11° 50′. E. long. 72° 32′.

CADENZA *Sfuggita*, in the *Italian Muſic*, is uſed when a part inſtead of aſcending or deſcending the proper interval, to form a *cadence*, proceeds by ſome other interval. For inſtance, when the baſs, inſtead of riſing a fourth or falling a fifth, aſcends only by a tone, or ſemitone-major.



Thus, in Ex. 1, where the baſs, inſtead of proceeding to C, the key-note, after G, goes to A. Thus alſo, in Ex. 2, after E, the ear would naturally expect to hear A the key-note; but this is avoided, and F put in its place.

The interrupted and diſappointed cadences in recitative are innumerable: being governed by the dialogue; in which a full and formal cloſe from the chord of the fifth to the key-note ſeldom occurs, except in the laſt bar of the recitation preceding an air.

CADEQUIA, in *Geography*, a ſea-port town of Spain in Catalonia; 5 miles N.E. of Roſas.

CADER, a town of Aſia, in the Arabian Irak, on the Tigris; 100 miles S. of Bagdad.

CADER-IDRIS, the Chair of Idris, a lofty mountain near Dolgellau in Merionethſhire, North Wales, in height the ſecond of the principality, is ſo called from a tradition of its having been a fortreſs belonging to Idris, who is ſuppoſed to have been a prince of theſe parts in ancient times. It is alſo ſaid that Idris was a famous poet, aſtronomer, and philoſopher, and that the ſummit of Cader-Idris was his favourite ſeat and obſervatory. Mr. Rowland in his " Mona Antiqua," (p. 84.) ſays, that the ancients decyphered aſtronomy by the name of Edris; a name attributed to Enoch, whom they took to be the founder of aſtronomy; whence he derives Cader-Idris; and he adds that not far off there is another place, called " Cerrig-Brudyn," i. e. the aſtronomer's ſtones or circle. Accordingly the former of theſe places may have been the reſidence, and the latter the obſervatory of thoſe druids in the Iſle of Angleſey, who applied particularly to the ſtudy of aſtronomy.

This mountain riſes on the ſea ſhore, cloſe upon the northern ſide of the eſtuary of the ſmall river Diſynwy, about a mile from Towyn. It proceeds with almoſt a continual aſcent, firſt northwards for about 3 miles, then for 10 miles further it runs E.N.E. giving out for its ſummit a branch nearly 3 miles long, in a ſouth-weſterly direction, parallel to the main ridge. It is very ſteep and craggy on every ſide, but the ſouthern deſcent, eſpecially to the border of Talyllyn lake, is the moſt precipitous, being nearly perpendicular. The breadth bears but a ſmall proportion to its length; a line paſſing along its baſe and interſecting the ſummit, would ſcarcely equal 4½ miles; and in the other parts it is a mere ridge, whoſe baſe hardly ever exceeds 1 mile in breadth. Its peak, called " Pen-y Gader," is ſaid by Pennant (Snowdonia, p. 98.) to be 2850 feet above Dolghellau. Cader Idris is the commencement of a chain of primitive mountains, extending in the N.N. eaſterly direction, and including the Arrans and the Arennigs. It is much more lofty and craggy than the ſlates and ſecondary mountains, which ſurround

round it, and conſiſts of ſiliceous porphyry, and ſiliceous ſchiſtoſe porphyry, both in maſs and interſected by veins of quartz, argillaceous porphyry in maſs, and granitill of Kirwan in maſs, compoſed of quartz and ſchorl. Here are found alſo ſeveral rocks, containing the component parts of quartz and porphyry, with ſo great a proportion of white and ſmoak-coloured greaſy-looking quartz as almoſt to conceal the other ingredients. In ſeveral ſpecimens the felſpar, having been decompoſed, has fallen out and given the quartz a porous appearance, which accounts for the porous lava ſaid by ſome travellers to have been found here. There are no mines in Cader-Idris, or the neighbourhood. At the foot of this mountain is a ſmall lake, called "Llyn-y-Gader;" above the exterior ridge is another deep and clear lake, kept conſtantly full by the numerous tributary torrents that fall down the ſurrounding rocks: and at a ſtill higher elevation is a ſecond lake, clear as glaſs, and overlooked by ſteep cliffs ſo as to reſemble the crater of a volcano, accurately repreſented in Wilſon's excellent view of Cader-Idris. Some travellers have mentioned their having found lava and other volcanic productions here: but Mr. Aikin and his companions, who aſcended this mountain, could diſcover nothing of this kind; nor did the water of the lake appear to differ in any reſpect from the pureſt rock-water, though it was repeatedly tried with the moſt delicate chemical teſts. A clear, loud, and diſtinct echo repeats every ſhout that is made near this lake. On the ſummit of the mountain is a ſmall plain, with two rocky heads of nearly equal height, one looking to the north, the other to the ſouth. In the former direction Snowdon and its dependencies ſhut up the ſcene; on the weſt was ſeen the whole curve of the bay of Cardigan, bounded at a vaſt diſtance by the Caernarvon mountains, and nearer, daſhing its white breakers againſt the rocky coaſt of Merioneth. The ſouthern horizon was bounded by Plinlimmon, and on the eaſt the eye glanced over the lake of Bala, the two Arennig mountains, the two Arrans, the long chain of the Berwyn mountain, to the Breiddyn hills on the confines of Shropſhire; and dimly in the diſtant horizon, was beheld the Wrekin, riſing alone from the plain of Salop. On the oppoſite ſide of the mountain, by which theſe travellers deſcended, they found another beautiful mountain lake, whoſe cold clear waters diſcharge their ſuperabundance in a full ſtream down the ſide of the mountain. All theſe waters abound with trout, and in ſome is found the Gwyniad, a fiſh peculiar to rocky alpine lakes. Following the courſe of the ſtream, they came on the edge of the craggy cliffs that overlook Talyllyn lake; and after a long and difficult deſcent they arrived on the borders of Talyllyn, where they entered the Dolghellau road. The plants which they found were lobelia dortmanna, in all the lakes, eſpecially in Llyn-y-Gader; ſaxifraga hypnoides; S. nivalis; lycopodium ſelago; L. clavatum; feſtuca vivipara; vaccinium vitis-idæa; gnaphalium dioicum; pteris criſpa; narthecium oſſifragum: pinguicula vulgaris; ſedum rupeſtre; S. telephium, &c.

Beneath Tyrrau Mawr, one of the points of Cader-Idris, and on the right are ſome remains of *circles* of upright ſtones, with many *carns*, and ſeveral *maeni-hirion*, of rude, upright columns. At a ſmall diſtance beyond theſe, near the river Krogennan, are the remains of "Llys Bradwen," or the palace of Ednawain, chief of one of the fifteen tribes of North Wales, about the reign of Gruffydd ap Cynan, meaſuring nearly 30 yards ſquare: having an entrance 7 feet wide, with a large upright ſtone on each ſide as a door-caſe: the walls are rude and uncemented. Aikin's Tour. 8vo. 1797. Evan's Cambrian Itinerary. 8vo. 1801.

CADEROUSSE, a town of France, in the country of Venaiſſin; 1 league W. of Orange.

CADES, in *Ancient Geography*. See KADESH.

CADESIA, a town of Perſia, in the province of the Babylonian or Chaldean Irak, on the verge of the Deſert, 61 leagues from Bagdad, and 2 ſtations, or 15 paraſangs, from Cuſa. It became famous among the Arabs for the defeat of the Perſians, in the battle fought in the 15th year of the Hegira, (A.D. 636.) under the caliphate of Omar, by Saad, ſon of Abuvacaz, general of the Arabs, againſt Ruſtam, ſurnamed Ferokhzad, general of Jezdegerd, the laſt king of Perſia, of the dynaſty of Choſroes, or of the Saſanides. The army of the Moſlems conſiſted of 30,000 men; but that of the Perſians was much more numerous. The combat laſted three days, and the ſeveral periods of it were diſtinguiſhed by their peculiar appellations: the firſt, from the ſeaſonable appearance of 6000 of the Syrian brethren, was denominated the day of *ſuccour*. The day of *concuſſion* expreſſed the diſorder of one, or, perhaps, of both, of the contending armies. The third, a nocturnal tumult, received the whimſical name of the night of *barking*, from the diſcordant clamours which were compared to the inarticulate ſounds of the fierceſt animals. The morning of the ſucceeding day determined the fate of Perſia; and a ſeaſonable whirlwind drove a cloud of duſt againſt the faces of the unbelievers. The clangor of arms was re-echoed to the tent of Ruſtam, who was gently reclining in a cool and tranquil ſhade, amidſt the baggage of his camp, and the train of mules, that were laden with gold and ſilver. On the ſound of danger he ſtarted from his couch; but he was overtaken in his flight by a valiant Arab, who caught him by the foot, ſtruck off his head, hoiſted it on a lance, and inſtantly returning to the field of battle, carried ſlaughter and diſmay among the thickeſt ranks of the Perſians. This battle has been juſtly deſcribed by the epithets of obſtinate and atrocious; and the Saracens acknowledge a loſs of 7500 men. The ſtandard of the Perſian monarchy was overthrown and captured in the field; which ſtandard was a leathern apron of a blackſmith, who, in ancient times, had ariſen the deliverer of Perſia; but this badge of heroic poverty was diſguiſed, and almoſt concealed by a profuſion of precious gems. After this victory, the wealthy province of Irak, or Aſſyria, ſubmitted to the caliph; and his conqueſts were firmly eſtabliſhed by the ſpeedy foundation of Baſſora, a place which ever commands the trade and navigation of the Perſians. D'Herbelot. Bib. Orient. Gibbon's Hiſt. vol. ix. p. 367, &c.

CADET, the younger brother of a family: a term naturalized in our language from the French.

In Paris, among the citizens, the cadets have an equal portion with the eldeſt; in other places the eldeſt has all. According to the cuſtom of Spain, one of the cadets, in great families, takes the mother's name.

CADET alſo denotes a young gentleman-ſoldier, who, to attain to ſome knowledge in the art of war, and in expectation of preferment, chooſes to carry arms as a private man in a company of foot.

Cadet differs from volunteer, as the former takes pay, though only that of a private man, whereas the latter ſerves without pay.

In 1682, the king of France eſtabliſhed companies of cadets, wherein the young gentry were trained up to war, and taught the arts and exerciſes belonging thereto, as riding, fencing, mathematics, &c.

CADET, CLAUDE, in *Biography*, one of the phyſicians to Lewis XIV. was born at a village near Troyes, in 1695. Applying diligently to the ſtudy of medicine and ſurgery, at the age of 21, he was ſent to Paris, and admitted among the attending ſurgeons at the Hotel Dieu, where, he profited ſo well by the opportunities which offered for information, that, in 1724, he was admitted of St. Come, and attained

tained to conſiderable eminence in his profeſſion. He died at Paris, Feb. 10, 1745. His only work is "Obſervations ſur les Maladies ſcorbutiques," Paris, 1742, 12mo. which was republiſhed, two years after, with additions. His two ſons, Lewis Claude, and Anthony Alexis, who were both brought up to the practice of medicine, diſtinguiſhed themſelves by their publications on the ſubjects of chemiſtry and pharmacy, of which the following are moſt known: "Analyſe Chymique d'une Eau Minerale nouvellement decouverte a Paſſy," 1757, 12mo.; "Reſponſe a pluſieurs Obſervations de M. Baumé ſur l'Æther Vitriolique, ſur le Mercure precipité per ſe, ſur la Reduction de Chaux, de Cuivre, et d'Etain a travers les Charbons," Paris, 1775, 4to.; beſides numerous communications to the Academy of Sciences at Paris, and Curioſ. Nat.; of both which Lewis Claude was member. Eloy. Dict. Hiſt.

CADETES, in *Ancient Geography*, a people of Gaul, towards the maritime parts of Armorica. Cæſar.

CADEUMA, a town of Ethiopia, near Egypt. Pliny.

CADGE, a round frame of wood on which falconers carry their hawks when they expoſe them to ſale.

CADGOLLS, in *Geography*, a mountain of Scotland, in the county of Roſs; 6 miles S.E. of Tain.

CADI, among the Turks and Saracens, denotes an ordinary judge, who decides in all civil controverſies within the diſtrict of a town or city, though ſubject to appeals to ſuperior judges.

The word is Arabic קדי or קאדי, q. d. *judge*, formed of קדי, *to judge*. D'Herbelot writes it *cadhi*.

The term cadi, uſed abſolutely, denotes the judge of a ſmaller town or village who judges, without appeal, all litigious affairs, not only of the muſſulmans, but even thoſe of the Jews and Chriſtians; thoſe of cities being called *mollas*, or *moulas*, ſometimes *mouli-cadies*, or *great cadies*. The place of a cadi, or of a molla, is frequently occupied by a lieutenant, called *naib*, who judges, like them, without appeal; he is a muderis, who runs the career of magiſtracy, and is generally appointed cadi the following year, and ſent to another poſt. The cadis remain in this rank, and obtain no other advancement beſides that of a tribunal, more extenſive, and, conſequently, more lucrative. They, nevertheleſs, become mollas of an inferior rank; ſuch are thoſe of Bagdad, Philopopolis, &c.; but they cannot become cadileſchers, muftis, &c. unleſs they enter the grand moſque of Soliman I. and continue their ſtudies. The tribunal of juſtice is denominated *makkama*, or *mekémé*.

We find numerous complaints of the avarice, extortion, and iniquity of the Turkiſh cadis; all juſtice is here venal; the people bribe the cadis; the cadis bribe the moulas; the moulas the cadileſchers; and the cadileſchers the mufti.

It is uſually vain to appeal, even if an appeal were allowed, from the ſentence of the cadi; ſince the affair is never heard anew, but judgment is paſſed on the caſe, as ſtated by the cadi. The tribunal, whence theſe cadis iſſue their deciſions, is ſometimes at their own houſes; but never at any place which correſponds with the idea annexed to ſo ſolemn an employment. In an empty mean apartment, the cadi is ſeated on a mat or wretched carpet; and on each ſide of him are his clerks and ſome domeſtics. The door is open to every body; the parties appear; and there, without interpreters, advocates, or attornies, each pleads his own cauſe. Squatted on the ground, they ſtate the facts, diſpute, and reply again in their turns, ſometimes the debates are violent; but the cries of the clerks, and the ſtaff of the cadi, ſoon reſtore order and ſilence. Gravely ſmoking his pipe, and twiſting the end of his beard round his finger, this judge liſtens, interrogates, and concludes by pronouncing a ſentence without appeal, which at moſt allows but two months delay. The parties are never very well ſatisfied; they retire, however, with reſpect, and pay a fee, eſtimated at one-tenth of the litigated property, without murmuring at the deciſion, as it is invariably directed by the "infallible Koran." Venality, indeed, is ſo barefaced, and ſo impudent, that the parties may bargain for their cauſe with the cadi, as they would for any common commodity. Corruption is habitual and general; nor is it likely to be otherwiſe in circumſtances, where integrity may be ruinous, and injuſtice lucrative; where each cadi, deciding without appeal, fears neither a reviſion of his ſentence, nor puniſhment for his partiality; and where, in ſhort, the want of clear and preciſe laws affords a thouſand ways of avoiding the ſhame of an evident injuſtice, by opening the crooked paths of commmentaries and interpretations. The cadis, nevertheleſs, are often caſhiered, and puniſhed for notorious injuſtice with the baſtonade and mulcts; but the law forbids them to be put to death. Conſtantinople has had cadis ever ſince the year 1390, when Bajazet I. obliged John Palæologus, emperor of the Greeks, to receive cadis into the city, to judge all controverſies happening between the Greeks and the Turks ſettled there. In ſome countries of Africa, the cadis are alſo judges of religious matters. Among the Moors, cadi is the denomination of their higher order of prieſts, or doctors, anſwering to the rabbins among the Jews.

Cadi, in *Ancient Geography*, a town of Myſia, according to Steph. Byz; but Strabo places it in Phrygia.

CADIA, in *Botany*, (the Arabic name of the plant,) Forſk. Arab. 90. Vitman Summa Plant. tom. iii. p. 141. L'Heret. Mag. Encyc. tom. v. p. 20. Vent. vol. iii. 374. (Panciatica, Hort. Pan. 1793. p. 9. Spændoncea, Deſfont. Dec. Philoſ. v. 56. p. 260.) Claſs and order, *decandria monogynia*. Nat. Ord. *Leguminoſæ*, Vent.

Gen. Ch. *Cal.* bell-ſhaped, five-cleft. *Cor.* petals five, rarely ſix or ſeven, inverſely heart-ſhaped, equal. *Stam.* filaments ten, rarely more, awl-ſhaped, a little curved, gibbous at their baſe, the length of the corolla, ranged in a circle near the petals; anthers oblong, incumbent. *Piſt.* germ pedicelled; ſtyle ſimple. *Peric.* legume linear, compreſſed, bent at the end, membranous, many-ſeeded. *Seeds* oblong, ſhining.

Eſſ. Ch. *Calyx* five-cleft; petals equal, inverſely heart-ſhaped; legume many-ſeeded.

Sp. C. *purpurea*, Ait. Hort. Kew. 3. 492. Picc. Hort. Pan. 9, with a coloured figure. A ſhrub. *Stem* about three feet high; branches and petioles pubeſcent. *Leaves* alternate, unequally pinnate; leaflets numerous, ſometimes oppoſite, ſometimes alternate, linear, retuſe, the nerve commonly ending in a little point; ſtipules briſtle-ſhaped, caducous. *Flowers* the colour of a peach-bloſſom, without ſcent; racemes few-flowered, axillary, pendant, ſhorter than the leaves. *Legume* leſs than a ſpan in length. *Seeds* eight or ten. A native of Arabia.

CADIANG, a kind of lentiles in Batavia, and the adjacent country, which makes a conſiderable part of the food of the common people. Dr. Hawkſworth's Account of the Voyage to the South Seas, vol. iii. p. 733.

CADIAPATAM Point, in *Geography*, lies on the coaſt of Malabar, in the Eaſt Indies, near the extremity of the peninſula of India, to the weſt of Cape Comorin. Poolytopu village is ſituated on the ſea-coaſt, E.N.E. 4 geographical miles from this point. N. lat. 8° 9′ 18″. E. long. 77° 26′ 35″.

CADIAR, a town of Spain in Grenada; 28 miles S.E. of Grenada.

CADIERE, La, a town of France, in the department of the Var, and diſtrict of Toulon; 3 leagues N.W. of it.

CADILESCHER, Cadi-lesker, or Kadilesker, a capital officer of juſtice among the Turks, anſwering to a chief-juſtice among us.

The word comes from the Arabic *kadi*, judge, the particle *al*, and *aſchar*, army; as being at their firſt inſtitution chiefly judges of the ſoldiery; of whoſe cauſes they have ſtill the ſole cognizance. D'Herbelot writes the name *cadileſkar*, or *cadhi-aſker*.

It is ſaid that this authority was originally confined to the ſoldiery; but that at preſent it extends itſelf to the determination of all kinds of law-ſuits; yet, nevertheleſs, ſubject to appeals.

At Conſtantinople there are two cadileſchers, who ſuperintend the concerns of the Ottoman empire; one of Romania, or of Turkey in Europe, and the other of Natolia, or of Turkey in Aſia. They were formerly the judges of military men, the former for European Turkey, and the latter for the Aſiatic countries, when the Sultan commanded them in perſon. The cadileſcher of Romania was then charged to decide on the affairs of the Muſſulmans, and the other on thoſe of the tributary ſubjects. For ſome time paſt, the former has the pre-eminence over the latter, and determines alone all the cauſes carried to his tribunal, by the ſole will and at the requeſt of the plaintiffs. The tribunal of the cadileſcher of Natolia has been a long time ſuppreſſed as uſeleſs. They both aſſiſt at the divan of the grand viſir, hear and diſcuſs the buſineſs brought before them; after which the cadileſcher of Romania alone pronounces the ſentence. The mufti preſents annually a liſt to the ſultan for the nomination of two cadileſchers, of the ſtambol effendi, of the mollas of Mecca and Medina, of thoſe of Burſa, Adrianople, Cairo, and Damaſcus, as well as of thoſe of Jeruſalem, Aleppo, Smyrna, Lariſſa, Salonica, Scutari, Galata, and Aijup, which is one of the ſuburbs of Conſtantinople. It is commonly according to the rank of ſeniority that the choice is made, when favour does not advance ſome protected perſon, or the ſon of ſome great man. When choſen, the cadileſchers remain in place only a year; but the cadileſcher of Natolia generally ſucceeds that of Romania, and the former has before paſſed through the ſame rank. To them it belongs to appoint all the ſimple cadis of the empire; and this circumſtance renders their place, in a country where every thing is venal, very lucrative, independently of the appanages which they poſſeſs. The cadileſcher of Romania appoints the cadis of Turkey in Europe, and that of Natolia appoints thoſe of Aſia and Egypt. Subordinate to them is the ſtambol-effendi, molla, or judge of the capital. See STAMBOL-EFFENDI. The cadileſchers are ſometimes advanced to the rank of *mufti* (which ſee); but according to the eſtabliſhed order, he muſt be choſen from among the cadileſchers of Romania, and thoſe who have occupied that employment. Thoſe who aſpire to the office of cadileſcher muſt paſs through a previous courſe of education. For this purpoſe there are attached to the imperial moſques of Conſtantinople, Burſa, and Adrianople, *madreſſes*, or colleges, to which young people are ſent, from all parts of the empire, to be inſtructed in the law of the prophet, in religious, civil, and criminal juriſprudence, and to learn all the opinions and all the ſubtleties of the commentators on the Koran. They then undergo various examinations, and when they are thought to be well informed, the rank of *muderis* or profeſſor is aſſigned to them. Theſe colleges were founded by different ſultans. The firſt was eſtabliſhed at Nicæa, in the year 1330, by Orkhan. They enjoy a conſiderable revenue, and provide for the ſupport of 2 or 3 thouſand ſcholars. The *muderis*, who are not willing to follow the career of profeſſor and obtain the eminent rank of molla, ſolicit of the cadileſchers the place of cadi, which is eaſily granted them for a pecuniary conſideration. The muderis, who are ambitious of obtaining the moſt important places, ſuch as thoſe of molla, cadileſcher, and mufti, paſs, after freſh examinations, to the moſque of Soliman I. and wait till their turn, their merit, or their intereſt procures for them an appointment. Eight of them, under the appellation of *makhredjé*, are appointed every year mollas, or judges, of the towns of Jeruſalem, Aleppo, Smyrna, Lariſſa, Salonica, Scutari, Galata, and Aijup. Four among the latter, are afterwards named to the cities of Burſa, Adrianople, Cairo, and Damaſcus, and the following year two of theſe become mollas of Mecca and of Medina; from among theſe laſt is taken the ſtambol-effendi. Thus, ſucceſſively in their turn, they arrive at the place of cadileſcher, and even of mufti. But the muderis, before they can attain to this diſtinction, muſt either be protected, or manifeſt ardent zeal for religion, diſtinguiſhed talents, great application to ſtudy, and very auſtere manners. The mollas, cadileſchers, and others who are not employed, and who are waiting for offices, have appanages or benefices, called "Arpaliks." Several obtain inferior tribunals, where they place naibs, who diſcharge their functions, and to whom they grant only a part of the income.

Tournefort (Voyage Lev. tom. ii. lett. 14.) erroneouſly aſſerts, that at Conſtantinople, a perſon could appeal from the ſentence of a cadi; whereas Europeans only enjoy that privilege, when the ſum in litigation exceeds 4000 aſpres, or nearly the value of 66 livres, ſuppoſing the piaſtre at two livres. In all the towns of Turkey, the molla, the cadi, and the naib, judge without appeal; they condemn to fines, to corporal puniſhment, or to death, without allowing to the delinquent, or perſon accuſed, the power of having recourſe to another tribunal. Pocoke, Egypt, p. 170. Volney's Travels in Egypt and Syria, vol. ii. p. 389, &c. Olivier's Travels in the Ottoman Empire, &c. p. 172, &c.

CADILLAC, or CADILHAC, in *Geography*, a town of France, in the department of the Gironde, and chief place of a canton in the diſtrict of Bourdeaux, ſeated on the banks of the Garonne, and containing a fine caſtle, with a collegiate church; 5½ leagues S. S. E. of Bourdeaux. The place contains 1326, and the canton 11,200, inhabitants; and the territory includes 97½ kiliometres and 16 communes. N. lat. 44° 37′. W. long. 0° 15′.

CADITES, an appellation given by Plott to a kind of figured ſtone, reſembling a cadus or barrel.

The cadites ſwells in the middle, and goes tapering to both ends, being divided lengthwiſe, with ſuch equidiſtant lineaments, as are uſually made by the ſtaves of a barrel, but without hoops, nor yet hollow.

CADIZ, in *Geography*, called *Gades* by the Romans, by the Phœnicians *Gadir* or *Gaddir*, i. e. a hedge or fenced place, and by ſome of the ancients *Tarteſſus*: a ſea-port city of Spain, ſeated on a promontory in the extremity of a peninſula, and joined to the iſle of Leon by a cauſeway. Towards the eaſt it is waſhed by the gentle waves of a well-protected road; but towards the weſt it is open and expoſed to the fury of the ocean. Both the harbour and bay of Cadiz are ſecure and ſpacious; the entrance being defended by fort Matargordo, and by fort Puntal ſtanding oppoſite to it on a point of that neck of land on which Cadiz is built. The entrance into the harbour betwixt theſe forts and the points on which they ſtand, is reckoned to be about 500 fathoms wide. During the time of ebb, a conſiderable part of the harbour is dry. The outer and furthermoſt bay, which begins between La Rota and San Sebaſtian, both of which are fortified, and extends to Puerto de Santa Maria, is divided into two parts by the rocks of Los Pueros and Diamante. On the ſouth ſide Cadiz is inacceſſible on account of the high and ſteep ſhore; on the north ſide alſo the acceſs is dangerous, by reaſon of many ſand-banks and rocks which lie under the water; and though the ſouth-weſt ſide admits of landing, it is defended by fort Santa Catalina, or St. Catharine. On the S. S. W. point is a ridge of rocks, part of which, at full ſea, is covered with water; the outermoſt of theſe is a ſmall iſland, on which are a guard and light-houſe, with two chapels, and alſo fort San Sebaſtian. The city, therefore, is ſuſceptible of attack only at the narroweſt part of the neck of land lying betwixt it and the S. E. part of the iſland of Leon; and on this ſide it is alſo fortified.

The beſt view of Cadiz and its environs is that which may be had from the ſignal tower; and hence you look immediately down upon the houſes, whoſe flat roofs, covered with a white cement, exhibit a ſingular but very pleaſing appearance. Towards the weſt, you command the ocean, with numerous veſſels, leaving or entering the harbour; and on the land ſide, you diſcover the four intereſting ſea-port towns of Rota, Santa Maria, Puerto Real, and Caraca, with the iſle of Leon and the connecting cauſeway; whilſt a rich country, verging towards the ſetting ſun, bounds the diſtant proſpect. The ſtreets of Cadiz are narrow, and yet well-paved and clean. The moſt beautiful part of the city looks towards the Puerto de Santa Maria, where the houſes are lofty, built of white free-ſtone, brought from thence acroſs the bay, and ornamented with painted balconies. In front they have a wide parade, well gravelled, planted with trees, and communicating with the ſea-road, where the merchantmen and ſhips of war find ſhelter. Two conſiderable ſquares, one for the market, the other called Plaza de San Antonio, with the Calle-ancha, or Broad-ſtreet, joining to it by way of mall, contribute both to ornament and health; and as the whole city is nearly encompaſſed by a rampart, this forms an elevated, airy, and delightful promenade, much frequented in the evenings. A ſmall part towards the weſt is bordered by five rows of elms, forming four avenues, adorned with elegant ſeats, and conſtituting the Alameda. Along the ramparts is alſo a row of houſes; and the ſhaded parts towards the ſouth ſerve for the lower claſſes to take their fieſta, and enjoy the luxury of the ſea-breeze. The inhabitants of Cadiz ſupply the want of other promenades by parties of pleaſure in the environs of the city. With this view they go out in carriages either to Puerto de Santa Maria, where are fine avenues and gardens, or to Chielana, near the iſle de Leon, which is almoſt entirely covered with country-houſes, and commands a very fine view of the bay, the town, and the ſea. Although the extent of Cadiz is very limited, yet its houſes are crowded together and are very lofty, ſo that the population is eſtimated at between 75 and 80,000. (Fiſcher's Travels in Spain.) Townſend (Journey through Spain, in 1786 and 1787), reckons them at no more than 65,987; but he ſays, that about 10 years ſince, they were computed at 85,000, beſides about 20,000 people who entered daily from the ſea and from the adjacent country. The moſt diſtinguiſhed buildings are the two cathedrals, the ancient and the new; the former is chiefly remarkable for ſome good pictures, and for its treaſure, conſiſting of gems, ſilver candleſticks, and lamps, numerous and bulky; three cuſtodias, one of which, conſtructed of the fineſt ſilver, weighs 51 arobas, or more than half a ton; and another conſiſts moſtly of ſolid gold. The new cathedral is a huge pile, with large and lofty domes, and many well-proportioned pillars; but upon the whole heavy and diſguſting. Near the cathedral is the Plaza de Toros, appropriated to the bull-feaſts, built entirely of wood. At a ſmall diſtance are the obſervatory, ill provided with inſtruments, and the academy for painting, ſculpture, and architecture. In the convents are ſome few good pictures. Of the three hoſpitals, one called the Royal or Military Hoſpital, is deſigned for ſoldiers, and accommodates 80 ſtudents, who are maintained and educated at the king's expence. It has a good botanical garden, and a theatre for diſſections, furniſhed with ſubjects from among the patients. The other two, one ſet apart for women, and the other for men, are diſtinguiſhed for their neatneſs. Beſides theſe hoſpitals for the ſick, Cadiz has a retreat for 47 widows, founded by a Turkey merchant, who died in 1756. But the moſt intereſting eſtabliſhment in this city, and the beſt conducted of its kind in Spain, is the hoſpicio, or general workhouſe. It accommodates (at an average of the year 1787) 855 paupers of every nation, age and ſex; who are either paſt labour, or inſtructed and employed in uſeful arts; and encouraged in proportion to the amount of their labour.

The heat of the climate at Cadiz is moderated by the ſea-breeze; ſo that even in ſummer it enjoys a happy temperature, and few places are more healthy: but it becomes more intenſe whenever the ſolano or ſouth-eaſt wind prevails. This paſſes to them over the ſcorching plains of Africa; and ſuch is its effect, that all the paſſions are inflamed, and during its prevalence, the inhabitants, who are moſt irritable, commit every ſpecies of exceſs.

This city abounds with almoſt all the neceſſaries and luxuries of life. Its fruits are cheap, and its moſt remarkable wines are ſherry and pacaretti, both of which are procured from Xeres and its vicinity. But they are much diſtreſſed for want of freſh water, which they are obliged to fetch from Puerto de Santa Maria; and their ice, which is uſed for cooling it, is brought from Sierra, at the diſtance of 13 leagues. For domeſtic purpoſes, ſuch as waſhing, &c. they collect their water in ſubterraneous ciſterns, but being ſubject to waſte by evaporation, it is procured with difficulty, and conſumed with great economy. For preventing a ſcarcity of corn, and in order to enſure a profit by the ſale of it, the city has eſtabliſhed a public granary, from which the bakers are ſupplied at a given price; and according to that the magiſtrates regulate the aſſize of bread. The theatre at Cadiz is large, elegant, and commodious; the principal actors are Italians; and the inhabitants are chiefly attracted to it by the comedies called Saynetes, and the whimſical dances denominated Voleros. In Lent, whilſt the moſt poliſhed orators confine themſelves to churches, other preachers harangue the multitude in the market-place, with a vehemence of voice and geſture ſuited to their congregations. Among the Franciſcans, when the penitential ſermon is finiſhed, the lights are extinguiſhed, and inſtantly ſcourges are applied. When the market-place is not occupied by orators, the ſcribes take poſſeſſion of it with their benches, at which they ſit with pen, ink, and paper, to write and read letters of all ſorts, and to execute every kind of deed. In the year 1720, the commerce, which for two centuries had proved a ſource of wealth to Seville, was tranſlated to Cadiz; and from that period its merchants have carried on a very conſiderable trade, which, however, has ebbed and flowed, according to incidental circumſtances. Indeed, this port has been the emporium of commerce to the Weſt Indies and America. Townſend informs us, that its whole trade employs about one thouſand veſſels, of which nearly one-tenth is Spaniſh. In 1784 the value of exports to America amounted, in Spaniſh and foreign produce, to 3,621,443 pounds ſterling; and the value of imports in money and jewels was 8,297,164 l. and in merchandiſe 2,990,757 l. The articles of merchandiſe are cochineal, indigo, cacao, ſugar, hides, Vicuna wool, cotton, copper, tin, tobacco, different kinds of wood, &c, which are diſtributed into different countries. Among the foreign merchants of all nations are many Germans, from Hamburg, Bohemia, and Augſburg. The former conſtitute the claſs called Hanſeatics, and according to ancient convention enjoy conſiderable privileges. To foreigners indeed Cadiz is much indebted for various means of literary intercourſe and improvement, as well as for the wealth reſulting from an extended commerce. The manufactures of Cadiz are principally reſtricted to ribbons and linen; and ſeveral perſons are employed in knotting ſilk, and marking ſtockings received from Niſmes, and intended to be ſhipped for the American ſettlements. The moſt intereſting branch of induſtry in the environs of Cadiz is the manufacture of ſalt; produced by the numerous ſalt-pools of the iſle of Leon, with little labour or expence, becauſe the ſun and air quickly cauſe the water to evaporate, and leave the ſalt cryſtallized. Cadiz is the ſee of a biſhop, ſuffragan of Seville.

The old *Gaddir* was built by the Tyrians; from them it was transferred to the Carthaginians; and afterwards it fell under the dominion of the Romans. It was recovered from the Moors in 1260. In 1596 Cadiz was taken and plundered by the Engliſh; and an unſucceſsful attempt was again made for ſeizing it in 1702. During the late and preſent war it has been held by the Engliſh, at different periods, in a ſtate of blockade. In ſome of the old Spaniſh chronicles, this city is denominated *Calis*, and hence Engliſh ſeamen uſually call it *Cales*. The tide runs here N.E. and S.W.; and it is high water at ſpring tides at half paſt four o'clock. N. lat. 36° 31′ 7″. W. long. 6° 11′ 50″.

Cadiz, a town on the north coaſt of the iſland of Cuba, in a bay of the ſame name, about 164 miles E. of Havannah, and 50 N. of Spiritu Santo. Nat. lat. 23° 2′. W. long. 79° 55′. A river of this name runs into the ſea, 10 miles E. from the town of Cadiz.

CADIZADELITES, a ſect among the Muſſulmen, reſembling the ancient Stoics, who avoid all feaſting and diverſion, and affect an uncommon gravity in all they do or ſay. Thoſe of them who inhabit the frontiers of Hungary, &c. agree in many things with the Chriſtians, and drink wine even in the faſt of the Ramazan.

They read the Sclavonic tranſlation of the Bible, as well as the Alcoran. Mahomet, according to them, is the Holy Ghoſt, which deſcended on the apoſtles at the feaſt of Pentecoſt.

CADLOCK, in *Botany*. See Sinapis.

CADMA, in *Entomology*, a ſpecies of Papilio found in America. The wings are indented, fulvous; diſk of the poſterior pair beneath white, with two ocellated ſpots, the pupil of which is double and blue. Drury, &c.

Cadma, in *rural Economy*, a term applied to the ſmalleſt of the pigs which a ſow has at one farrowing, and which is commonly much leſs than any of the others in the ſame litter.

CADMEAN *Letters*, the ancient Greek or Ionic characters, ſuch as they were firſt brought by Cadmus from Phœnicia; whence Herodotus alſo calls them *Phœnician letters*. See Cadmus.

According to ſome writers, Cadmus was not the inventor nor even the importer of Greek letters, but only the modeller and reformer thereof; and it was hence they acquired the appellation *Cadmean*, or *Phœnician letters:* whereas before that time they had been called *Pelaſgian letters*. See Letter and Writing.

CADMIA, in *Chemiſtry*. This term is entirely obſolete; as, however, it is of frequent occurrence in the writings of the older chemiſts, it may be proper to explain its meaning. Cadmia, according to Pliny, (Hiſt. Nat. lib. xxxiv. ch. xxii.) was the common name given to that earthy ſubſtance which was employed by the Cyprian artiſts in the manufacture of braſs: hence it is plain that it contained zinc, and was probably no other than the calamine of the moderns. The ſame word is alſo applied by the abovementioned author to the metallic ſoot or aſhes which collected in the chimnies of the braſs founderies It was an article of conſiderable uſe in the Roman pharmacopœia, and three varieties of it were diſtinguiſhed by ſeparate names: that called *Capnitis* reſembled aſhes, was the lighteſt and beſt eſteemed, and was depoſited at the fartheſt extremity of the chimney; the ſecond kind, named *Botryitis*, depended in cluſters from the central and lower part of the chimney, and was in high eſteem for diſorders of the eyes; the third variety, called *Placitis*, was a metallic ſcoria adhering to the ſides of the furnace, and was uſed for wounds and cutaneous eruptions; its colour was either blue, or black, and, no doubt, contained a conſiderable quantity of copper.

Succeeding chemiſts injudiciouſly ranked as *foſſil cadmia* not only calamine, but the arſenical and biſmuthic cobalt ore, and under the term *Cadmia fornacum* included all the kinds of metallic ſublimates that are depoſited in the chimnies of ſmelting houſes, whether of copper, braſs, lead, tin, &c.

CADMUS, q. d. *a man from the eaſt*, in *fabulous Hiſtory*, is reported to be a native of Sidon in Phœnicia, ſon of Agenor, king of that country, and brother of Europa. Having been ſent by his father's order in queſt of his ſiſter Europa, who had been tranſported by Jupiter to the Iſle of Crete, and being forbidden to return without her, he wandered for a long time to little purpoſe, and at length, deſpairing of ſucceſs, he ſettled at Tanagra upon the river Iſmenes in the Grecian province of Bœotia. He afterwards built Thebes, and laid the foundation of his new kingdom. The fable, however, ſays, that the walls of the city were raiſed by the harmony of Amphion's lyre, and that he only erected a citadel to which was given his own name, and merely laid the foundation of Thebes. When the city was finiſhed, he married Hermione, or Harmonia, the daughter of Mars and Venus; and his nuptials were graced with the preſence of all the gods and goddeſſes, Juno excepted, each of whom conferred ſome gift upon the bride. His kingdom is ſaid to have been very flouriſhing, and in the progreſs of his reign he was much beloved and reſpected by his ſubjects; though the anger of Juno, who envied his felicity, occaſioned many misfortunes, which haraſſed and grieved him before its termination. By his wife Harmonia, he had a ſon named Polydorus, who ſucceeded him in the ſovereignty of Thebes, by whom it was transferred to his ſon Labdacus, the father of Laius, to whom it deſcended, and who was the huſband of Jocaſta, the mother of Œdipus. He had alſo four daughters, viz. Ino, who threw herſelf into the ſea together with her children; Agave, whoſe ſon Pentheus was torn in pieces by the Bacchantes, for profaning the rites of Bacchus; Autonöe, the mother of Actæon; and Semele, the mother of Bacchus by Jupiter, who afterwards ſlew her with his thunderbolt. After having experienced many diſtreſſing viciſſitudes, Cadmus is ſaid to have retired with his wife Harmonia to the coaſt of Illyria, where they were both changed into ſerpents, or as ſome interpret the fable, where they degenerated from their priſtine civility into barbarians. The fable alſo reports, that he fought with a mighty dragon, whoſe teeth he afterwards ſtrewed on the ground, and from them was produced an army of men, who fought againſt one another, till they were all killed except five: whence a dearly bought victory obtained the appellation of "Victoria Cadmea." Some ſay that he was driven from the throne of Thebes by his grandſon Pentheus; and that having commanded the Enchelæ who were at war with the Illyrians, he ſubdued the latter, and ſurrendered the government to his ſon Illyrius, who was born after his retreat to this country. To Cadmus, Greece is ſuppoſed to have been indebted for the firſt introduction of letters; which are ſaid to have been of Phœnician origin, and 16 in number. Four others were afterwards added by Palamedes, and four by Simonides. He is alſo ſaid to have been the firſt who eſtabliſhed ſchools, and who taught the Grecians trade and navigation; and the epithet Cadmean, given to braſs, is aſcribed to him, becauſe he was the inventor of it, and becauſe he firſt introduced the uſe of it into thoſe parts. Wherever he came he alſo introduced the religion of his country, which conſiſted in the worſhip of Dionuſus, and in the rites denominated by the later Greeks the Dionuſiaca. They ſeem to have been much the ſame with the Cabiritic myſteries, which Cadmus is ſaid to have eſtabliſhed in Samothracia.

The arrival of Cadmus in Greece is placed by Dr. Blair about 1493 years B. C. and his death, at the age of 112 years, is ſaid to have happened in the year 1432 B. C. The arrival of Cadmus, and the foundation of Thebes, are dated in the Arundelian marbles the 64th year of the Attic æra, 1519 B.C. But Sir Iſaac Newton, and thoſe who adopt his chronology, allow Cadmus to have flouriſhed but 1045 years before the Chriſtian æra. Sir Iſaac imagines, that the emigration of the Phœnicians and Syrians was occaſioned by the conqueſts of David. "Theſe people," ſays he, (Chron. p. 13.) "fleeing from Zidon and from David, came, under the conduct of Cadmus, and other captains, into Aſia Minor, Crete, Greece, and Lybia, and introduced letters, muſic, poetry, metals and their fabrication, and other arts, ſciences, and cuſtoms of the Phœnicians. This happened about 140 years before the Trojan war. It was about the 16th year of David's reign that Cadmus fled from Zidon. At his firſt coming into Greece, he ſailed to Rhodes, and thence to Samothrace, an iſland near Thrace, on the north ſide of Lemnos, and there married Harmonia, the ſiſter of Jaſius and Dardanus, which gave occaſion to the Samothracian myſteries."

Bochart has, with great ingenuity and learning, attempted to ſolve the enigmas, under which the hiſtory of Cadmus is repreſented. He ſuppoſes, that Cadmus was a fugitive Canaanite, who fled from the face of Joſhua; and that he was ſo called from being a Cadmonite, which is a family mentioned by Moſes. Gen. xv. 9. Theſe Cadmonites were the ſame with the Hivites, and were called Cadmonim, or Eaſterlings, becauſe they inhabited mount Hermon, the moſt eaſtern part of Canaan; and Bochart ſuppoſes, that Harmonia derived her name from that of this mountain. The fable of Cadmus and Harmonia being transformed into ſerpents he aſcribes to their having retained the common name of Hivites, which in the Syriac ſignifies ſerpents. He explains the reſt of the fable, concerning the teeth of the dragon, which were ſown, and the armed men which ſprung from them, upon the ſame principle. The learned Bryant (Anal. Anc. Mythol. vol. ii. 138.) diſſents from Bochart in a variety of particulars. Indeed, he controverts the exiſtence of ſuch a perſon as Cadmus, and ſuggeſts ſeveral objections againſt the account given by Herodotus and others of the Cadmians having brought letters from Phœnicia into Greece. See LETTERS. The rites of Bacchus, he ſays, could not have been brought by Cadmus into Greece, if Bacchus was his deſcendant, or the ſon of his daughter Semele. It is ſaid, that Cadmus was a Phœnician; but Diodorus Siculus (lib. i. p. 20.) ſpeaks of him as an Egyptain, and a native of Thebais. Pherecydes Syrus alſo repreſents him as an Egyptian; and by others he is ſaid to have been the ſon of Antiope, the daughter of Belus, and conſequently of Babyloniſh extraction. It was from the ſame part of the world that the myſteries, in which Cadmus was ſo well ſkilled, were imported; and here it was, that he was taught hieroglyphics, and the other characters, which are aſcribed to him. Theſe arts he carried firſt to the coaſt of Sidon and Syria; and from thence he is ſuppoſed to have brought them into Greece. Mr. Bryant having ſtated the origin and country of Cadmus, proceeds to ſhew that the accounts which are given of him by Herodotus, Diodorus, Strabo, and Pauſanias, are inſufficient to prove the reality of ſuch an adventurer. It is not credible, he ſays, that a perſon ſhould ſo often rove upon the ſeas amid ſuch a variety of nations, and reſide among them at his pleaſure; much leſs that he ſhould build temples, found cities, and introduce his religion wherever he liſted; and that he ſhould do all this in the courſe of his tranſient viſits to different places. "Is it credible, that any perſon could have penetrated into the various regions, whither he is ſuppoſed to have gone? to have founded colonies in Phœnicia, Cyprus, Rhodes, Thera, Thaſus, Anaphe, Samothracia? to have twice viſited the Helleſpont? to have worked the mines in the Pangæan mountains, and in other places? to have made ſettlements in Eubœa, Attica, Bœotia, and Illyria? and, above all, to have had ſuch territories in Afric? He is repreſented as heir to the kingdom of Egypt: this he quitted, and obtained a kingdom in Phœnicia. He leaves this too; and after much wandering arrives in Greece; where he founds ſeveral cities, and reigns 62 years. After this, hard to conceive! he is made king in Illyria. He muſt alſo have reigned in Afric; and his dominions ſeem to have been conſiderable, as he founded an hundred cities. He is repreſented as a king in Armenia; and had there too no ſmall territory. Sure, kingdoms in thoſe times muſt have been very cheap, if they were ſo eaſily attainable. But the whole is certainly a miſtake; at leaſt, in reſpect to Cadmus. No perſon could poſſibly have effected what is attributed to him. They were not the achievements of one perſon, nor of one age. And place Cadmus at any given æra, and arrange his hiſtory, as may appear moſt plauſible; yet there will ariſe numberleſs inconſiſtencies from the connexions he muſt have in reſpect to time, place, and people; ſuch as no art nor diſpoſition can remedy."

Should it be aſked, if there were no ſuch man as Cadmus, what did the ancients allude to under this character, and what is the true purport of theſe hiſtories? The anſwer of Bryant is, that the travels of Cadmus, like the expeditions of Perſeus, Seſoſtris, and Oſiris, relate to colonies, which at different times went abroad, and were diſtinguiſhed by this title. Cadmus, he ſays, was one of the names of Oſiris, the chief deity of Egypt. Both Europa and Harmonia are of the like nature. They were titles of the deity; but aſſumed by colonies, who went out and ſettled under theſe denominations. Cadmus was one of thoſe deities. He was the ſame as Hermes of Egypt, called alſo Toth, Athoth, and Canathoth; and was ſuppoſed to have been the inventor of letters. He was ſometimes ſtiled Cadmilus, another name for Hermes; under which he was worſhipped in Samothracia and Hetruria. Lycophron (v. 219.) ſpeaking of the prophet Prulis in Leſbos, tells us, that he was the ſon of Cadmus, and of the race of Atlas. And he was the perſon who was ſuppoſed to give information to the Greeks, when they were upon their expedition to Troy. Harmonia, the wife of Cadmus, who has been eſteemed a mere woman, ſeems to have been an emblem of nature, and the foſtering nurſe of all things. Harmonia was ſuppoſed to have been a perſonage, from whom all knowledge was derived. Accordingly, Hermon, or Harmonia, was a deity to whom the firſt writing is aſcribed; and the ſame is ſaid of Hermes. Cadmus is ſaid not only to have brought letters into Greece, but to have been the inventor of them; from whence we may fairly conclude, that under the character of Hermon, Hermes, Taut, Thoth, and Cadmus, one perſon is alluded to. The deity called by the Greeks Harmonia, was introduced among the Canaanites very early by people from Egypt; and was worſhipped in Sidon, and the adjacent country by the name of Baal-Hermon. Europa was likewiſe a deity; the ſame, according to Lucian, as Aſtarte, who was worſhipped at Hierapolis in Syria. Cadmus, ſays Bryant, may principally be eſteemed Ham, who by his poſterity was looked up to as the ſun, and worſhipped under his titles; a circumſtance, which was common to all, who were ſtyled Baalim. His name favours this conjecture; for according to the etymological ſyſtem of this writer, the ſun was ſtyled Achad, and Cadmus is a compound of Achad-Ham, rendered by the Greeks Acadamus and Academus, and contracted Cadmus. Upon the whole, if inſtead of one perſon Cadmus, traverſing ſo much ground, and introducing the rites of his country at Rhodes, Samos, Thera, Thaſus, Samothrace, and building ſo many cities in Libya, we ſuppoſe thoſe things to have been done by colonies, who were ſtyled Cadmians; all will be very right, and the credibility of the hiſtory not diſputed. Many difficulties will be ſolved; and great light will be thrown upon the mythology of the ancients. The ſtory then of Cadmus and Europa relates to people from Egypt and Syria, who went abroad at different times, and ſettled in various parts. They are ſaid to have been determined in their place of reſidence by an ox or cow; which denotes that they were directed by an oracle; and this leads us to the Egyptian Apis. The Cadmeans, according to Bryant, were a two-fold colony, which came both from Egypt and Syria; from Egypt firſt, and then from Syria and Canaan. In their progreſs weſtward, they ſettled in Cyprus, Rhodes, Samos, Leſbos, and Thrace; alſo in Eubœa, Attica, and Bœotia. In proceſs of time they formed ſettlements in other parts; particularly in Epirus and Illyria; and occupied ſome conſiderable provinces in Italy, as high up as the Padus. Wherever they paſſed or ſettled, they left behind them a variety of memorials; and eſpecially ſuch as related to their rites and worſhip. See Cuthites.

Cadmus Milesius, in *Biography*, an ancient hiſtorian, who, according to Moreri, lived about the time of the Trojan war. Pliny, in ſpeaking of the invention of things, informs us, (lib. vii. c. 56.) that Pherecydes Syrus taught the compoſition of diſcourſes in proſe, during the reign of Cyrus; and Cadmus Mileſius to write hiſtory: and in another place (lib. v. c. 29.) he ſays, that Cadmus Mileſius was the firſt who wrote in proſe. He compoſed "The Antiquities of Miletus and of all Ionia," in 4 books: a work on this ſubject, mentioned by Dionyſius of Halicarnaſſus, and attributed to this hiſtorian, was thought by the beſt judges, as he informs us, to have been ſuppoſititious.—Another Cadmus, alſo a Mileſian, was, according to Suidas, much younger than the former; and wrote "The Hiſtory of Attica," in 16 books.

Cadmus, in *Entomology*, the name under which Cramer figures the Braſilian ſpecies of Papilio, called by Fabricius Acheronta. The wings of this inſect are indented, and furniſhed with tails; anterior pair red at the baſe, the tip black, ſpotted with white. *Fabr.*

CADOEPAN, in *Geography*, an iſland in the Indian Ocean, S.E. of Bouton, and near the iſlands of St. Matthew and Touran-Beſſis, in which many cloves are produced.

CADOGAN, William, in *Biography*, educated at Oriel College, Oxford, took his degree of maſter of arts in 1755; and the ſame year was made bachelor and doctor in medicine. He had previouſly, viz. in 1750, publiſhed a ſmall treatiſe on the nurſing and management of children, which was much eſteemed, and contributed toward aboliſhing ſome improper treatment, both in feeding and dreſſing infants. They were firſt adopted by the managers of the Foundling Hoſpital, and by degrees became general. His next publication was "Diſſertations on the Gout, and all Chronical Diſeaſes," 1764, 8vo.; written in a popular manner, and ſo generally read, that ſeveral large impreſſions were ſold of it. The three principal cauſes or ſources of gout, he ſays, are indolence, vexation, and intemperance. The book was much cavilled at, and was anſwered by two or three different writers. It is, on the whole, well written, and the regulations given for the conduct of gouty patients, with the view of mitigating the fit, and preventing frequent relapſes, or returns of the complaint, are judicious, and well deſerving attention. He was fellow of the college of phyſicians, and, which is by no means uſual, ſpoke two Harveian Orations, the one in the year 1764, the other in 1793. They were both publiſhed. He died at a very advanced age, at his houſe in George-ſtreet, Hanover-ſquare, April 26, 1797.

CADOGNA, in *Geography*, a town of Naples, and province of Principato Ultra; 15 miles N.N.E. of Conza.

CADOLZBURG, a town of Germany, and prefecturate of the ſame name, in the circle of Franconia, and Margraviate of Anſpach; the town is ſurrounded with walls, and defended by a caſtle; 18 miles N.E. of Anſpach.

CADORE, or Pieva di Cadore, a town of Italy in the Treviſan, and capital of the Cadore, or Cadorin, belonging to the ſtates of Venice, and famous for the birth of Titian the painter; 42 miles N.E. of Trent. N. lat. 46° 25′. E long. 13° 45′.

Cadore, or Cadorin, a ſmall and mountainous diſtrict of the Treviſan, or Trevigiana, belonging to Venice; bounded on the north by the biſhopric of Brixen; on the eaſt by Friuli; on the ſouth by the Belluneſe; and on the weſt by the Belluneſe and biſhopric of Brixen; about 25 miles long, and from 10 to 15 broad.

CADOUIN, a town of France, in the department of Dordogne, and chief place of a canton, in the diſtrict of Bergerac. The place contains 603, and the canton 5833 inhabitants; and the territory includes 152½ kiliometres, and 12 communes.

CADOURS, a town of France, in the department of the Upper Garonne, and diſtrict of Toulouſe. The town contains 826, and the canton 6962 inhabitants: the territorial extent comprehends 172½ kiliometres, and 17 communes.

CADRITES, a kind of religious among the Mahometans; whoſe founder was Abdul Cadri, a great philoſopher and lawyer; whence they take their name, *Cadrites*.

They live in common, and in a kind of monaſteries, which, however, they are allowed to quit, if they requeſt it, and to marry, on condition of their wearing black buttons on their garments to diſtinguiſh them from the reſt of the people.

In their monaſteries, they paſs the greateſt part of every Friday night in running round, holding each other's hand,

and crying inceſſantly, *hhai, living*, one of the names of God: one of the number plays all the time on a flute, to animate them in this extravagant dance.

CADSAND, in *Geography*, an iſland on the coaſt of Dutch Flanders, at the mouth of the Scheldt, ſituated on the ſouth ſide of the entrance into the Weſt Scheldt oppoſite to Fluſhing, ſo as to command the navigation of that river. It is preſerved by elevated dykes conſtructed at great expence, from the inundations of the ſea; and, nevertheleſs, expoſed to danger, when the north-weſt wind blows with violence. The land is fertile, and yields excellent corn; the meadows are luxuriant, and the farmers make a conſiderable quantity of good cheeſe. The perſecuted French and Saltzburghers found an aſylum in this iſland. The chief town is Caſſandria.

CADUCEATOR, in *Antiquity*, a denomination given to heralds or meſſengers of peace. See Caduceus.

CADUCEUS, or Caduceum, Mercury's rod or ſceptre; a wand entwiſted with two ſerpents, worn by that deity as the enſign of his quality and office; and given to him, according to the fable, by Apollo, for his ſeven-ſtringed harp.

The poets attribute wondrous virtues to the caduceus: as that of throwing people into a ſleep, raiſing the dead, &c. It was alſo uſed by the ancients as a ſymbol of peace and concord: the Romans ſent the Carthaginians a javelin, and a caduceus, offering them their choice, whether of war or peace.

Among that people, thoſe that denounced war were called *feciales*, and thoſe who went to demand peace, *caduceatores;* becauſe they bore a caduceus in their hand.

The caduceus found on medals is a common ſymbol ſignifying good conduct, peace, and proſperity. The rod expreſſes power, the two ſerpents prudence, and the two wings diligence.

Wedelius has given a diſſertation expreſsly on *caduceated* medals. Böttiger in his "Griechiſche Vaſengemæhlde, &c." or "Grecian Paintings on Vaſes" illuſtrated (vol. i. p. 2.), Weimar, 1798, has ſuggeſted ſome new and ingenious ideas with reſpect to the origin of the caduceus. According to this writer, the deity called Hermes by the Greeks, and Mercury by the Romans, owed his imaginary exiſtence entirely to the commercial intercourſe of the Phœnicians with the Greeks. At ſome remote period, the former had mines and factories in many places of Greece. There Hermes was worſhipped as the tutelar deity of the induſtrious Phœnicians; and all the arts, by which the articles of trade are produced, were aſcribed by the Greeks to his invention. The Phœnicians, of courſe, in order to converſe with the rude natives, employed interpreters. Hence Hermes was conſidered as the inventor of articulate ſounds, and of numeral figures and ſigns. The interpreters and heralds were called his ſons, and the race of κήρυκες is ſaid to have deſcended from him. The Phœnician traders, wherever they firſt approached the rude Pelaſgic inhabitants of the Grecian coaſts, found it neceſſary to uſe ſome manifeſt token of their having arrived with peaceful intentions; not as pirates, but as merchants and barterers. In ſuch inſtances, the moſt natural ſign of peace among all nations, even among the inhabitants of the Friendly Iſlands in the South Seas, has ever been a green branch. The Phœnicians, however, ſoon found it more convenient, as well as more ornamental, to carry with them a decorticated or even a gilt ſtaff; and, as occaſion required, to wind round it green leaves. Such is the wand of Mercury in Homer. (Hymn. in Mercur. 529—532.)

Caduceus is alſo a name given to a kind of ſtaff covered with velvet, and decorated with *fleurs de lys*, which the French heralds of arms bear in their hands on ſolemn occaſions. That borne by the king at arms has a golden *fleur de lys* at the end, and is by ſome called ſceptre.

CADUCOUS, in *Botany*, a term employed to expreſs the ſhort duration of one part of a plant compared with another: thus, a caducous calyx falls off before the petals, as in poppy and celandine; a caducous corolla falls off immediately after its expanſion, and before the anthers have ſhed their pollen, as in actæa and thalictrum. A ſtipule is caducous, when it falls off before the leaf; and a bracte, when it does not continue as long as the flower. A leaf is alſo ſaid to be caducous, when it does not remain till the end of the ſummer. It always implies a ſhorter duration than is intended by the term deciduous.

CADUCUS *Morbus*, or Falling Sickness, in *Medicine*. See Epilepsy.

CADURCI, in *Ancient Geography*, a people of Gaul, who inhabited the town of Divona. Ptolemy. They are mentioned by Cæſar, Strabo, and Pliny. Their territory is the preſent Quercy, the capital of which is Cahors.

CADUS, an ancient liquid meaſure of capacity, containing ten, ſometimes twelve, *congii;* and ſixty, or according to others, ſeventy-two *ſextaries*.

The cadus is the ſame with what is otherwiſe denominated *metretes* and *cerameon*. See Amphora.

CADUSIA, in *Ancient Geography*, a country of Aſia, being part of Atropatene, according to Strabo.

CADUSII, or Cadusians, a people who inhabited the diſtrict lying to the ſouth of Babylon, between the Tigris and the Euphrates. They were a powerful people, and enemies of the Aſſyrians; and their alliance was ſought by Cyrus, in his war againſt the king of Aſſyria.

CADYNA, or Caderia, a town of Aſia Minor, in the mountains of Lycaonia, according to Strabo.

CADYTIS, a town of Aſia in Syria, mentioned by Herodotus, and ſuppoſed by Reland to have been Gath. As it was near the ſea, it could not have been Jeruſalem, as M. D'Anville conjectures. Others have ſuppoſed it to have been the Cedaſſa of Joſephus, and others refer it to Gaza.

CÆCA, in *Ichthyology*, a ſpecies of Muræna, apterygious, with the ſnout ſomewhat acute. Found in the Mediterranean Sea.

Cæca, in *Zoology*, a ſpecies of Nais, with lateral ſetoſe warts, and without eyes. Found in the bays of Iceland and Chriſtianſand, in Norway.

Cæca, a ſpecies of Nereis, ſub-convex, with two very ſhort tentacula, and the lamellæ of the pedunculi duplicate and ciliate. Fabr.

CÆCÆ *Glandulæ*. See Glands.

CÆCIA, in *Ancient Geography*, the name of two iſles, which Pliny places in the vicinity of the Spiræan promontory.

CÆCILIA, in *Entomology*, an African inſect of the Papilio genus, the wings of which are white in the middle, with black dots; poſterior ones margined with black, dotted beneath with white. Fabr.

Cæcilia is alſo a ſynonymous name of Papilio Amyntor of Fabricius, in the works of Cramer.

Cæcilia, in *Ichthyology*, among old writers, the fiſh denominated by modern naturaliſts *ſyngnathus acus*.

Cæcilia, in *Zoology*, a genus of ſerpents diſtinguiſhed by having wrinkles on the body and tail, and two tentaculæ on the upper lip.

There are only two ſpecies of this genus at preſent known, namely *tentaculata* and *glutinoſa*.

Cæcilia, the general name under which ſeveral creatures have been deſcribed by old writers. Lacerta chalcides is called Cæcilia major by them; Anguis fragilis of the Linnæan *Fn. Suec.* is named by different writers Cæcilia vulgaris, Cæcilia Geſneri, and Cæcilia typhlus. *Aldrovandus*, *Ray*, &c. Cæcilia maculata of Cateſby is the Anguis ventralis of Gmelin, &c.

Cæcilia Castra, in *Ancient Geography*, probably the Cæciliana of Antonine, now *Caceres*, a place of Spain in Luſitania, according to Pliny and Ptolemy.

CÆCILIANA, in *Botany*, a name uſed by Pliny and ſome other authors for the *tutſan*, or *androſemum*. Ger. Emac. Ind. 2.

CÆCILIUS Statius, in *Biography*, a Latin comic poet, the contemporary and companion of Ennius, was a native of Inſubrian Gaul, or, as ſome ſay, of Milan, and lived at Rome in a ſervile condition about the year 177 B.C. As a writer of comedy he was eminent, though Cicero finds fault with his Latinity. Some fragments of his works are collected by Robert Stephens, and publiſhed in the "Corpus Poetarum," Lond. 1714. Nouv. Dict. Hiſt.

CÆCIMACULA, in *Entomology*, a ſpecies of Phalæna (*Noctua*), with dentated grey wings, two black points at the baſe, and two cinereous ſtreaks. Fabr.

CÆCINA, in *Ancient Geography*, a river of Italy, in Etruria.

CÆCINUM, a town of Italy in Brutium, watered by the river Cæcinus.

CÆCUM, in *Anatomy*. See Cœcum.

CÆCUS, in *Zoology*, a ſpecies of Coluber, duſky-red, having its ſcales marked with a white ſpot.

CÆCUTIENS, in *Entomology*, a ſpecies of Apis, brown, with a ſmooth ferruginous abdomen, ſpotted on both ſides with black. Fabricius. Found in the gardens of Leipſic.

CÆDIUS, in *Ancient Geography*, a river of Sardinia. Ptolemy.

CÆLATURA, or Cœlatura, the art of engraving on metals, ſtones, woods, or the like, with inſtruments of ſteel, diamond, &c. See Sculpture.

CÆLEBS, in *Entomology*, a ſpecies of Cimex (*Rotundatus*), browniſh grey, with three points on the ſcutellum, and the apex yellowiſh. Fabricius. Found in New Holland.

CÆLESTIANS, the followers of Cæleſtius, a monk, who flouriſhed under the empire of Arcadius, about the year 405, and taught much the ſame doctrines as Pelagius.

The native country of Cæleſtius is not certainly known; ſome ſay it was Ireland; others, Scotland; and others ſay that he was a native of Campania in Italy. This, however, is certain, that he was deſcended of an illuſtrious family, and that, after having applied for ſome time to the ſtudy of the law, he retired from the world and embraced the monaſtic life. He accompanied Pelagius into Sicily in 408 or 409, and afterwards, in 411, into Africa; from thence he went to Aſia, Rhodes, and the neighbouring iſlands, diſſeminating the doctrines of Pelagius, ſo that thoſe who embraced them derived from him the appellation of Cæleſtians. Having been conſtrained to leave Conſtantinople in the year 416, he returned to Rome in the following year, and ingratiated himſelf with pope Zoſimus, and obtained a letter in his favour to the African biſhops. In 418, however, he was baniſhed from Rome by virtue of a law enacted by the emperor Honorius againſt the Pelagians; but he afterwards returned, and was again ordered to depart from Italy. Accordingly he repaired to Conſtantinople, where for ſome time he met with a more favourable reception. At length, about the year 431, a memorial was preſented againſt him and his accomplices, by Marius Mercator, to the emperor Theodoſius, and they were ordered to depart from the city. Of his ſubſequent hiſtory, and the termination of his life, the ancients have furniſhed no records. Cave, Hiſt. Lat. t. 1. p. 385. See Pelagians.

CÆLESTINE. See Celestine.

CÆLESTINI, in *Ancient Geography*, a people of Italy, in Umbria.

CÆLESTINUS, in *Entomology*, a ſpecies of Curculio; cæruleous, with the antennæ and legs ſanguineous. Found in Germany.

CÆLETÆ, in *Ancient Geography*, a people of Thrace, ſeparated by the Hebrus. Some of them lived near mount Hæmus, and others near mount Rhodope.

CÆLIA, an epiſcopal city of Africa, in Numidia.

Cælia, or Cælium, a town of Italy in Apulia.

CÆLINA, a town of Italy on a river of the ſame name.

CÆLIUS Mons, a place of Vindelicia, N.E. of Lacus Brigantius, and S. W. of Auguſta Vindeliciorum.

Cælius Mons, the name of one of the ſeven mountains on which the city of Rome was founded, ſo called from Cælius, an Hetrurian general.

Cælius *Aurelianus*, the only remaining writer of the ſect of the Methodiſts in medicine, is ſuppoſed to have been a native of Sicca in Africa, although, as Haller obſerves, no reference is made to that country in his work. From his ſtyle, which is harſh and barbarous, Le Clerc ſuppoſes he lived in the 15th century. The work by which he is known is a tranſlation into Latin of the writings of Soranus, an Epheſian phyſician, the head of the methodic ſect, to which he has added obſervations collected from other writers and ſome from his own practice. It conſiſts of eight books, three on acute and five on chronic diſeaſes. They were firſt printed, "Celerum vel acutarum Paſſionum Libri Tres," Paris, 1529, and "Tardarum Paſſionum Libri Quinque, Baſileæ, 1529, both in folio. Dalechamp, in 1567, publiſhed the work complete with notes, at Lyons, 8vo. It alſo enters into the "Medicæ Artis Principes," by Stephens and by Haller. The work has the merit of preſerving fragments from the writings of ſeveral ancient authors in medicine, which would otherwiſe have been loſt, as well as of imparting a knowledge of their doctrines. The author is very free in his cenſures on the works he examines, and appears to have been an intelligent and attentive practitioner. He treats of ſeveral diſeaſes not mentioned by any earlier writers, and has ſome obſervations in ſurgery peculiar to himſelf. He mentions an inſtance of hydrophobia occurring in a perſon who had not been bitten by any rabid animal, and of hydatids in ſome kinds of dropſy. He had ſeen a fit of the gout terminate in apoplexy, in conſequence of the too liberal uſe of bitter and acrid ſubſtances. He recommends injections of oil for the cure of aſcarides, or to deſtroy thoſe worms; and has numerous other obſervations equally pertinent and ingenious. Le Clerc Hiſtoire de Med. Haller. Bib. Med.

CÆMENT, in a general ſenſe, any compoſition of a glutinous or tenacious nature, proper to bind, unite, or keep things in coheſion.

The word is alſo written *cement*, and even *ciment*. It is formed from the Latin *cæmentum*, of *cædo*, I beat. Though M. Felibien obſerves, what the ancient architects called *cæmentum* was a very different thing from our *cæment*. The name *cæment*, with them, ſignified a kind of maſonry, or manner of laying the ſtones, and even the quality of the ſtones; as when the walls were built of rude, unequal ſtones. In reality, the ſtones were cut for ſuch work, but not ſquared or uniform; ſo that *cæmenta* ſtood oppoſed to *quadriti lapides*.

Cæment is particularly uſed in *Architecture*, for a ſtrong binding ſort of mortar, uſed to bind or unite bricks or ſtones together, for ſome kind of mouldings; or to make a block of bricks, for the carving of ſcrolls, capitals, &c.

It is of two ſorts: the *hot cæment*, which is the moſt common, is made of reſin, bees wax, brick-duſt, and chalk, boiled together. The bricks to be cemented are heated, and rubbed one upon another, with cæment between.

The *cold cæment* is leſs uſed; and is made of Cheſhire-cheeſe, milk, quick-lime, and whites of eggs.

Mortar, ſolder, glue, &c. are *cæments*. The bitumen brought from the Levant is ſaid to have been the *cæment* uſed in the walls of Babylon.

Equal quantities of powdered glaſs, ſea-ſalt, and iron filings, mixed with loam, made a very hard and durable *cæment*.

Mr. Boyle informs us, that the beſt method to cloſe and repair pipes of ſubterraneous aqueducts is with tobacco-pipe clay pulverized, and mixed with a large quantity of pulverized flocks, and carefully beat up with linſeed oil into a ſtiff paſte. See Mortar and Tarras.

Cæment is alſo uſed among *Goldſmiths*, *Engravers*, *Jewellers*, &c. for a compoſition of fine brick-duſt, well ſifted, reſin, and bees-wax; in uſe among thoſe artificers to keep the metals to be engraven, or wrought on, firm to the block, &c. as alſo to fill up what is to be chiſſelled.

The receiver of an air pump may be faſtened to a metalline plate by means of a cæment of bees-wax and turpentine, made with equal parts, for the winter; and three parts of the former to two of the latter, for the ſummer. We have various receipts for making cæments to mend broken china and glaſſes: one of the fineſt, and at the ſame time ſtrongeſt cæments for this purpoſe, is the juice of garlick, ſtamped in a ſtone mortar; this, if applied with care, will leave little or no mark. Another cæment for broken glaſſes, china or earthen ware, may be prepared by beating the white of an egg very clear, and mixing it with fine powdered quick-lime; or iſinglaſs; powered chalk and a little lime may be mixed together, and diſſolved in fair water; with which the glaſſes, &c. are to be cemented, and then ſet in the ſhade to dry.

Drying oil with white lead is alſo frequently uſed for this purpoſe; but where the veſſels are not expoſed to heat or moiſture, iſinglaſs glue, with a ſmall quantity of tripoli, or chalk, is better.

Some have recommended a cæment made by tempering quick-lime with the curd of milk, till it become of a proper conſiſtence for uſe; but as cheeſe has a greater degree of tenacity than milk, the following compoſition will be preferable. Let the thin ſhavings of ſweet cheeſe be ſtirred with boiling water; and when the tenacious ſlime has been worked with other hot water, let it be mixed on a hot ſtone, with a proper quantity of unſlaked lime, into the conſiſtence of a paſte, and it will prove a ſtrong and durable cæment for wood, ſtone, earthen-ware, and glaſs; and it has this advantage, that when it is thoroughly dry, it will receive no injury from water. C. Pajot, of Charmes, lately tranſmitted to the Philomathic Society and the National Inſtitute of France, ſmall bits of glaſs, which he had joined and ſoldered ſo firmly that the glaſs would rather break cloſe to the junction than in the fracture; but he concealed his proceſs for this purpoſe. However, it is not difficult to be aſcertained. By interpoſing between the broken parts a glaſs ground like a pigment, but more eaſily fuſible than the pieces to be joined, and then expoſing them to ſuch a heat as will fuſe the cementing ingredient, the pieces will be made to agglutinate without being themſelves fuſed. A glaſs fit for the purpoſe of cementing broken pieces of flint glaſs may be made by fuſing ſome of the ſame kind of glaſs, previouſly reduced to a powder, along with a little red lead and borax, or with the borax only.

A cæment may be prepared for chemical glaſſes that will bear the fire, by mixing equal quantities of wheat-flour, fine powdered Venice glaſs, pulverized chalk, with half the quantity of fine brick-duſt, and a little ſcraped lint, in the whites of eggs: this mixture is to be ſpread upon a linen cloth, and applied to the cracks of the glaſſes, and ſhould be well dried before they are put into the fire.

Old varniſh will likewiſe anſwer the ſame purpoſe. A very uſeful cæment for joining alabaſter, marble, porphyry, and other ſtones, may be prepared in the following manner. Melt two pounds of bees-wax, and one pound of reſin; add a pound and a half of the ſame kind of matter pulverized as the body to be cemented is compoſed of, and ſtir them well together; let the maſs be kneaded in water, and heated when applied to the heated parts of the body to be cemented. The colour of this maſs may be adapted to that of the body on which it is employed, by varying the proportion of the powdered matter added to the maſs of bees-wax and reſin.

Jewellers, in joining pieces of precious ſtone that are accidentally broken in the operation of ſetting, employ a ſmall piece of gum-maſtich applied between the fragments, previouſly heated ſo as to melt the interpoſed gum. They are then preſſed together ſo as to force out the redundant quantity of it. The Turkey cæment for joining metals, glaſs, &c. is prepared by diſſolving five or ſix pieces of maſtich of the ſize of peas in a ſufficient quantity of ſpirits of wine, and diſſolving as much iſinglaſs (previouſly ſoftened in water) in brandy or rum, as will make two ounces by meaſure of ſtrong glue; and adding two ſmall bits of gum-galbanum, or ammoniacum, rubbed or ground till they are diſſolved; let the whole be mixed with ſufficient heat, kept in a ſtopped phial, and when uſed ſet in hot water.

Kaſtellyn recommends a cæment for filling up cracks and fiſſures in iron veſſels, which conſiſts of ſix parts of yellow potter's clay, one part of the filings of iron, and a quantity of linſeed oil ſufficient to form the whole into a paſte of the conſiſtence of putty. A durable cæment for joining the flanches of iron cylinders, and other parts of hydraulic and ſteam engines, may be formed by boiling linſeed oil, litharge, red or white lead, duly mixed, and applied on each ſide of a flannel filling the joint, which ſhould be put between the pieces before they are cloſely united by ſcrews or other faſtenings. Another cæment that will ſtand the action of boiling water and ſteam, may be prepared by rubbing in a mortar and thus mixing together two ounces of ſal-ammoniac, one ounce of flowers of ſulphur, and 16 ounces of caſt iron filings or borings. When this cæment is wanted for uſe, one part of the above powder, and 20 parts of clean iron borings or filings, ſhould be intimately blended by grinding them in a mortar, and when uſed, moiſtened with water, and applied to the joints with a wooden or blunt iron ſpatula.

Copper-ſmiths often apply to the rivets and edges of ſheets of copper in large boilers, and in order to ſecure cocks from leaking, &c. a mixture of pounded quick-lime with ox's blood. This muſt be uſed when freſh made: and it is both cheap and durable.

For an account of Higgins's water cæment for building, repairing, and plaſtering walls, and for other purpoſes, ſee Stucco.

The beſt cæment for electrical purpoſes is made with two parts of reſin, two of bees-wax, and one of the powder of red ochre. Theſe ingredients are melted, and mixed together in any veſſel over the fire, and afterwards kept for uſe. This adheres well, is leſs brittle than reſin, and inſulates as well. A ſtrong cæment for ſuch purpoſes may be made by melting one pound of reſin over a ſlow fire, and adding to it as much plaſter of Paris, as is neceſſary to ſufficiently harden it; and then adding a ſpoonful of linſeed oil, ſtirring it during the mixture. A cæment for glaſs-grinders may be prepared by mixing fine ſifted wood-aſhes with boiling pitch, and adding a little tallow, as may be found neceſſary. Shell-lac is a good cæment for holding metals, glaſs, or precious ſtones, while they are cut, turned, or ground. Flour paſte is uſed as a cæment by book-binders and paper hangers; and they ſometimes mix with the wheaten flour a fifth or ſixth of its weight of powdered reſin or alum, and if it be deſired of a more tenacious conſiſtence, they add gum-arabic, or any kind of ſize. Japaneſe cæment or rice glue, is made by well mixing rice-flour with cold water, and gently boiling it. This is extremly uſeful on a variety of occaſions; particularly in the preparation of curious paper articles, as tea-trays, dreſſing-boxes, and other ſuch things, which require layers of papers to be cemented together. With this compoſition models, buſts, ſtatues, and baſſo relievos, may be formed; and they admit of a high poliſh.

For the manner of preparing a cæment to bind together the various embelliſhments of grottos, ſee Grotto. See alſo Glue, Lute, Paste, Putty, Size, and Solder.

Cæment, for *gilding fiſh*. See Gilding *of fiſh*.

Cæment, in *Chemiſtry*. See Cement.

Cæment, *calcareous*. See Cements, *calcareous*.

Cæment, or *ziment copper*, is copper precipitated from vitriolic waters by iron. The name is derived, it is ſaid, from a vitriolic water in Hungary, called *ziment*.

Cæment-*pots*, in *Aſſaying*, are veſſels made for the *cementation* of metals. See Cementation.

CÆMENTARIUS, in *Entomology*, a ſpecies of Cancer, (*Aſtacus*,) with a ſmooth cylindrical thorax, obtuſe front, and aculeated hand claws. This kind is frequent in the rivers of Chili. Molin. Hiſt. Nat. Chili.

CÆMENTATION. See Cementation.

CAEN, Lat. *Cadomus*, in *Geography*, a city of France, before the revolution, the capital of Lower Normandy, now the capital of the department of Calvados, ſeated in a vale at the conflux of the rivers Orne and Odon, and communicating, at the diſtance of about ſeven miles from the ſea, with the Engliſh channel. Its northern and ſouthern ſuburbs contain 30,900, and its two cantons 36,817 inhabitants; its whole territorial extent comprehends 87½ kiliometres, and 12 communes. The four towers of its caſtle were built by the Engliſh; its town-houſe is a large building with four towers; it royal ſquare, or place royale is ſpacious and regular, having fine houſes on three ſides of it, and in the middle an equeſtrian ſtatue of Louis XIV. in a Roman habit. The abbey of St. Stephen was erected by William the Conqueror, and he was buried in it. The univerſity of Caen was founded by John, duke of Bedford, regent of France, by the authority of his nephew Henry VI. in 1431, and its eſtabliſhment, together with the privileges granted by him, was confirmed in 1439, by two bulls of Pope Eugenius IV. Its academy of literature was inſtituted in 1706. This city has had good trade, which has principally conſiſted in cloths and fine linen.

Caen, as a part of Normandy, was formerly ſubject to the kings of England. In the year 1104 it was ſeized by Philip the Auguſt, king of France, and remained under the dominion of that crown till the year 1346, when it was captured, after a long and deſtructive ſiege, by Edward III. In 1417, it was again taken by the troops of Henry V. and remained in the poſſeſſion of the Engliſh till the year 1448, when it was taken by Charles VII. king of France. N. lat. 49° 11′ 10″. W. long. 0° 21′ 47″. High water at ſpring tides at 9 o'clock.

Caen, is alſo the chief city of Cayenne in South America. See Cayenne.

CÆNE, or Cænopolis, in *Ancient Geography*, a town of Peloponneſus in Laconia, placed by Pauſanias at the diſtance of 40 ſtadia from the promontory of Tænarus, and anciently denominated Tænarum. It had two temples, one dedicated to Ceres, and another to Venus.

Cæne, or Cænopolis, the *Cæne emporium* of antiquity, a town of Egypt in the Panopolitan nome, mentioned both by Herodotus and Ptolemy, and ſuppoſed to be the preſent *Ghenné* or *Kenné*; which ſee.

Cæne, a ſmall iſland in the Mediterranean, between Sicily and Africa. Pliny.

Cæne, or Coenæ, *Senn*, a town of Aſia in Meſopotamia, on the bank of the Tigris, over againſt the mouth of Zabus Minor.

CÆNEUS, in *Entomology*, a ſpecies of Papilio with very entire ſubfuſcous wings; poſterior pair beneath with a red orb conſiſting of nine ſpots. This is a native of South America. Linn. &c.

CÆNI, in *Ancient Geography*, a people of Thrace mentioned by Livy and Steph. Byz. and called *Cænici* by Pliny. They are ſuppoſed to have inhabited that part of Thrace, which is contiguous to the Propontis. Their country was called *Cænica regio*, and Pliny places it in the colony Flaviopolis.

CÆNINA, a town of Italy on the confines of Latium, and the country of the Sabines, whence ſome geographers make it a city of the Sabines, and others refer it to the ancient Latium. Cluverius places it on the banks of the Anio next to Rome; but Holſtenius thinks that it ſtood on the oppoſite bank in the vicinity of the preſent Monticelli. Feſtus ſays, that it derived its name from Cenis its founder; and Dionyſius of Halicarnaſſus informs us, that it was one of the firſt cities which declared againſt Romulus. In the conteſt its king was ſlain, and the Cæninenſes defeated. Their city was raſed, and the inhabitants removed to Rome, where they enjoyed the privileges of the moſt ancient citizens. It afterwards became a Roman colony.

CÆNIS, or Senis, a town and promontory of Italy, in Brutium, upon the ſtraits of Sicily, N. of Rhegium, and oppoſite to Meſſana or Meſſina.

CÆNITARUM *inſula*, an iſland mentioned by Arrian in his Periplus of the Erythrean ſea, and ſuppoſed to be the Kavathra of Ptolemy.

CÆNON, a place of Aſia in Armenia Minor, mentioned by Strabo and Plutarch.

Cænon *Hydreuma*, a place of Egypt, in the route from Coptos to Berenice.

CÆNOPHRURIUM, a place of Thrace in the road from Conſtantinople to Heraclea, according to the Itinerary of Antonine. Here the emperor Aurelian was ſlain. It is placed by M. d'Anville N.W. of Selympria.

CÆNOPOLIS. See Cæne.

CÆNOPTERIS, in *Botany*, (from καινος, new, and πτερις, a fern,) a fern) Berg. Act. Petrop. 1782. p. 248. Schreb. 1634. (Darea, Juſſ. 15). Claſs and order, *Cryptogamia Filices*.

Gen. Ch. Fructifications in lateral, nearly marginal, lines; covered with a membrane opening on the outſide.

Sp. 1. C. *rhizophylla*, Smith ic. ined. 2. 50. "Frond bipinnate, rooting at the tip; pinnules inverſely egg-ſhaped, ſomewhat ſickle-ſhaped, petioled; primordial leaves lobed." *Stipe* round, brown; common peduncle or rachis round, brown, ſmooth, elongated at the tip, leafleſs, bulbiferous, rooting; partial peduncles green, flattened, ſometimes winged; pinnules alternate, on ſhort petioles, inverſely egg-ſhaped, one-nerved; fructifying, ſlightly ſickle-ſhaped, often toothed at the tip, even, the upper ones uſually confluent; all duſky green. *Fructifications* in ſhort, ſolitary lateral lines, beginning at the nerve towards the baſe of the pinnules, and covered with an entire ſcarious brown membrane opening always on the outſide, at length turned back and permanent. When the capſules have emerged from the fructifying chink, numerous forked, brown, gloſſy threads ſtand out, which are the expanded rings of the capſules. Found by Thiery in the iſland of Dominica. 2. C. *japonica*, Thunb. Linnæan Tranſ. v. 2. p. 341. (Trichomanes japonicum, Thunb. Flor. japon.) "Frons ſuper-decompound; pinnules cut in three diviſions, acute." 3. C. *cicutaria*, Smith (Aſplenium cicutarium, Swartz.) See Asplenium 39.

CÆNURGIA, in *Geography*, a town of Thrace, placed by Procopius in the province of Rhodope.

CÆNUS, a river of Gallia Narbonenſis, ſuppoſed to be the *Orc*, which ſee.

CAER, in *Britiſh Antiquity*, a term which, like the Saxon Cheſter, denotes caſtle, and is prefixed to the names of places fortified by the Romans.

CAERDIFF, in *Geography*. See Cardiff.

CÆRE, in *Ancient Geography*. See Agylla.

CÆRESI, a people of Germany, placed by Cæſar (Bell. Gall.) between the Condruſi and Pæmani, and referred by d'Anville to the vicinity of the river Chiers, which runs from Luxemburg into the Meuſe.

CAERFILLY, Caerphillyon, or Caerphilly, a ſmall town of Glamorganſhire, South Wales, formerly by traditionary account much larger than it is now, is only remarkable for the ruins of its once extenſive caſtle, and the hiſtorical events connected with it. The name Caerphûli ſignifies caſtle of haſte, and it is ſaid that great numbers of hands were employed to raiſe this fortreſs with expedition. Its ground plan covered an area of two acres, and its foſs was croſſed by thirteen drawbridges. At preſent the ruins, ſays Mr. Evans, "more reſemble the remains of a city, than a ſingle edifice; and when undilapidated, exceeded the enormous ſite of Windſor caſtle." The citadel, with circular baſtions, a range of apartments round the inner court, the grand hall, ſome towers, &c. are ſtill remaining, and whether viewed as objects of pictureſque beauty, or ſpecimens of ancient caſtellated architecture, they are highly intereſting. Within two moats is the citadel, appearing like a ſeparate caſtle, with a high Gothic arch, the centre ſupported by two circular baſtions. This great gateway, the weſtern entrance of the ruin, is grand and perfect, and leads to the ſtupendous ſtructure of the inner court from the weſt, as the gate with the hexagonal towers does from the eaſt. The inner court is ſurrounded by a range of noble apartments, communicating with a long gallery, to which there is an aſcent from the mint, and affording a ready intercourſe between the guards, who occupied the embattled towers. This corridor remains entire from the extent of about 90 to 100 feet, on the ſouth ſide, except in the breaks of the ſtair-caſes. The great hall, which is ſpacious and complete, exhibits a fine ſpecimen of Gothic grandeur; and the ornamented outline of its four windows and chimney-pieces are hardly to be paralleled, together with ſeveral light pillars in triplets, that go round the room, which is about 70 feet by 30, and 17 feet high. The north window of the chapel is not only perfect, but uncommonly light and elegant. The mint is underneath, near the inclining tower, arched in a curious manner, and furniſhed with two furnaces for melting metal. In the interior court, at the eaſt end, is the *leaning* tower an object of conſiderable curioſity and general admiration. It is of a circular ſhape, about 70 feet high, and inclines full 11 feet out of the perpendicular. About half way down from the ſummit a fiſſure divides it, which was probably made, when it was undermined. A ſimilar inſtance of a leaning tower exiſts at Bridgenorth, others at Corfe caſtle, and the moſt conſiderable we have heard of is that at Piſa in Italy. The immenſe pile of Caerphilly caſtle appears to have been erected at different times, and the ſtyle of building diſplayed in ſome of the exterior works indicates the time of Edward II. Here that ill-fated monarch fixed his dernier reſort, when purſued by his unnatural and brutal queen. With his favourite the younger Spencer, he retreated here from the forces belonging to the queen and barons, who beſieged the caſtle, A. D. 1327, but the monarch, however, afterwards eſcaped. The late Mr. Daines Barrington has offered, in the firſt volume of the Archæologia, ſome reaſons for ſuppoſing that Caerphilly caſtle was built by Edward I. and in his authority many late modern writers have acquieſced. But Mr. Malkin (ubi infra) has ſuggeſted a variety of circumſtances, which invalidate this account; and particularly that of king Edward having no juriſdiction at that time in Glamorgan. From ſome hiſtorical documents, deduced from Welſh authors, it is inferred, that this caſtle was built, or rebuilt and fortified, in 1221, by John de Bruſe, who married the daughter of Lhewelin-ap-Jorwerth, prince of North Wales; and that, after it had been taken and partly ruined, in 1270, at which period it firſt obtained the name of Caerphilly in the Welſh hiſtory, it was rebuilt by Ralph Mortimer, who married Joan of Acres in the time of Edward I. and ſettled this caſtle on him and his heirs; and that, in proceſs of time, it was again greatly augmented and ſtrengthened by Hugh Spencer the younger, whoſe wealth appears to have been fully equal to ſuch an undertaking. Many important public events are connected with the hiſtory of this once formidable fortreſs. The trade of Caerphilly has lately improved in conſequence of the eſtabliſhment of three woollen manufactures; the effect of which is obſervable in traffic on the roads, and population in the town. "Evans's Tour through South Wales," 8vo. 1804; and Malkin's "Scenery, Antiquities, and Biography of South Wales," 4to. 1804.

CÆRIANA, a town of Spain, placed by Ptolemy in Bœtica, in the country of the Turdetani.

CÆRITES, Cæritum *tabulæ*, in *Antiquity*, denote the cenſors' tables, wherein were entered the names of ſuch perſons as, for ſome miſdemeanour, were to loſe their right of ſuffrage in elections at Rome.

The original of the appellation aroſe hence; that during the captivity of Rome under the Gauls, the Cærites, or inhabitants of Cære, a city in Etruria, preſerved their ſacred books, and other matters belonging to the worſhip of the gods; in gratitude for which, the Romans dignified the Cærites with the appellation of Roman citizens, but without admitting them into any part of the adminiſtration. See Agyllæi.

CAERLEON, in *Geography*, a ſmall town of Monmouthſhire, England, is more celebrated for its ancient, than for its modern importance. Under the Anglo-Roman dynaſty, it was Iſca Silurum, the Caer Legionis Secundi of Antoninus, and the ſeat of government in that diviſion of this iſland called Britannia Secunda. During the height of Roman ſplendour and dominion, this place continued a ſcene of pomp and luxury, as may be fairly inferred from the following deſcription, by Gyraldus Cambrenſis, who wrote in the 12th century. “Many remains of its former magnificence are ſtill viſible. Splendid palaces, which once emulated with their gilded roofs the grandeur of Rome, for it was originally built by the Roman princes, and adorned with ſtately edifices; a gigantic tower, numerous baths, ruins of a temple, and a theatre, the walls of which are *partly* ſtanding. Here we ſtill ſee, both within and without the walls, ſubterraneous buildings, aqueducts and vaulted caverns, and ſtoves ſo excellently contrived, as to convey their heat through ſecret and imperceptible pores,” &c. In confirmation of the monk's account, various antiquities diſcovered at different periods bear ample teſtimony. Earthen veſſels of curious workmanſhip, teſſelated pavements, phiala, braſs fibula, Roman bricks inſcribed “Leg. II. Aug.;” an altar to the emperor Aurelius Antoninus; another to Jupiter, under the appellation of Dolichenius, as the patron of iron mines; another, as ſuppoſed, to the goddeſs Aſtræa: and many other votive altars, monuments, ſtatues, inſcriptions, and Roman coins from Cæſar to Valentinian incluſive; with moſt of the intermediate emperors.

In ſeveral places the walls are ſtill viſible, but ſcarcely ſufficient to point out the original extent of the city. While the name of the pariſh, Llangattock juxta Caerleon, ſeems to favour the opinion that the old city was weſtward of the preſent town, perhaps moſt of the buildings on that ſide were extra mœnia, and formed ſuburbs, as appears from the direction of the weſtern wall. Several bagnios and ſudatories have been found, with pillars formed of circular bricks, not unlike thoſe uſed by Palladio in ſome of the public ſtructures at Venice. North of the town is a high mount of earth, called the Keep, ſaid to have had formerly a ſtrong tower on its ſummit; and a variety of ſtones lying at its baſe ſtrengthen the aſſertion. It was probably a Roman edifice. On a riſing ground about half a mile diſtant, is a large ſquare encampment, and ſeven ſmaller ones are in the vicinity.

Caerleon appears, on a ſuperficial view, to occupy a flat poſition; but in reality, that portion of the preſent town, which is incloſed by the Roman walls, is placed on a gentle riſe, connected at one extremity with the lower part of the eminence on which the encampment of the Lodge is ſituated. This riſe ſhelves on the weſt and ſouth ſides towards the Uſk, and on the eaſt towards the Avon Llwyd, and ſeems to have formed a tongue of land, which, before the draining of the meadows, was probably a kind of peninſula. Hence, the fortreſs, from its poſition on a riſe between two rivers, and almoſt ſurrounded with marſhy ground, was a place of conſiderable ſtrength, and well adapted to become the primary ſtation of the Romans in Britannia Secunda. The æra in which this Roman fortreſs was built cannot be preciſely aſcertained; but Horſley ſuppoſes, that the Romans firſt ſettled here in the reign of Antoninus Pius. It is mentioned in Antonine's Itinerary; and the numerous coins of the early emperors, which have been diſcovered here, ſeem to confirm this opinion. The walls, however, appear to have been conſtructed under the lower empire.

According to Richard of Cirenceſter, Caerleon was a Roman colony, and the primary ſtation in the country of the Silures. In a field cloſe to the banks of the Uſk, and near the ſouth-weſt ſide of the wall, is an oval concavity, meaſuring 74 yards by 64, and 6 in depth. The natives call it “Arthur's round table;” but it is, without doubt, the ſite of a Roman amphitheatre. Within the memory of many perſons now living, ſtone ſeats were diſcovered on opening the ſides of the concavity; and in 1706 a figure of Diana, with her treſſes and creſcent, moulded in alabaſter, was found in this place.

When the Britons had ſubmitted to the Roman power, Caerleon, under the auſpices of Antoninus, became the ſeat of learning and devotion. Three Chriſtian churches were quickly erected; one accompanied by an order of nuns, another by a houſe of regular Ciſtercian canons, and a third was honoured with the metropolitan ſee of Wales; and, according to the annals of the church, Dubricius, the great opponent of the Pelagian hereſy, was the firſt archbiſhop. The remains of the monaſtery may be traced in an old houſe, and the quadrangle round which the different buildings were arranged is ſtill viſible. This city was the birth-place of the great Amphibalus, tutor to the martyr St. Alban, and the burial-place of St. Julius and St. Aaron, who preached the goſpel here, and ſuffered martyrdom under the perſecuting reign of the ſanguinary Diocleſian. After that period, Caerleon increaſed in learning, piety, and conſequence. When the Saxons invaded this country, the univerſity was in ſuch a flouriſhing condition, as to contain, among numerous other ſtudents, two hundred philoſophers well ſkilled in geography and aſtronomy. (Vid. A. Elſebenſis.) Near the river are the ruins of a caſtle, probably erected about the time of the Norman invaſion, on the ſite of a Britiſh fortreſs. We do not, however, hear of it till 1171, when Henry took the town, diſpoſſeſſing Jorwerth-ap-Owen, lord of Gwent. In 1173, after a noble ſtand, it was retaken by Owen, and given up to the Welſh in exchange for the priſoners. After ſeveral ſieges, it was retained by Llewelyn-ap-Jorwerth, and his deſcendants, till the time of Edward I. Vide Powel's Hiſtory of Wales.

The preſent town conſiſts of two or three ſmall ſtreets, and many of the houſes are in a ſtate of dilapidation. The moſt decent building is a charity-ſchool, for maintaining and educating 30 boys and 20 girls, till they attain the age of 14, when they are apprenticed with a bounty of ſeven pounds to the former, and four to the latter. They are clothed in a dreſs of blue cloth, with a badge of white, containing the initials C. W. alluding to the founder, who, as appears from an inſcription on the building, was Charles Williams, eſq. a native of the town. The ſpirit of the place ſeems in uniſon with its appearance; being chiefly inhabited by a poor indolent ſet of people; alike unaffected by the greatneſs of the paſt, as inattentive to the advantages of their preſent condition. The town conſiſts of 148 houſes, contains about 660 inhabitants; has a weekly market on Tueſday; and is ſituated 146 miles W. from London. Evans's Tour through South Wales, 8vo. 1804. Coxe's Hiſtorical Tour in Monmouthſhire, 4to. 1801.

CAERMARTHEN is the county town of Caermarthenſhire, South Wales. It is large, populous, and tolerably well built; the ſtreets are ſpacious, but ſome of them ſteep and irregular, and many of the houſes good; they are generally whitened, and the chimnies are conſtructed of red brick, which preſent an unpleaſant glare to the eye. Among the public buildings are a handſome church at the end of Prior-ſtreet, and a new elegant county-hall built of free-ſtone, with colonnades of the Ionic order; the upper part of which is for the tranſaction of public buſineſs, and the under is uſed as a covered market. Situated upon a ſmall elevation, on a fine navigable river, in the midſt of a fruitful vale, and having no town of note in its vicinity; its markets are large and well ſupplied; proviſions in general are cheap, and fiſh exceedingly reaſonable. A conſiderable iron foundery and tin-plate manufactory furniſh employment to a number of hands. The ſmelting houſes for lead ore, dug in the northern part of the county, belonging to lord Cawdor, are now ſhut up. Here are a ſmall port and quay for coaſting veſſels, principally to Briſtol and London. The tide riſes at the bridge from eight to twelve feet; but, owing to the ſhallows in the bed of the river below, veſſels of much burthen find a difficulty in coming up to the quay. Since the decline of the trade at Kidwelly, that of Caermarthen has increaſed; and with ſpirit and property much more might be done. Here is a rope-walk; and a few veſſels are built for ſale. Adjoining Lammas-ſtreet are the walls of a priory of Fratres Griſei: this was a cell in the cuſtody of the abbey of St. Auguſtine at Briſtol. In Priory-ſtreet the ſhell of another religious houſe is ſtill ſtanding, which was appropriated to Black Friars, or canons of St. Auguſtine, and founded before the year 1148. The entrance into the court is by a bold gateway, over which are the arms of the founder. The principal apartments are ſtill diſtinguiſhable, and the tracery of ſome of the windows almoſt entire. Gyraldus mentions it as being, in his time, ſurrounded with brick walls; ſome remains of which, towards the river, are ſtill extant. This town is famous for having given birth to Merlin Ambroſe, the reputed magician, of whom many fabulous ſtories have been related. Selden conſiders Merlin or Merdhin (whence Caerfyrddin) as having derived his name from the town; but the general opinion is, that Caer-Merdin, or Merlin's town, was ſo called from Merlin's being found there. Not far from the town is a hill, called Merlin's Hill, near the brow of which is a rock, known by the name of Merlin's Chair, in which, it is ſaid, that famous prophet uſed to ſit, when he uttered his prophecies. Caermarthen lays claim to Roman origin. It was the Maridunum of Antoninus, and long the ſeat of the South-Wallian princes, where they held their great national councils, or occaſional parliaments. Nor is it leſs conſpicuous on the ſubſequent page of hiſtory. It was eſteemed of ſo much importance as to become an enviable object with every hoſtile party, and repeatedly ſacked, pillaged, and burnt, by both friends and enemies. By whom it was fortified, and its caſtle built, there are no authentic documents to ſhow; nor do we hear much of it, till the æra of difficulty and conflict to the Welſh, occaſioned by the unjuſtifiable invaſion and unprecedented cruelty of the Anglo-Normans. On the acceſſion of Henry I. to the throne, Wales became a new theatre for the diſplay of iniquity; and the oppreſſive meaſures and alienations of property, which before were chiefly confined to the borders, were extended to the interior: in conſequence of which the royal reſidence was removed to Dinevor, and Caermarthen was rendered a ſtrong fortified poſt. In 1116 we find it in the hands of the Engliſh, held for the king by Owen ap Caradoc. But Gryffydd ap Rhys, who well knew the importance of this place, ſent ſpies to ſurvey the works and aſcertain their ſtrength: having received a favourable account, he ſuddenly marched at night, ruſhed on the town, and by a coup de main took poſſeſſion. The governor was killed, the garriſon fled; and Gryffydd, having burnt the place, and diſmantled the caſtle, returned with his ſpoils to his reſidence at Strata Tywy. It was again laid in aſhes, in 1137, by Owen Gwynedd; rebuilt and fortified by Gilbert earl of Clare, about the year 1143; taken by Cadell ſon of Gryffydd ap Rhys; and again in poſſeſſion of the Engliſh under William Tuberville, who, when it was beſieged by Rhys, in 1158, deſtroyed the bridge, at that time of wood, for its better ſecurity and defence. Though Rhys was unſucceſsful at this time, he took and deſpoiled it in 1195, after quelling the unnatural rebellion of his ſons. In the reign of John, 1215, it was taken; and the caſtle was raſed in 1222 by Llewelny, who, taking advantage of the abſence of the earl of Pembroke, the governor, took this fortreſs and Cardigan, putting the garriſons to the ſword. We find it ſoon afterwards in the poſſeſſion of the Engliſh, when the ſame earl of Pembroke, having confederated with the Welſh, blockaded it ineffectually for three months. The remains of this important fortreſs are ſtill viſible on a rocky eminence: additions have been lately made, and it is now uſed as the county gaol. When this territory was erected into a principality by the crown of England, the chancery and exchequer courts were held here. Caermarthen was created a borough town, 38 Henry VIII. with the privilege of returning one member to parliament. It contains 945 houſes, and 5548 inhabitants, has two weekly markets, Wedneſday and Saturday; conſiderable trade but no internal manufacture; and is ſituated 226 miles W. from London. Evans's Tour through South Wales, 8vo. 1804.

CAERMARTHENSHIRE is one of the ſouthern counties of Wales, bounded on the north by Cardiganſhire, on the eaſt by Brecknockſhire, on the weſt by Pembrokeſhire, and on the ſouth by Glamorganſhire and part of the ſea. Its extent from eaſt to weſt is above forty-five miles, and only about twenty in the longeſt diameter from north to ſouth. The general ſurface of this tract of country is hilly, which in the northern and eaſtern parts riſe into mountains. As in moſt hilly territories, the vallies are chiefly narrow, and well watered with mountain ſtreams, which in ſtormy weather ruſh down in torrents. Among the vales that of the Tovy or Tawy is the principal: this croſſes the whole of the county, and in ſome places is above two miles in breadth, and abounds with beauties.

The principal rivers are the Tovy, the Taw, the Cothy, the Dulas, and Gwilly: the former has its ſource among the Cardiganſhire mountains, and after its entrance into this county, at the northern boundary, is reinforced by a continual ſucceſſion of thoſe numerous ſtreams which give beauty and fertility to the landſcape. Before the Tovy reaches Caermarthen it receives the Cothy and Gwilly; the Cowen brings with it the Towa and Carkenny; and the Taw receives the Morlas and Cair.

The climate and ſoil of this county are much celebrated, though the lands are not found favourable to wheat. Barley and oats are the moſt profitable crops, and great quantities of the latter are annually exported to Briſtol. Black cattle and horſes are bread in abundance on the hills, and are the chief article of traffic in the neighbouring fairs. Wood though ſtill plentiful, has ſuffered great defalcation of late years. The county abounds with limeſtone, and coal is obtained in many parts of it. Iron-works, tin-works, and lead mines, alſo abound, which, combining with the local advantages, and with a ſupply of butter, ſtone-coal, bark, and oak timber, render the export trade very conſiderable.

Caermarthenſhire is divided into ſix hundreds, and includes ſix market-towns, and eighty-ſeven pariſhes, which are within the dioceſe of St. David's and province of Canterbury. It returns two members to the imperial parliament, one for the county, and one for the principal town. Some veſtiges of Roman roads, and other monuments of remote antiquity, are remaining viſible in this county. Near Whitland is a circle of upright ſtones; and between the rivers Cowen and Towa is a remarkable barrow, which incloſed a kiſtvaen. At Whitland is an encampment ſuppoſed to be Roman from the Roman coins that have been found within its vallum. The ruins of ſeveral caſtles are ſtill ſtanding in different parts of the county. Malkin's "Scenery, Antiquities, and Biography of South Wales," 4to. 1804. Evans's "Tour through South Wales," 8vo. 1804. Barber's "Tour throughout South Wales," 8vo. 1803.

CAERNARVON, the principal town of Caernarvonſhire, is juſtly the boaſt of North Wales, for its ſituation, buildings, harbour, &c.; but above all, for the grandeur of its once magnificent caſtle. It is ſituated on the eaſtern bank of the river Menai, the ſtrait that divides the iſle of Angleſea from the other parts of Wales. This was the ancient *Segontium*, mentioned by Antoninus; it was a Roman ſtation in the time of Conſtantine; and Matthew Paris ſays, the body of Conſtantinus, the father of that emperor, was found buried here, A.D. 1283. The ſite of the old city is about a mile diſtant, by the road to which from Pwllheli it is interſected. The remains of a Roman road are ſtill viſible from this place to Dinorwig. It lies on the eaſtern banks of the Seiont. Some remains of the walls are ſtill to be ſeen, the cement of which appears as hard as the ſtone itſelf. A ſingle ſtone remains here, with theſe letters S.V.C. probably for Segontium Urbs Conſtantini; Helen, or her huſband Conſtantine, having built it. It was defended by a fort, erected on the ſteep weſtern bank of the Seiont, where it forms a curve, about four hundred yards from the preſent town. The walls are about twelve feet high, and about eighty yards ſquare, with circular parallel holes running the whole length. Where the facings are dilapidated, the peculiarity of Roman maſonry is eaſily diſcoverable. This town, after the departure of the Romans from the iſland, was occupied by the Britons, and by them denominated Caer-ar-fon, i. e. a ſtrong hold oppoſite Mona, which with the inſertion of *n* for harmony, made Caernarfon. Gyraldus mentions it as a conſiderable place in 1138; and a charter, dated 1221, iſſued by Llewelyn the Great, proves that it did not receive this name from king Edward. At a very early period it was the ſeat of the Britiſh princes. Roderic reſided here in 750; and by a poſterior Roderic the royal reſidence was removed to Aberfraw in Angleſea. Out of the ruins of the ancient town aroſe the preſent, which by a charter of king Edward I. was made a free borough, governed by a mayor, who is pro tempore deputy-governor of the caſtle, one alderman, and two bailiffs; there are alſo a town-clerk and two ſerjeants at mace. The town ſends one member to parliament, who is returned by the joint ſuffrage of Conway, Pwllheli, Nefyn, and Crickaeth; and the right of voting extends to every perſon reſident in theſe places. An extraordinary privilege was granted to Caernarvon, that no burgeſs could be convicted of any crime, committed between the Conwy and the Dovy, but by a jury of his townſmen. The town was originally contained within its preſent walls, but the ſuburbs are become of greater extent than the town: the ſtreets are at right angles correſponding with the four gates; the houſes are well built, and the ſtreets clean, but, as in all other ancient towns, narrow and confined. It is become a place of faſhionable reſort, during the ſummer ſeaſon; the elegant hot and cold baths, erected by the earl of Uxbridge, having added greatly to its celebrity. On the outſide of the walls is a broad and pleaſant terrace walk along the ſide of the Menai, extending from the quay to the north end of the walls, which is a faſhionable promenade in fine evenings. Caernarvon is in the pariſh of Llan-Beblic, and the church is ſituated about half a mile from the town. It contains nothing remarkable, except a marble monument, with two recumbent figures of ſir William and lady Griffith of Penrhyn, who died in the year 1587. The ſervice is always performed here in the Welſh language. There is an Engliſh ſervice every Sunday morning and afternoon, in the chapel of eaſe to this church, ſituated on the north-weſt corner of the town: the former is generally very well attended.

The entrance to the port of Caernarvon is rather dangerous, from the extenſive ſand-banks near; but the harbour is capacious, and veſſels of ſix or ſeven hundred tons ride in ſecurity; and the quay is peculiarly convenient, as large veſſels can come cloſe to it, and deliver and take in their cargoes. The trade has of late years been increaſing, though at preſent it conſiſts more of exports than imports. Slates, &c. are ſent to Liverpool, Briſtol, and London; copper ore from Llanberis and Paris Mountain to Swanſea; flannels, webs, ſtockings, and an ochre found in Angleſea, to America and the Weſt Indies. The imports conſiſt chiefly of Iriſh cloth, fine wool, hides, tallow, and grocery goods, for the uſe of the interior. There is a weekly market on Saturday. The county aſſizes are occaſionally held here; and the room over the eaſtern gateway, formerly uſed as a cuſtom-houſe, is converted into the ſeſſions-houſe, where all the county buſineſs is tranſacted. This was done, as an inſcription in front informs us, by the munificence of ſir William Wynne, and his nephew Thomas Wynne, eſq. A.D. 1767. A new cuſtom-houſe is erected within the walls on the Menai, much more convenient for the commerce. The port is ſubject in its cuſtoms to the comptroller of Beaumaris. Caernarvon is diſtant from London 244 miles N.W.

CAERNARVON is alſo a townſhip of America, in the county of Lancaſter and ſtate of Pennſylvania; containing 942 inhabitants.

CAERNARVON *Caſtle* is the moſt magnificent fortreſs in North Wales. It is well ſituated for natural ſtrength; one ſide bounded by the Menai, another by the æſtuary of Seiont, a third by a creek of the Menai, and the fourth iſolated by art. The ſite was admirably calculated for a ſtrong poſt, and could not fail to ſtrike a prince of military talents, like Edward, as a proper place to erect a curb for his newly conquered, and conſequently diſſatisfied, ſubjects. As the conqueror of the country, there is great reaſon for ſuppoſing that monarch to be the founder of the preſent edifice, (perhaps on the ruins of one more ancient,) to check the ſpirit of inſurrection that might ariſe in Snowdonia, as he did on the Denbighſhire ſide by the caſtles of Conway and Rhuddlan. The obſervation of Mr. Barrington ſeems well founded, that the plans of the Welſh caſtles, erected by Edward I. were borrowed from the Aſiatic fortreſſes which that prince had ſeen in the Holy Land, becauſe they appear preciſely ſimilar to many copied and inſerted in the valuable extracts of Le Brun. After the conqueſt was nearly completed, in 1282, the caſtle was begun; and in a little more than a year this immenſe building was finiſhed. For ſtill further to ſubdue the haughty people, already mortified by a foreign yoke, he impoſed on them the hateful taſk of forging chains for their country, and putting the laſt fatal hand to its independence. The peaſantry were compelled to perform the required labour, and their chieftains to defray the expence incurred. It is built of a mixture of lime and grit-ſtone: ſome of the materials were furniſhed by the ruins of the old town, and ſome were brought from Vaenol. It forms a bold and ſtriking object, and the ſhell is nearly entire. The entrance into the caſtle is grand, between two maſſy towers; in front of which, over the gateway, is placed a ſtatue of the royal founder, with a dagger in his hand, in a menacing poſture. This was defended by four portculliſes. The form of the caſtle, incloſing an area of about three acres, is oblong: the towers are elegant, ſome pentagonal, ſome hexagonal, and others octagonal; two of theſe are pre-eminent: and of theſe, the eagle tower, ſo called from a figure of that bird placed at the top, is peculiarly beautiful, three ſmall angular turrets iſſuing from it. A magnificent apartment is ſhewn in this tower, where, by the well known artifice of Edward I. his queen Eleanor was delivered of her ſon Edward, the firſt prince of Wales, April 25, 1284. The walls of the eagle tower are ten feet thick, and thoſe of the fortreſs in general eight. A gallery runs all round, with frequent openings for the diſcharge of arrows on the beſiegers. A ſhort time after the erection of the caſtle, the ſtrength and importance of it were to be tried. A general inſurrection was excited in different parts of Wales, in 1294, on occaſion of a ſubſidy levied on the new ſubjects. Madoc, an illegitimate ſon of the unfortunate Llewellyn, ſtyling himſelf prince, put himſelf at the head of the inſurgents of North Wales, and proceeded to Caernarvon, which was crowded with people attending an annual fair. The unarmed multitude were barbarouſly ſlaughtered, the town reduced to aſhes, and the caſtle taken. In 1404 this fortreſs was blockaded by Owen Glyndwr's adherents, but was ſo bravely defended for the king, that the beſiegers, finding their efforts fruitleſs, thought proper to retire. In 1644 the town was taken by captain Swanley, a parliamentarian, who pillaged it of the ſtores, arms, and ammunition, making four hundred priſoners: the royaliſts afterwards diſpoſſeſſed him. While lord Byron was governor, it was beſieged by general Mytton in 1646, and ſurrendered on an honourable capitulation. In 1648, general Mytton and colonel Maſon were blockaded by ſir John Owen, who, hearing that colonels Carter and Twiſleton were advancing to relieve the town, raiſed the ſiege, and marched to oppoſe them. The parties met at Llandegai; ſir John was defeated and made priſoner, and North Wales ſoon after ſubmitted to the parliament. This caſtle, like its rival in ſtrength and grandeur, Conway, is going faſt to decay; and the dilapidating hand of time promiſes ſoon to deprive the country of one of its principal architectural ornaments. Evans's "Tour through North Wales," 8vo. 1802. Bingley's "North Wales," 2 vols. 8vo. 1804.

CAERNARVONSHIRE, is the name of one of the counties of North Wales. It is the moſt mountainous diſtrict in the whole principality, and aſſumes a truly rugged and alpine appearance. The moſt central part of it is occupied by that vaſt eminence, named Snowdon, with ſeveral other ſubordinate hills. This county is very irregularly ſhaped, and is bounded by the ſea on the weſt and ſouth, the ſtraits of the Menai, which ſeparate it from Angleſea, to the north, and the counties of Merioneth and Denbigh to the eaſt. This area of country meaſures about forty miles from north to ſouth, and twenty from eaſt to weſt. It is divided into ſeven hundreds, which are again ſubdivided into ſeventy-one pariſhes. The principal places in the county are the city of Bangor, the town of Caernarvon, and the town of Conway. According to the population reports, publiſhed by the houſe of commons, the whole diſtrict contains 8433 houſes, and 41521 inhabitants, of whom moſt are employed in agriculture and mining.

All the mountains in this county, as well as ſome of the low grounds on the weſtern ſide, are commons; the former are chiefly depaſtured by ſheep, and the latter by black cattle. It is a cuſtom among the farmers to meet annually, and determine what number of ſheep each ſhall ſend to the mountains; yet in ſpite of any argument, the paſturage is generally overſtocked. It is common with ſome perſons to ſell this privilege at 4d. per head for the ſeaſon, which is commonly from May, when the ſheep are driven up, until Michaelmas, when they are brought down. In moſt deſcriptions of this county, it is ſtated, that the families go up and wholly live on the mountains in the ſummer ſeaſon, to attend their flocks, to make cheeſe, &c. but this is denied by Mr. Kay in his "General View of the Agriculture of the County," who ſays, that no ſuch cuſtom prevails. The wethers only are ſent up, and the ewes are always kept in the low grounds with their lambs. When the latter are weaned, the ewes are milked for about two months; and the produce of theſe is mixed with the cows' milk for making of cheeſe.

The exportation of ſlates is the principal trade from this county. Theſe are ſhipped in large quantities from Caernarvon; and it is calculated by Mr. Kay, that above 35,000l. worth are annually ſent from this part of the country. Wool is alſo an object of conſiderable importance to the farmers and peaſantry, many of whom are employed in manufacturig it into cloths, flannels, &c.

Of the rivers in Caernarvonſhire, the Conway is the principal. This bounds the eaſtern ſide of the county, and is navigable for about 12 miles from the ſea up into the interior of the country. Increaſed by various mountain torrents, it ſometimes ſwells itſelf into a vaſt expanſe, and in the early part of its courſe forms ſome grand caſcades. Many of the rivers of this county either proceed from, or form in their courſe, lakes of various ſizes. Theſe are chiefly in the declivities of the mountains, and moſt of them are abundantly ſtocked with fiſh, among which, the char, and the gwyniad, are very prevalent.

The moſt conſiderable mountains are Snowdon and Penmaen-Mawr. The former is eſtimated to meaſure 3456, or, according to other ſtatements, 3568 and 3600, feet above the level of the ſea at Caernarvon Quay. It is connected with a chain of other hills ranging through the county in a direction from N.E. to N.W., extending from Aberconway to the ſea, at Aberdaron. The rocks compoſing the higher part of this chain, are principally porphyry, granite, and granitel of Kirwan; the ſecondary rocks are chiefly hornblende, ſchiller-ſpar, toadſtone, ſchiſtus-mica, ſchiſtus-clay, mixtures of quartz, feld-ſpar, and mica, with argillaceous ſchiſtus in all its varieties. On the weſtern ſide are a number of baſaltic columns on a bed of hornſtone, or chertz; and large coarſe cryſtals, cubic pyrites, and various mineral bodies are found in the fiſſures. In the ſchiſtoſe rocks are ſeveral ſlate quarries; and great quantities of ſtones are cut, and annually ſent hence to London, Dublin, &c. Many rare and curious plants are found on theſe mountains, and on the borders of the lakes. The whole of the county was formerly known by the name of Snowdon, and a great part of it is ſtill diſtinguiſhed by the appellation of Snowdonia. The mountains between Conway and Caernarvon ſeem emboſomed in one another, and from the Angleſea ſhore are ſeen to riſe, range after range, in three gradations. The lower valleys and baſes are generally very fertile and temperate, and conſequently are choſen as the ſcenes of habitation and cultivation. The ſecond range affords ſome paſturage and fuel, ſuch as long graſs, peat, and furze. The higheſt ridge is nearly diveſted of vegetation, and partakes of the temperature of the frigid zone. Snow remains here nearly three quarters of the year; and is often found at the latter end of June.

The ſcenery of Caernarvonſhire is peculiarly grand, romantic, and pictureſque. Its narrow glens, expanded lakes, roaring caſcades, and "tempeſt-torn rocks," conſpire to render it eminently attractive to the painter, whilſt its mineralogical and botanical productions are equally enticing to the mineralogiſt and to the botaniſt. For further particulars relating to the hiſtory and antiquities of particular places in

this

his county, ſee under the heads Bangor, Conway, Caernarvon, &c. This county returns two members to parliament. It is in the dioceſe of Bangor, and province of Canterbury. Kay's "View of the Agriculture of North Wales." A Sketch of the Hiſtory of Caernervonſhire. Evans's Tour through North Wales. Aikin's Journal of a Tour through North Wales.

CAERSWS, at preſent a ſmall hamlet, ſituated on the Severn, above New Town, in Montgomeryſhire, North Wales, but formerly a town of conſiderable antiquity, and probably a Roman ſtation, as is inferred from the fine hewn ſtones for building, and ſeveral bricks common in Roman cities or places poſſeſſed by the Romans when in Britain. It had alſo a caſtle and a church, and the form of three camps is ſtill diſcernible in its vicinity. The Roman road, or cauſeway, called Sarn-Sws, runs here towards Meifod, and may be traced to the banks of the Tyrnwy, near Llyſin.

CÆRULATA, in *Entomology*, a ſpecies of Phalæna, (*Geometra*) with obſcurely green wings, banded with brown, and two cæruleous bands. Fabricius.

CÆRULEA, a ſpecies of Chrysomela, of a blue colour with violaceous thorax. Geoffroy. Inhabits France.

Cærulea, a ſpecies of Necydalis, cæruleous, with the hinder thighs clavated and arcuated. Fabricius.

Cærulea, is a ſpecies of Cicindela, of a ſhining blue colour, with the mouth white. Inhabits the great ſandy deſerts of Siberia. Pallas.

Cærulea, a ſpecies of Pimelia, (*Sepidium*,) cæruleſcent, with a roundiſh thorax, and ſtriated elytræ. Fabricius.

Cærulea, in *Ichthyology*, a ſpecies of Coryphæna, wholly cæruleous. Bloch. Found in the American ocean, clothed with large ſcales, compreſſed, and above convex.

Cærulea, in *Ornithology*, a ſpecies of Ardea, called by Latham the blue heron, and blue bittern of Cateſby. The back of the head is creſted; colour of the body blue. Briſſon calls it cancrophagus cæruleus. It is the black and blue gaulding of Ray and Sloane.

There are ſeveral diſtinct varieties of this bird, one of which is blue, with the head and collar of a rufous brown colour; and another has the blue of the body tinged with green, with the chin and throat white. Inhabits America.

Cærulea, the ſpecies of Alcedo called by Latham the white-collared king's-fiſher; iſpida indica torquata of Briſſon. This bird is of a blue colour, beneath rufous, with the eye-brows and collar white. Length ſeven inches. Inhabits India.

Cærulea, a ſpecies of Procellaria, bluiſh cinereous, beneath white, with the beak and legs cinereous; the blue petrel of Latham.

Cærulea, a beautiful bird of the Certhia, or creeper, genus from Cayenne. The prevailing colour of the plumage is blue, with the band acroſs the eyes, chin, wings, and tail, black. Gmelin, &c.

Cærulea, a ſpecies of Columba, cæruleous; the beak, legs, and covers of the wings, red; the blue pigeon of Latham, and the tlacapoilotl of Ray. Found in New Spain.

Cærulea, the ſpecies of Muscicapa, called by Latham the azure fly-catcher, cæruleous; with a black ſpot on the occiput and breaſt; the abdomen and vent bluiſh-white, and the feathers of the wings and tail bluiſh-black. Found in the Philippine Iſles.

Cærulea, in *Zoology*, a ſpecies of Nereis, ſmooth and cæruleſcent. Fabricius.

CÆRULEOCEPHALA, in *Entomology*, a ſpecies of Cantharis, (*Malachius*,) deſcribed by Thunberg. The thorax is red, emarginate; wing-caſes fuſcous; anterior part of the head red; poſterior blue-black. Inhabits Europe.

Cæruleocephala, a ſpecies of Bombyx, common in various parts of Europe, and in England known by the trivial name of the figure-of-eight moth. The wings are greyiſh, varied with brown, with a large double irregular whitiſh ſpot. Linn. &c. The larva feeds on apple and on other fruit trees.

Cæruleocephala, in *Ornithology*, a ſpecies of Alcedo, or king's-fiſher, found in the iſland of Madagaſcar. The prevailing colour is blue above, beneath rufous; throat white; quill-feathers blackiſh.

The length of this bird is four inches, and it has the bill and legs of a red colour. Buffon calls it martin-pêcheur à tete bleue, and petit martin-pêcheur du Senegal. It is the blue-headed king's-fiſher of Latham.

CÆRULEOCEPHALUS, in *Entomology*, a ſpecies of Curculio, violet coloured, with the thorax and elytræ teſtaceous. Found in Saxony.

Cæruleocephalus, in *Ornithology*, a ſpecies of Psittacus, cæruleous, with the belly, rump, and tail green, crown yellow, and feathers of the wings and tail red; the red and blue parrot of Willughby and Latham. Found in Guiana.

CÆRULESCENS, in *Entomology*, a ſpecies of Cancer, abundant in the ſeas between the tropics. The colour is bluiſh; thorax ſmooth; beak advanced, ſubulate, and furniſhed with two teeth. Fabricius. A crab of a ſmall ſize.—Alſo, a ſpecies of Cryptocephalus (*Ciſtela*), black, with the ſtriated elytræ cæruleſcent. Found in Barbary.

Cærulescens, a ſpecies of Cerambyx (*Saperda*) that inhabits Germany. The thorax is unarmed, cylindrical, white-blue; three lines on the thorax and ſcutel pale. Scopoli, Schranck, &c.

Cærulescens, a ſpecies of Chrysomela (*Altica*) of a greeniſh blue colour, and very gloſſy; thorax ſmooth; antennæ and legs rufous; poſterior thighs black Degeer.

Cærulescens, a ſpecies of Carabus, of a blackiſh blue colour, with the baſe of the antennæ red. Fabricius. Inhabits Europe.

Cærulescens, a ſpecies of Necydalis, with a roundiſh thorax, and cæruleous ſub-opake body. Fabr.

Cærulescens, in *Ornithology*, a ſpecies of Anas, called by Latham and other Engliſh writers the Blue-winged-gooſe. This kind inhabits North America; the colour is fuſcous, beneath white; wing-coverts and poſterior part of the back bluiſh. Briſſon calls it anſer ſylveſtris freti Hudſonis; Buffon, l'oie des Eſquimaux. Obſ. The bill and legs are red; crown yellowiſh, reſt of the head, with the collar, white; ſhoulders and tail waved with white and grey.

Cærulescens, a ſpecies of Rallus, light-red, beneath bluiſh, the beak and legs red, the vent white, with black tranſverſe ſtriæ on the abdomen; the blue-necked rail of Latham. Found at the Cape of Good Hope.

Cærulescens, in *Zoology*, a ſpecies of Coluber, found in South America and India, ſmooth, cæruleſcent, and an acuminated lead-coloured head.

CÆRULEUS, in *Entomology*, a ſpecies of Cimex, deſcribed by Linnæus in his Fauna Suecica as being entirely of a blue colour and without ſpots.

Cæruleus, an European ſpecies of Carabus, deſcribed by Müller. The colour is black, with cyaneous wing-caſes; antennæ, feelers, and legs fulvous.

Cæruleus, a ſpecies of Rhinomacer, cæruleſcent, with the baſe of the antennæ and legs yellow.

Cæruleus, a ſpecies of Scarabæus, oblong and wholly cyaneous. Found in Siberia.

Cæruleus, a ſpecies of Cucajus, black, with a ſulcated thorax, ſtriated cæruleous elytræ, and red abdomen. Fabr. Found in Germany.—Alſo, a ſpecies of Cryptocephalus, azure, with brown antennæ. Found in the equinoctial part of Africa.

Cæruleus, in *Ornithology*, a ſpecies of Cuculus, with a roundiſh tail and blue body. The beak, legs, and claws, are black; the remiges and tail are green and violet. Found in Madagaſcar. This is the blue cuckow of Latham, and taitſon of Buffon.

Cæruleus, the name of a ſmall ſpecies of Parus, called in England the blue-titmouſe. The quill-feathers of this bird are bluiſh; primaries whitiſh at the outer margin; front white; crown blue. Linn. Fn. Suec.

This kind inhabits Europe. Its length is about four inches, frequents gardens, and does conſiderable damage by bruiſing the young buds in queſt of inſects, on which it feeds.

Cæruleus, a ſpecies of Oriolus, black or cinereous, with the head, wings, and tail cæruleous. This is the Xanthornus cæruleus of Briſſon, the ſmall blue jay of Ray, and blue oriole of Latham. The beak is red.

Cæruleus, a ſpecies of Ramphastos, cæruleous with a mixture of cinereous; the blue toucan of Latham; found in New Spain.

Cæruleus, in *Zoology*, a ſpecies of Coluber, found in America, cæruleſcent, with the ſcales white on one ſide, and beneath white.

Cæruleus is alſo a name given by Solinus to the "great Indian worm," deſcribed by Pliny and others as inhabiting the Ganges. It is conceived with much probability that all the accounts we have of this monſtrous animal are only falſe deſcriptions of the crocodile.

CAERWENT, in *Geography*, a village of Monmouthſhire, England, about 4 miles from Chepſtow, in the road to Newport, was a place of great importance in the Roman times and is diſtinguiſhed in the Itinerary of Antoninus by the name of Venta Silurum. This ſtation was found, like many Roman military works, with a fortification, aſſuming in ground plan the parallelogramic ſhape, with the corners a little rounded. Such figures were called terriata caſtra. Each corner nearly correſponded with the four cardinal points. At the ſouth-weſt ſide are three pentagonal baſtions; from which circumſtance ſome writers have inferred that the town was founded under the lower empire, as flanking projections were not in uſe before that period. Other authors refer the building of the walls to the Saxons, but from the mode of conſtructing them, the ſize and quality of the bricks, and other evidences, this ſeems very improbable. The circuit of the rampart, nearly a mile in extent, may ſtill be traced, and in moſt places is ſurrounded by a deep foſs. The preſent walls are about nine feet in thickneſs at the top, and twelve feet at the baſe. The incloſed area is laid out in fields and orchards; and a few cottages, with the church, parſonage, &c. occupy the ſite of Roman manſions and Roman temples. Foundations of theſe, projecting above the level, and concealed under green hillocks, riſe in many places, and columns, teſſelated pavements, and coins, are continually diſcovered in ploughing and digging. A curious teſſelated pavement was diſcovered about 40 years ago, and preſerved under a ſhed conſtructed for that purpoſe. It is ſeven yards long and ſix broad, within a border of variegated ſtones; it contains three rows of three circular and ſpiral figures, not unlike thoſe in many of our Turkey carpets, but formed of teſſelæ of various colours, neatly put together. Some have ſuppoſed, that the exploits of Arthur were performed at this place; and that when this was totally deſtroyed, they were transferred through ignorance or flattery to the other Caerwent or Wincheſter, at a time when it was one of the moſt important cities of the iſland. Venta Silurum, afterwards Caer Gwent, is ſuppoſed to have poſſeſſed ſufficient conſequence to give name to the county of Monmouth, and thoſe parts of Herefordſhire and Glouceſterſhire, which long retained the appellation of Gwent-Land. In a MS. of Llandaff, Caer-Gwent is mentioned as a place dedicated to learning, and far famed for its academy, which a diſciple of St. Germanus governed with great commendation. Evans's Tour through South Wales, 8vo. 1804. Barber's Tour throughout South Wales, 8vo. 1803.

Caerwent, or Caer-Gwent, q. d. *white city*, is alſo a name given by the firſt Celtic ſettlers in South Britain to the preſent city of Wincheſter, on account of the chalky cliffs that encompaſſed it. Under this appellation it has been recognized by the moſt ancient writers, domeſtic and foreign, who have recorded the early ſtate of Britain. It was then no more than a collection of long cabins, built of mud, covered with reed and ſheltered by the large ſpreading bows of the contiguous foreſt, and ſurrounded with a rampart and ditch for protection from the aſſault of neighbouring tribes. The adjoining fields were devoted to the fattening of flocks and herds, on the fleſh and milk of which the inhabitants ſubſiſted, before they were acquainted with the luxury of bread, and whilſt they were averſe from the labours of tillage. It was afterwards occupied by the Belgæ, who practiſed agriculture, and raiſed corn for the purpoſe of making both bread and beer, made cheeſe of their milk, and wore manufactured cloathing inſtead of the raw hides with which their predeceſſors were covered. When they took poſſeſſion of it, it was called "Venta Belgarum." In 516, it was taken and almoſt totally demoliſhed by Cerdic the Saxon commander; and afterwards denominated "Wintanceaſter," or Wincheſter, which name expreſſes its former importance as a Roman ſtation. Miller's Hiſt. of Wincheſter, vol. i. p. 6. See Winchester.

CAERWYS, a ſmall town of Flintſhire, North Wales, appears to have been a Roman ſtation, and alſo a place of judicature, or the eiſteddfod of the ancient Britons. The town now conſiſts of four ſpacious ſtreets, croſſing each other at right angles. Several Roman coins, and an inſcribed ſtone have been found here. In the vicinity of the town are many tumuli; but Caerwys is principally celebrated for its eiſteddfod, where the ſeſſions of bards and minſtrels were held for many centuries. Judges were appointed, and bards of acknowledged merit, and minſtrels were admitted as competitors for the prize of fame. The judges were nominated by a commiſſion from the provincial prince, till after the conqueſt of Wales by Edward I., when the Engliſh monarchs ſanctioned this eiſteddfod, as an inſtitution calculated to ſoften the manners of a fierce and warlike people. Previous to this, we find that Gruffydd ap Cynon, contemporary with king John, enacted that no perſon ſhould follow the profeſſion of a bard, or minſtrel, who was not regularly admitted by the eiſteddfod, which was alternately held at the three royal reſidences, of Caerwys, Aberfraw, and Mathravel. In 1568, a commiſſion was granted by queen Elizabeth, for holding an eiſteddfod at this place, when 55 degrees were conferred on the moſt eminent candidates; 17 in vocal, and 38 in inſtrumental muſic. From this period the eiſteddfod was neglected, till 1798, when a meeting was aſſembled by a public notice from the Gwyneddigion, or Vendotian Society inſtituted in London for the encouragement of Welſh literature. On this occaſion the town hall was prepared for the reception of a numerous and reſpectable company. Twenty bards, eighteen vocal performers, and twelve harpers, aſſembled here, and each exhibited ſpecimens of his reſpective profeſſion and talents. The preſent town conſiſts of 162 houſes, contains 773 inhabitants, has a ſmall weekly market on Tueſday, and is 212 miles N. W. from London. Evans's "Cambrian Itinerary," 8vo. 1802.

CÆSALPINIA, in *Botany*, (named by Plumier in honour of Cæſalpinus, chief phyſician to pope Clement VIII.) Linn. Gen. 515, 516. Schreb. 701. 703. Willd. 815. Juſſ. 349. Vent. 376, 377. Gært. 442. 467. Claſs and order, *decandria monogynia*. Nat. ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* perianth of one leaf with five diviſions; tube ſhort; ſegments oblong, deciduous, the loweſt longer than the reſt, ſlightly vaulted. *Cor.* petals five, inſerted into the throat of the calycine tube, unequal. *Stam.* filaments ten or five, inſerted into the throat of the calyx, thread-ſhaped, woolly or hairy at the baſe, declining; anthers oblong, decumbent. *Piſt.* germ ſuperior, linear-oblong, compreſſed, attenuated at the baſe; ſtyle thread-ſhaped, ſtigma blunt. *Peric.* legume oblong, compreſſed, one, two, or many-celled. *Seeds* rather egg-ſhaped, compreſſed, flat.

Eſſ. Ch. *Calyx* with five diviſions; the loweſt ſegment longer and ſlightly vaulted. *Stamens* woolly or hairy at the baſe. *Petals* five. *Legume* compreſſed.

Obſ. Theſe characters are ſo drawn up as to include Tournefort's Poinciana which has been admitted as a ſeparate genus by Linnæus, Juſſieu, Ventenat, Gærtner, La Marck, Boſc, and Poiret, the ſucceſſor of La Marck in the botanical part of Encyc. Methodique; but as, according to La Marck, Poinciana differs from Cæſalpinia chiefly in the great length of its ſtamens, and the deep diviſions of its calyx, the two genera have been incorporated by profeſſor Martyn and Willdenow.

Sp. 1. C. *braſilienſis*, braſil-wood or braſiletto, Linn. Sp. Willd. Brown Jam. 227. "Stem and leaves without prickles." Linn. "Without prickles; leaflets ovate-oblong; rachis pubeſcent; calyx downy: ſtamens ſhorter than the corolla." Swartz. Obſerv. 166. This is ſaid by Linnæus and Miller to be the tree which furniſhes the braſil-wood, ſo well known in commerce and the arts. But La Marck, who has entirely omittted this ſpecies, aſſerts that the true braſil-wood is the next ſpecies which does not occur in any of the works of Linnæus; and it is worthy of notice that Mr. Miller, in direct oppoſition to the ſpecific character of Linnæus, deſcribes his C. braſilienſis as armed with recurved prickles correſponding with the deſcriptions of the braſil-wood given by the older botaniſts, all of which are quoted by La Marck as ſynonyms of his C. echinata. The ſynonym of Brown is however an original authority for the exiſtence of a ſpecies without prickles; and on this account we have followed Willdenow in admitting the braſilienſis of Linnæus as well as the echinata of La Marck. 2. C. *echinata*, La Marck, Willden. Pſeudo-ſantalum rubrum, ſive Arbor Braſilia: Bauh. Pin. 393. Rai Hiſt. 1736. Acacia Glorioſa Spinis armata, cujus Lignum Braſilia dictum Tinctoria; Pluk. Alm. 5. Ibira Pitanga, Marg. Piſon. "Stem and branches prickly; leaflets egg-ſhaped, obtuſe; legumens echinated." A large tree. *Branches* long and ſpreading. *Leaves* alternate, twice-winged; leaflets reſembling the leaves of box. *Flowers* in ſimple racemes, variegated with yellow and red, ſweet-ſcented. *Legumes*, dark-brown, oblong, compreſſed, beſet with ſmall points. *Seeds* reddiſh brown, ſmooth. The interior wood is of a red colour, and is covered with ſo thick an alburnum, that of ſo vaſt a tree only a very ſmall part is fit for the uſe of the dyer. It cannot be uſed without alum and tartar, and produces only a fugitive colour. Boiled in beer, wine, or vinegar, with the addition of alum, it makes a red ink. By the means of acids it becomes a kind of carmine; and, with different modes of treatment, is the baſis of various pigments. It takes a good poliſh, is very hard and dry, crackles in the fire, and burns with very little ſmoke. A native of Fernambucco and other parts of Braſil. 3. C. *bahamenſis*, La Marck. (Pſeudo-ſantalum croceum, Sloane, Jam. Hiſt. 2. p. 184. Cateſb. Car. 2. p. 51. t. 51.) "Branches prickly; leaflets inverſely egg-ſhaped, emarginate; flowers white." A ſhrub or ſmall tree. *Branches* and common petioles armed with ſhort, ſcattered prickles, which are turned upwards. *Leaves* twice-winged; leaflets ſmooth on both ſides; pale beneath, and of a delicate green above: having, at their baſe, and at the baſe of each pinnule, from two to four ſmall, ſtraight prickles. *Flowers* whitiſh, in ſtraight racemes. *Legumes* oblong, pointed, peduncled, compreſſed. *Seeds* ſmall, roundiſh. La Marck obſerves, that on account of the prickly branches, it cannot be referred to the braſilienſis of Linnæus, under which that author quotes the ſynonyms of Sloane and Cateſby. A native of Bahama and Jamaica, whence it is brought to Europe for the uſe of the dyer. Large quantities of it were formerly cut down in ſome of the Bahama iſlands, but it is now nearly extirpated. 4. C. *veſicaria*, Linn. (Colutæa Veræ-erucis, Pluk. tab. 165. Senna ſpuria ſabinæ odore, Sloan. Jam. Hiſt. 2. p. 50. t. 181. f. 2, 3. Rai. dend. iii. No. 18.) "Stem prickly; leaves inverſely egg-ſhaped; racemes ſpiked, flowers yellow. La Marck. "Leaves inverſely heart-ſhaped, roundiſh." Linn. A tree. *Stem* about fifteen feet high, nearly the thickneſs of a man's thigh, rather crooked, covered with an even, whitiſh bark. *Branches* crooked, prickly. *Leaves* alternate, twice-winged; leaflets obtuſe, a little emarginate, thoſe at the ſummit of the wing a little larger than the reſt; with a few hooked prickles at the baſe of each pair of leaflets, and each pair of wings. *Flowers* yellow in ſeveral diſtinct ſpikes. *Legumes* oval, nearly obtuſe, blackiſh, furrowed. *Seeds* two or three. La Marck. Legume without valves, nearly filled with a ſpongy ſubſtance; two-celled, with a ſingle ſeed in each cell. Gærtner, 442. tab. 144. Obſ. Profeſſor Martyn and Willdenow quote Poinciana bijuga of Linnæus, as a ſynonym of this ſpecies, and ſuppoſe that it has inadvertently been deſcribed twice, under different names, and placed in diſtinct genera. Poiret, who retains the genus Poinciana, though, as he himſelf acknowledges, without ſufficient reaſon, takes no notice of bijuga, and therefore ſeems to be of the ſame opinion; but in that caſe he ought to have noticed the omiſſion, as his predeceſſor La Marck, when he wrote the article Cæſalpinia veſicaria, had certainly no idea that the Poinciana bijuga is the ſame plant. Martyn and Willdenow prefer the trivial name bijuga, and give the following ſpecific character, "Prickly: leaves doubly-pinnate with two pairs of obcordate leaflets; they and the calyxes ſmooth; ſtamens equalling the corolla." A native of the Weſt Indies. 5. C. *criſta*. Linn. Sp. Pl. C. polyphylla aculeis horrida, Plum. gen. 26. t. 68. "Prickly; leaflets oval; racemes ſimple; calyx ſmooth: petals egg-ſhaped, ſhorter than the calyx; ſtamens longer than the calyx." A ſmall tree, or rather ſhrub, about four feet high. *Bark* rather thick, aſh-coloured without, red within. *Wood* ſolid, heavy, eaſily cleft, of a red colour, with a white alburnum. *Trunk* divided near its ſummit into ſeveral branches, nearly the ſize of a man's arm; and armed with numerous, ſcattered, ſhort, hooked, ſtrong, blackiſh prickles, each ſituated on a tubercle. *Leaves* alternate; leaflets ſmooth, of a pleaſant green colour. *Flowers* pale green or whitiſh, with only five ſtamens, in upright racemes forming a pyramid. La Marck, from Plumier's MSS. A native of the Antilles, where it is called braſilletto, from the reſemblance of its wood to that of braſil. 6. C. *ſappan*, Linn. Sp. Pl. Roxb. Corom. 1. p. 17. t. 16. Gært. tab. 144. f. 1. La Marck Illuſt. Pl. 335. fig. 1. (Ligno braſiliano ſimile, Bauh. Pin. 393. Rai Hiſt. 1737. Lignum Sappan, Rumph. Amb. 4. p. 56. t. 21. Tſiampangam, Rheed. Mal. 6. p. 3. t. 2.) "Prickly; leaflets oblong, not equilateral, obtuſe, a little emarginate." A ſmall tree. *Trunk* from ten to fifteen feet high. *Leaves* large, twice-winged; pinnules from twelve to fifteen; leaflets numerous, crowded, ſmooth, finely ſtriated, obliquely truncate at the baſe. *Flowers* yellow, ſweet-ſcented, in racemes. *Legume* ſomewhat woody, thick, ſhort, ſomewhat rhomboidal, beaked, and one-celled, two-valved. *Seeds* about four, large, ovate-oblong, ſmooth. A native of the Eaſt Indies, Siam, the Molucca Iſlands, and Japan. Its wood is uſed for cabinet work; and being very durable in ſea water, is excellent for trenails in ſhip-building: when boiled in water, it yields a blackiſh colour, which, with the addition of alum, becomes red, and is much uſed for dyeing woollens and cottons of a beautiful red colour. 6. C. *mimoſioides*, Willd. La Marck Pl. 335. f. 2. (Kal-todda-waddi, Rheed. Mal. 6. p. 15. t. 8. Mimoſa malabarica, Rai Hiſt. 1740.) "Stem, petioles and peduncles prickly; leaflets oblong, obtuſe, ſmall: legumes woolly." A ſhrub about four feet high. *Leaves* twice-winged, reſembling thoſe of ſeveral ſpecies of acacia, ſenſitive, with two or three large prickles at the baſe of each wing. *Flowers* large, yellow, in a long raceme; petals unequal, rather longer than the ſtamens. *Legumes* containing one or two ſeeds. A native of Malabar, communicated to La Marck, by Sonnerat. 7. C. *pulcherrima*, Barbadoes flower-fence, or Spaniſh carnation, Willd. Martyn, (Poinciana pulcherrima, Linn. Sp. Pl. Reich. La Marck Pl. 333. Boſc. Nouv. Dict. Pl. M. 26. Poiret Encyc. Meth. v. 5. p. 447. Brown. Jam. p. 225. Jacq. Americ. 122. Tourn. Inſt. 619. t. 391. Criſta pavonis, Breyn. Prod. 2. p. 37. Cent. 61. t. 22. Rai. Hiſt. p. 991. Erythroxylon ind. Herm. Prod. 333. Senna ſpuria flore ex luteo & rubro, Sloane Jam. 2. p. 49. Acacia orientalis, Plukn. Al. 5. Tſietti mandaru, Rheed. Mal. 6. 1. t. 1.) "Prickly; leaflets oblong-oval, emarginate, ſmooth; calyx ſmooth; corymbs ſimple; petals fringed; ſtamens very long." A ſhrub about twelve feet high, with a grey, ſmooth bark. *Branches* ſpreading, armed at each knot with two ſhort, ſtrong crooked ſpines. *Leaves* alternate, twice winged; leaflets from five to ten pairs, a little narrowed at the baſe, ſmaller on the upper leaves; emitting, when bruiſed, a ſtrong odour like ſavin; with one gland at the baſe, and another on the upper part of the common petiole, and two ſmall ſharp joints a little above the baſe of the partial petiole. *Flowers* in a terminal, looſe corymb, ſometimes approaching to an umbel; on ſimple, ſmooth peduncles, two or three inches long; leaves of the calyx egg-ſhaped, concave, deciduous; petals beautifully variegated with red and yellow; ſtamens at leaſt three times as long as the petals. *Legume* oblong, compreſſed, coriaceous, many-celled, two-valved; partitions rather thick, compoſed of rigid briſtles, thickly matted together. *Seeds* one in each cell, ovate-quadrangular, thick, flat on both ſides, ſmooth, a little poliſhed, of a cheſnut colour. A native of the Eaſt and Weſt Indies. In Barbadoes it is planted in hedges, and makes a beautiful fence. In Jamaica its leaves are uſed as a purgative, inſtead of ſenna. All its parts are thought to be powerful emmenagogues, and are frequently uſed for that purpoſe by the negroes. Its wood is ſaid to afford a good dye. 8. C. *elata*, Willd. (Poinciana elata, Linn. Sp. Pl. Forſkal Flor. Ægypt. 86.) "Unarmed; leaflets linear, obtuſe, with a point, corymbs compound; calyxes coriaceous, downy; petals fringed; ſtamens very long." A ſhrub or ſmall tree. *Branches* pubeſcent. *Leaves* alternate, twice-winged; leaflets in about twenty pairs, minute, almoſt ſmooth. *Flowers* in terminal corymbs, on ſhort, ſtiff, thick, alternate peduncles; leaves of the calyx united at their baſe, lanceolate, pubeſcent, a little reflexed. *Legume* almoſt ſmooth, often depreſſed between the ſeeds, ſharp at each end. A native of the Eaſt Indies. 9. C. *coriaria*, Willd. (Poinciana coriaria, Jacq. Amer. 123. t. 175. f. 136. Siliqua arboris Guatapanæ, Breyn. Cent. p. 58. f. 5.) "Unarmed; leaflets linear, obtuſe; racemes panicled; calyxes ſmooth; ſtamens twice as long as the corolla." A ſhrub from twelve to fifteen feet high, much branched, with dark-coloured ſpotted bark. *Leaves* alternate, twice-winged; leaflets ſmall, ſmooth, about three lines long. *Flowers* ſmall, yellow, in a terminal, cloſe, ſpikelike raceme, on ſhort, ſimple, peduncles, with little ſmell. *Legumes* elongated, obtuſe, ſhort, a little bent, ſpongy. A native of Curaçoa and Carthagena; in ſalt marſhes. The Spaniards and natives uſe the ripe pods for tanning leather, and call them libidibi.

Propagation and Culture. As all the ſpecies are natives of warm climates, they are cultivated in Europe only as ornamental plants; and though none of them have hitherto flowered in our ſtoves, the elegance of their foliage, and the ſingularity of their habit, give them a diſtinguiſhed place in collections of exotic plants. They can be raiſed only from ſeeds ſent in the pod from their native country, and afterwards ſteeped in water till they are ſwollen, and their envelope a little ſoftened; but if kept dry will preſerve their vegetative power ſeveral years. The ſeeds, when taken from the water, muſt be ſown in pots filled with a mixture of common mould and bog-earth, in nearly equal proportions, and plunged into a hot-bed of tanner's bark, kept at a moderate warmth. The plants, if ſown at the end of March or beginning of April, will appear in the courſe of May or June, and when they are three or four inches high, ſhould be tranſplanted ſingly into ſeparate pots, with a larger proportion of good mould. In autumn they muſt be removed from the hot-bed into the ſtove, and during the firſt winter muſt be carefully preſerved from cold, humidity, and inſects, and furniſhed with freſh air in the day-time, when the weather is favourable. They ſucceed better in a light, than a ſtrong argillaceous earth.

Cæsalpinia, Fl. Zeyl. 157. See Guillandina *Bonduc*.

CÆSALPINOIDES. See Gleditschia *Triacanthos*.

CÆSALPINUS, Andrew, in *Biography*, born at Arezzo in Tuſcany, in the early part of the 16th century, was educated under Luke Ghines, director of the public garden at Piſa, whence he appears to have taken his taſte for botany, which he cultivated with aſſiduity and ſucceſs. But he became ſtill more eminent for his ſkill in anatomy and medicine, and for his intimate acquaintance with the works of Ariſtotle, whoſe philoſophy he explained and defended, in his "Queſtionum Peripateticarum Libri Quinque," againſt the doctrines of Galen, then generally followed. This was publiſhed at Venice in 1571, 4to. After taking his degree of doctor, he was made profeſſor in medicine and anatomy in the univerſity at Piſa, and continued in that office ſeveral years, until invited to Rome, and made firſt phyſician and archiater to pope Clement VIII. He died at Rome, aged 84 years, in 1603. His works are numerous, and give equal proofs of genius and learning.

“De Plantis Libri xvi” Florent. 1583, 4to. He compares the ſeeds of plants to the eggs of animals; the ſeed ſerving, he ſays, to defend and nouriſh the germ until it has taken root in the earth. He alſo formed a ſyſtem of arrangement, dividing the plants into claſſes, from the fructification; but as there are no engravings, or delineations of the plants, and he only gave the trivial names, the work is of little value at this time. He left a hortus ſiccus of 760 plants, which is ſaid to be now in being. His ſpeculations in anatomy are ſtill more ingenious. He deſcribes very clearly the circulation of the blood through the heart, and was acquainted with the uſes of the valves. Douglas thinks him entitled to equal praiſe with Harvey, who only completed what he had nearly achieved. He clearly, Douglas ſays, deſcribes the contraction and dilatation of the heart, which is ſhewn from the following paſſage from his fourth book, “Queſtionum Peripateticarum.” “Vaſorum in cor deſinentium quædam intromittunt contentam in ipſis ſubſtantiam, ut vena cava in dextro ventriculo, et arteria venalis in ſiniſtro; quædam educunt, ut arteria aorta in ſiniſtro ventriculo, et vena arterialis in dextro; omnibus autem membranulæ ſunt appoſitæ et officio delegatæ ut oſcula intromittentium non educant et educentium non intromittant, contingit corde contrahente, ſeu arterias dilatari, et dilatantes conſtringi; dum enim dilatatur cor, claudi vult orificia educentium, ut ex corde non influat tunc ſubſtantia in arterias, contrahente autem ſe, influere dehiſcentibus membranis.” The pulſe, he thinks, depends on an efferveſcence of the blood in the heart. His works on the practice of medicine have alſo their portion of merit. “Queſtionum Medicarum Libri ii.;” “De Facultatibus Medicamentorum Libri duo,” Venet. 1593, 4to. Bleeding can only be advantageouſly uſed in the beginning of fever. In putrid fever the cure is to commence with clearing the ſtomach and bowels. “Speculum Artis Medicæ Hippocraticæ, exhibens dignoſcendos curandoſque morbos, in quo multa viſuntur, quæ a præclariſſimis medicis intacta relicta erant.” Lion. 1601-2-3, 3 vols. 8vo. treating of the Materia Medica, fevers, lues venerea, &c. in which diſeaſe he very much extols the uſe of guiacum. Douglas. Bib. Anat. Specimen. Haller. Bib. Bot. Med. et Anat.

CÆSAR, in *Roman Antiquity*, was a long time uſed for the heir intended, or preſumptive, of the empire; as *king of the Romans* has been long uſed for that of the German empire.

The Cæſars were a kind of adjuncts or aſſociates of the empire, *participes imperii*. They wore the imperial mantle, purple, and diadem, and walked with other marks of the ſovereign dignity: they were created, like the emperors, by putting on the purple robe.

The dignity of Cæſar remained the ſecond of the empire, till Alexius Commenus made Nicephorus Meliſſenus Cæſar by contract, and it being neceſſary to confer ſome higher dignity on his own brother Iſaacius, he created him Sebaſtocrator, with the precedency over Meliſſenus, ordering that in all acclamations, &c. Iſaacius Sebaſtocrator ſhould be named the ſecond, and Meliſſenus Cæſar the third.

The title took its riſe from the cognomen, or ſurname of the firſt emperor, C. Julius Cæſar, which, by a decree of the ſenate, all the ſucceeding emperors were to bear. Under his ſucceſſor, the appellation Auguſtus being appropriated to the emperors, in compliment to that prince, the title Cæſar was given to the ſecond perſon in the empire, though it ſtill continued alſo to be given to the firſt, and hence the difference between Cæſar uſed ſimply, and Cæſar with the addition of Imperator Auguſtus. Authors are divided as to the origin of the word Cæſar, the cognomen of the Gens Julia. The more common opinion is, that the word Cæſar comes *à cæſo matris utero;* becauſe his mother's womb was cut open to give him birth.

If this opinion be true, ſhe muſt have ſurvived the operation; for we are told by Tacitus (Dialog. de Orat. 28.) that ſhe took care of his education, and by Suetonius (in Cæſ. c. 26.), that ſhe died when her ſon was in the war againſt the Gauls. It is alſo known that ſhe was alive when he was married to Pompeia. It has been alledged, however, that the words of Pliny (H. N. lib. vii. 3. 9.), upon which this opinion is founded, have been erroneouſly applied to Cæſar the Dictator; whereas he meant only to expreſs, that the firſt perſon who was ſurnamed Cæſar had derived his name from this circumſtance.

Some pretend that the laurel crown on medals is never given to Cæſars, but only to Auguſti; which is overthrown by a medallion of Maximus: not to mention another medal of the lower empire, wherein Criſpus Cæſar is crowned with laurel. See AUGUST.

Card. Norris obſerves, that the years of the Cæſars were frequently marked on their medals; of which we have inſtances on the medals of Conſtantine, Chlorus, and divers others, whoſe years are expreſſed on their coins, though they were never more than Cæſars.

CÆSAR, CAIUS JULIUS, in *Biography*, the dictator of Rome and founder of its imperial conſtitution, was a deſcendant of the Julian family, which boaſted its derivation from Venus by Æneas, the ſon of Anchiſes, to whom fabulous hiſtory aſcribes the origin of the Roman ſtate. See ÆNEAS. From the 10th year of the ſecond Punic war, A. U. C. 546, till the time of Caius Julius Cæſar, the emperor's father, ſome of the family of the Cæſars enjoyed public offices in the commonwealth. The father of Cæſar died ſuddenly in early life, after having occupied the ſtation of prætor: his mother's name was Aurelia; and his aunt Julia was the wife of the celebrated Caius Marius. He was born at Rome, on the 12th day of the month Quintilis, afterwards called July, A. U. C. 654, B. C. 100; and though he loſt his father in his 16th year, his connections were ſuch as to favour his introduction into life in a manner ſuitable to his talents. In his youth he was betrothed to Coſſutia, a rich heireſs; but in his 17th year he broke this engagement, and married Cornelia, the daughter of L. Cornelius Cinna; and at this time he was inveſted with the dignity of *flamen dialis*. When Sylla ſucceeded in overthrowing the Marian party, to which Cæſar owed his advancement, he was urged by this powerful dictator to divorce the daughter of his enemy; but Cæſar, reſiſting the injunction, was deprived of the prieſtly office, as well as of his own patrimony and his wife's portion, and ſubjected to a decree of proſcription. This decree, however, was afterwards reverſed, by the interceſſion of the Veſtal virgins and ſome diſtinguiſhed perſons of his own family; although in granting their petition Sylla admoniſhed them, that they would repent of their interference, as he foreſaw in Cæſar many Mariuſes. Cæſar, alarmed at his jealouſy, retired from Rome, and after a ſhort interval withdrew to the court of Nicomedes, king of Bithynia, where his conduct gave occaſion to ſome ſuſpicions of an infamous nature. At the ſiege of Mitylene, in which he was employed by Thermus, who was at this time prætor of Aſia, he diſtinguiſhed himſelf by his military valour, and obtained from his general the honourable recompence of a civic crown. Having ſerved for a ſhort time in Cilicia, under Servilius Iſauricus, the death of Sylla made way for his return to Rome; where, declining to concur in the ambitious deſigns of Lepidus; he devoted himſelf to the ſtudy and practice of eloquence. The mal-adminiſtration of Dolabella,

bella, who had been prætor of Macedon, and who had been honoured with the conſulate and a triumph, afforded him an opportunity of gaining diſtinguiſhed reputation among the beſt orators of his age, although the defence of Hortenſius and Cotta, the two moſt celebrated pleaders of Rome, prevented his ſucceſs. As at this ſame time he does not ſeem to have formed, or at leaſt to have matured, thoſe ambitious deſigns which led him to prefer the career of war and politics to that of an orator, he embarked for Rhodes, with a view of gaining improvement in the art of eloquence from the inſtructions of Apollonius Molon, one of the moſt eminent rhetoricians of that period. In his paſſage thither, he was captured by ſome pirates who infeſted thoſe ſeas; and during his confinement he exhibited thoſe peculiar and extraordinary talents, which were afterwards exemplified in the progreſs of his life. His captors demanded 20 talents for his ranſom, but he informed them that they were not duly apprized of the importance of their priſoner, and engaged to pay them 50; and whilſt his domeſtics were deputed to raiſe the ſtipulated ſum in the neighbouring cities, he remained in cuſtody, accompanied only by one friend and two attendants, and amuſed himſelf with reciting to his barbarous auditors, whom he treated with contempt, ſome orations and verſes which he compoſed for the occaſion; and often, between jeſt and earneſt, threatened them with future tokens of his diſpleaſure, if they diſturbed his repoſe. Having been furniſhed with the promiſed ranſom by the inhabitants of Miletus, he obtained his liberty, and in that city fitted out ſome ſhips, with which he purſued and captured the pirates; and, having conveyed them to Pergamus, he there inflicted upon them the puniſhment of crucifixion, with which he had threatened them. He then proceeded to Rhodes, and purſued his ſtudies. During his reſidence in this city, he took occaſion to paſs over to the continent, and though he had no commiſſion, to raiſe troops, and with this force to check the progreſs of Mithridates, who was making depredations on the provinces in alliance with the Romans, and to preſerve thoſe cities, which were ready to revolt, ſteady in their allegiance. At this time he was only 24 years of age, and yet conducted this expedition with a prudence and bravery which would have done honour to the veterans in military ſervice. On his return to Rome, the chief object of his policy was to ingratiate himſelf with the people, and thus to ſecure his advancement to thoſe public offices, which would ſerve him in the accompliſhment of the purpoſes of his ambition. Accordingly he concurred with Cicero in promoting the Manilian law, and in thus ſecuring the favour of Pompey. In the ſeveral offices of tribune, quæſtor, and ædile, he contrived by his general conduct, and by his unbounded liberality, to attach to himſelf the affections of the people. He teſtified his reſpect in a variety of inſtances to the Marian party, although by ſo doing he incurred the cenſure of the ariſtocracy, who charged him with meditating deſigns againſt the government. He alſo obtained the conſulate for L. Julius Cæſar, one of his own family, who, together with his colleague C. Marcus Figulus, under Cæſar's direction and influence, condemned many of the partiſans of Sylla either to baniſhment or to death. Catiline, however, was ſpared; and Cæſar is even ſuſpected to have concurred in his conſpiracy. When this conſpiracy was ſuppreſſed, and the ſenate deliberated on the puniſhment to be inflicted on thoſe that were concerned in it, he delivered an artful ſpeech in praiſe of clemency, and his oration, which is ſtill extant, and which, as a compoſition has been much admired, made an impreſſion on the aſſembly, which the ſevere eloquence of Cato was hardly ſufficient to counteract. Cæſar gave a ſingle vote againſt the death of the conſpirators; and his interference in their favour excited ſuch indignation that he eſcaped with his life by the ſeaſonable interpoſition of Cicero, whoſe teſtimony contributed to his juſtification, notwithſtanding the charges alledged againſt him of his concern in the plot. During the progreſs of this conteſt, Cæſar indulged in the licentious gratifications of intemperance and gallantry; and Servilia, the ſiſter of Cato, avowed her paſſionate attachment to him, and he was ſuppoſed to be the real father of her ſon Marcus Brutus. See BRUTUS. The ſucceſs of Cæſar, in his competition for the office of chief pontiff, againſt two of the chief perſons of the republic, ſerved to augment the jealouſy entertained of him by the Senatorian party. Notwithſtanding the licentiouſneſs of his own life, his pride would not allow him to ſubmit to the ſuſpicion of domeſtic diſhonour; and therefore, upon the diſcovery of an intrigue between his wife Pompeia, whom he had married after the death of Cornelia, and P. Clodius, (ſee BONA *Dea*), he inſtantly procured a divorce, though he did not ſucceed ſo far as to ſubſtantiate the charge; alledging in vindication of his conduct, "Cæſar's wife muſt not be even ſuſpected." At this time he was ſerving the office of prætor, upon the expiration of which he prepared for aſſuming the government of Farther Spain, comprehending Luſitania and Bœtica, which fell to his lot: but his creditors would have prevented his ſucceeding to his new province, if Craſſus had not ſatisfied their demands. In his journey, he paſſed through a miſerable village on the Alps; and when one of his companions jocularly inquired, "whether there could be any contentions for power and dignity in ſuch a place?" Cæſar, in token of his ruling paſſion, replied, "I proteſt that I had rather be the firſt man here, than the ſecond in Rome." His rapacious diſpoſition, like that of other Roman governors, was manifeſted on ſome occaſions no leſs ſignally than his ambition. He conſidered his government as affording the opportunity and means of enriching himſelf; and, therefore, availing himſelf of pretexts for diſputes, he marched into provinces unſubdued by the Roman arms, for the purpoſe of plunder; and brought back to Rome, in the following year, a ſum ſufficient for diſcharging his debts, though they are ſaid to have amounted to 1,600,000l. ſterling.

Having paſſed through the ſubordinate offices of the ſtate, the next object of his ambition was the conſulate. In order to the attainment of this dignity, it was neceſſary for him to connect himſelf with one of the two parties that divided the power of the ſtate, that of Pompey or that of Craſſus. In this dilemma, he determined on reconciling the two rivals; and accordingly he propoſed a triumvirate, in which the whole power of the ſtate ſhould be lodged, and this was the firſt triumvirate eſtabliſhed at Rome. See TRIUMVIRATE. By this artful expedient Cæſar by means of the intereſt of Pompey and Craſſus, ſecured his election to the conſulſhip. A. U. C. 694. B. C. 60. Cato alone foreſaw the conſequences of this alliance, and oppoſed the election; exclaiming, that Rome had loſt her liberty; but his opinion was diſregarded till it was too late to follow his prudent counſel. The only advantage which he and his party obtained was the election of Bibulus as Cæſar's colleague; and for this purpoſe they were under a neceſſity of counteracting Cæſar's intereſt in favour of another candidate, by outbidding him in the purchaſe of votes. As ſoon as Cæſar entered upon his office, he confirmed all the acts of Pompey, and proceeded to uſe all his endeavours for conciliating the affections of the people. With this view he propoſed an Agrarian law for the diviſion of certain lands in Campania among ſuch of the poor citizens as had three or more children; but the ſenators, though they approved the act, withheld their aſſent, till at length it was paſſed by the people, and the ſenators were conſtrained to ſanction it by their aſſent; inſomuch that it was jocoſely ſaid, that, inſtead of dating any tranſaction of this year in the uſual mode, during the conſulſhip of Cæſar and Bibulus, it would be more proper to inſert "the conſulſhip of Cæſar and Julius." This victory over the ſenate and Bibulus made Cæſar abſolute in Rome; and having ſecured both the people and knights, he governed with an uncontroulable ſway.

As Cicero exclaimed againſt the triumvirate, and thus provoked the reſentment of this body, they reſolved upon his ruin, and with this view they promoted Clodius to the tribuneſhip, which proved eventually the cauſe of his baniſhment. The marriage of Cæſar's daughter Julia with Pompey, ſerved to ſtrengthen the connection between theſe two great men; and by marrying Calpurnia, daughter of L. Calpurnius Piſo, the conſul of the preceding year, he attached him to his cauſe.

He alſo contrived by his influence on the ſenate and people, together with the aſſiſtance of Pompey and Craſſus, to procure the government of Tranſalpine and Ciſalpine Gaul, contrary to all law, for five years, with the command of four legions.

Having thus eſtabliſhed his intereſt at Rome, Cæſar found it neceſſary, in the year B. C. 58, to haſten to Gaul, the province which was the ſcene of thoſe military exploits, by which he acquired a degree of reputation and influence, that ſerved in the progreſs of his career to ſubjugate his country. The Helvetians, having abandoned their country, and burnt their towns and houſes, were preparing to enter Gaul by way of Geneva. Cæſar, therefore, by forced marches, reached the banks of the Rhone in eight days, and having refuſed the Helvetians the liberty they ſolicited of paſſing through the country of the Allobroges, prepared, by procuring freſh ſupplies of troops from Italy, to defend himſelf againſt the effects of their reſentment. Accordingly, whilſt they were embarraſſed in paſſing the Arar, (now Saone), he fell upon them and totally defeated them. Upon their again rallying near Bibracte, the capital of the Ædui, and purſuing him in his retreat, a bloody battle enſued, which terminated, notwithſtanding the valour and obſtinacy of the Helvetians, in their total overthrow; ſo that they were obliged, after the loſs of their baggage and many priſoners, to ſupplicate his clemency; and to acquieſce in the obligation which he impoſed upon them, of laying down their arms, giving hoſtages, and returning to their own country. This victory was ſo complete, that Cæſar received congratulations from all parts of the country, and the Ædui, in particular, implored his protection againſt Arioviſtus, king of the Germans, whom he drove back from the frontiers of Gaul to his own territories. Having ſucceeded in this enterpriſe, he put his troops into winter-quarters, and croſſing the Alps, returned into Ciſalpine Gaul, in order to concert meaſures for the operations of the next year. In the mean while all the nations of Belgium confederated againſt the Roman republic, and furniſhed ample employment for his military exertions in the courſe of the ſecond year of his government. The fame of his exploits in diſſolving their confederacy, and ſubduing them ſeparately, extended beyond the Rhine, and induced ſeveral remote nations to ſend ambaſſadors to him, with offers of ſubmiſſion. Having diſpatched his troops into winter-quarters, he repaſſed the Alps, and ſpent the winter in Inſubria. By theſe conqueſts, Cæſar effaced the remembrance of Pompey's victories in the Eaſt, and by the prodigious ſums, which he acquired in Gaul, chiefly by plundering the temples of their treaſures, he increaſed the number of his friends in Italy. The ſignal ſucceſſes of this bloody campaign were honoured at Rome with a *ſupplicatio*, or religious thankſgiving of the unprecedented interval of fifteen days; and Pompey became jealous of a renown that ſeemed likely to eclipſe his own. In the third year of his adminiſtration in Gaul, Cæſar, whilſt he was in Illyricum, a part of his province, received information that the Veneti, the ancient inhabitants of Vagnes, in Britanny, together with ſome other neighbouring nations, were making preparations for war; upon which he fitted out a fleet, entruſted the command of it to Brutus, who engaged that of the enemy, and gained a complete victory. The Veneti ſubmitted; but Cæſar put their chief men to death, and ſold the reſt for ſlaves. Craſſus alſo, his lieutenant, reduced the whole of Aquitaine.

After ſome other ſucceſsful expeditions, Cæſar repaſſed the Alps, according to his uſual cuſtom, and reſided for ſome months in Ciſalpine Gaul, whence he directed the operations of his party at Rome, and excited Clodius to commit atrocious acts of violence. He likewiſe concurred with Pompey and Craſſus, who aſpired to the conſulate, and ordered his agents to ſpare no expence in purchaſing the ſuffrages of the tribes, ſo that theſe two chiefs were unanimouſly choſen. In the year B. C. 55, Cæſar renewed his military exploits in Gaul; and having driven back ſome German tribes, which had croſſed the Rhine with a deſign of ſettling in Belgium; and having paſſed the Rhine, laid waſte the country of the Sicambri, and ſpread a general alarm through the parts adjacent, he returned into Gaul, reſolving to paſs over into Britain, and to puniſh its inhabitants for furniſhing the Gauls with continual ſupplies againſt the Romans. Accordingly, he fitted out a fleet, croſſed the channel, and diſperſed the natives who oppoſed his landing. This expedition, however, though the ſenate decreed him a ſupplication of twenty days in honour of it, was merely preparatory to that of the following year, in which he collected 800 veſſels, and embarked with 5 legions, and 2000 horſe, which landed without oppoſition on the Kentiſh coaſt, at the place of his former deſcent. His progreſs was for ſome time interrupted by a ſtorm which damaged his fleet, and required his drawing his forces towards the ſea-coaſt. But having repaired his ſhattered ſhips, and properly ſecured them, he put his troops again in motion, and advanced, notwithſtanding the oppoſition with which he had to encounter, as far as Cowey, near Walton, where he croſſed the Thames, although the enemy occupied the oppoſite bank, and had driven ſharp ſtakes in the only part of the river that was fordable. The Britons fled in conſternation; and Caſſivelaunus, finding all his efforts of reſiſtance ineffectual, ſubmitted to Cæſar, who condeſcended to give him peace; after having exacted a great number of hoſtages, and impoſed a certain tribute to be annually paid to the Roman people. Having thus ſettled the affairs of Britain, he marched back to the ſea-ſide, where he embarked his troops and hoſtages, and arrived in ſafety at the continent. On his return to Gaul, he found the country grievouſly diſtreſſed by a famine, which obliged him to diſperſe his troops into different quarters for their more commodious ſubſiſtence. The natives took this occaſion of attacking them in their winter ſtations; but Cæſar by his ſingular activity quelled the inſurrection, and after the moſt difficult and glorious campaign of any he had made in Gaul, paſſed the winter in this country.

The death of Julia during Cæſar's expedition into Britain diſſolved the alliance that had ſubſiſted between him and Pompey, and haſtened the revolution which was now approaching. Pompey, however, was not thoroughly appriſed of Cæſar's deſigns, and diſpatched to him two legions in order to recruit the loſſes which he had ſuſtained. The two next campaigns in Gaul furniſhed Cæſar with inceſſant employment, and by completing the work which he had already begun, he reduced the whole country to the ſtate of a Roman province, and extinguiſhed every ſpark of its independence. The war in Gaul laſted till the year B. C. 51; and it has been computed that, during his ſeveral campaigns there, Cæſar took 800 cities or towns, ſubdued 300 nations, and deſtroyed by the ſword a million of men; "titles ſufficient to place him high on the liſt of conquerors!" The criſis of the Roman ſtate was now ſpeedily approaching. The power of Pompey was ſupreme in the ſenate, and as Craſſus was dead, and his intereſt was altogether detached from that of Cæſar, he adopted various meaſures for mortifying his rival. The enemies of Cæſar were advanced to the chief offices of the ſtate; the legions that had been ſent to him were withdrawn; and his requeſt of continuing longer in his government was rejected. Cæſar, however, poſſeſſed the affections of the people, and to him the beſt troops of the ſtate were zealouſly attached. With a moderation, therefore, real or affected, from which no danger could enſue, he propoſed to diſband his army, if Pompey adopted the ſame meaſure. But Pompey, being leſs feared by the conſtitutional party than Cæſar, was ſupported by it in his refuſal to acquieſce in any terms of accommodation. The former was continued in his government of Spain, whilſt the like indulgence was refuſed to the latter, who, having marched with a ſingle legion acroſs the Alps to Ravenna, in order to wait the event, was informed that the ſenate had iſſued a decree announcing him an enemy of the republic if he did not give up his command within a limited time. Three tribunes in Cæſar's intereſt, who had proteſted againſt this decree, were driven with violence out of the ſenate-houſe; and had fled to Cæſar's camp in the diſguiſe of ſlaves, where their preſence inflamed the minds of the ſoldiers. In the mean time the fatal decree was iſſued at Rome, which required the conſuls, the pro conſul Pompey, and the conſular magiſtrates, to provide for the public ſafety: which, in effect, was a declaration of war. It was in the year B. C. 50 that theſe important events took place, and that the civil war commenced. Two powerful parties were now taking up arms; both pretended to have nothing in view but the defence of their common laws and liberty, whilſt their chiefs aimed only at eſtabliſhing their own power on the ruins of that liberty which they affected to defend. Pompey's party had on their ſide the forms of the conſtitution; he was acknowledged as the general of the common-wealth, and the whole ſenate, with the conſuls, followed his enſigns. On the other hand, Cæſar ſeemed to have the more equitable cauſe, and the people, with their tribunes, took part with him. The poet Lucan, who was of Pompey's party, without abſolutely deciding the queſtion between thoſe two rivals, ſeems to give the advantage to Cæſar, when he ſays, that Cæſar, could not bear a ſuperior, nor Pompey an equal.

"Nec quenquam jam ferre poteſt, Cæſarve priorem,
Pompeiuſve parem." Pharſ. I. 125.

Cæſar, as ſoon as he received the hoſtile decree, confiding in the attachment of his ſoldiers, reſolved to begin the war. Accordingly he marched to the Rubicon, a ſmall ſtream that ſeparated Ciſalpine Gaul from Italy. On the banks of this river he for ſome time pauſed and deliberated; but at length, crying out "the die is caſt," threw himſelf into the ſtream. Having paſſed this river, he became the avowed foe of his country; and therefore "this paſſage of the Rubicon" has been proverbially uſed to ſignify a deſperate deciſion. Having ſeized the neighbouring town of Ariminum, he ordered his main army in Gaul to haſten to him, and augmented his forces by new recruits in Ciſalpine Gaul. In his march he took poſſeſſion of Corfinium, in which many ſenators had ſought an aſylum, and whilſt he triumphed in his conqueſt, he manifeſted his moderation by granting them their lives and liberty. By this well-timed act of clemency he ſerved his cauſe almoſt as much as by the power of his arms. Rome was in the utmoſt conſternation. The people and all the ſenators were alarmed; and determined, as they had no ſufficient force with which to defend themſelves, to retire to Capua. After the reduction of Corfinium, Pompey withdrew from Capua to Brunduſium, whither he was followed by Cæſar. From thence he withdrew, whilſt his purſuer was inveſting the place and ſhutting it up by a mole, to Dyrrachium: and by his flight ſurrendered the whole of Italy to his rival. Whilſt the lieutenants of Cæſar were deputed to take poſſeſſion of Sicily and Sardinia, Cæſar himſelf advanced to Rome. On his approach to the city, he ſent a meſſage to the ſenators then in Italy, requeſting their counſel in the capital, and quartered his troops in the neighbouring municipia. To the aſſembled ſenators he gave an account of his conduct and avowed his moderation and deſire of compromiſing all differences; whilſt the people crowded to ſee the famous conqueror of Gaul, and to congratulate him on his return after an abſence of 10 years. With a view of providing for the neceſſary expences of the war, he repaired to the temple of Saturn and ſeized the public treaſure: and thus ſupplied with money, he raiſed troops in every part of Italy, and ſent governors into all the provinces ſubject to the republic. The war was now proſecuted with vigour. Cæſar himſelf undertook the campaign in Spain, and ſoon ſubjugated the whole country; and on his return to Rome the prætor Lepidus nominated him dictator by his own authority. Having exerciſed this dignity with moderation, he changed it for that of conſul. He then purſued Pompey into Greece, and landed with five legions in Chaonia: but the deſtruction of the greateſt part of his fleet by the ſtronger ſquadron of Pompey, and the formidable force of his antagoniſt, induced him to propoſe terms of accommodation, which, though apparently reaſonable, were diſregarded. Anxious to effect a junction with that diviſion of the army which was commanded by Antony, he made an attempt, the temerity of which has incurred cenſure. Diſguiſed like a ſlave he embarked on board a fiſherman's bark for the purpoſe of croſſing over into Italy; the veſſel, however, after ſtruggling with contrary winds, was obliged to return, notwithſtanding the earneſtneſs with which Cæſar urged the crew to riſque the dangers of the voyage. It was on this occaſion that he is ſaid to have diſcovered himſelf to the terrified maſter, and to bid him diſmiſs his fears, as "he carried Cæſar and his fortune." This exploit it related by Plutarch, and poetically deſcribed by Lucan; but Cæſar himſelf takes no notice of it in his Commentaries. Having received the expected ſuccours of Antony, he followed Pompey to Dyrrachium, and determined to inveſt the town, together with Pompey's camp. In this ſiege his troops encountered a variety of hardſhips, which, however, their attachment to their leader induced them to endure with heroic patience. Pompey, reduced to the want of forage, and diſdaining to be cooped up by his enemy in ſuch a nook of land, determined to break through the barrier, and at length ſucceeded. Cæſar, mortified by his eſcape, retired to Macedonia, whither Pompey followed him; and on the plains of Pharſalia the great conteſt between theſe two commanders was decided, B. C. 48. The army of Pompey was totally routed; and Cæſar equally diſtinguiſhed himſelf by his valour and conduct in the battle, and by his magnanimity and clemency after the victory. He diſmiſſed the Roman citizens who were made priſoners; and burned, without peruſing them, the letters which were contained in Pompey's cabinet. Aſſiduous and active in purſuing the advantage he had thus gained, he left the plains of Pharſalia on the third day after the battle, and with his cavalry purſued Pompey. Croſſing into Aſia, and receiving on his paſſage the ſubmiſſion of a ſuperior fleet of Pompey which he fell in with, he haſtened to Rhodes, and embarked for Egypt.

At Alexandria he was informed of Pompey's murder; and the head of his rival, wrapped up in a veil, was preſented to him as a token of his final ſucceſs. He turned his eyes from viewing the bloody ſpectacle, and reflecting on the fate of this eminent perſonage, once his friend and his kinſman, ſhed tears on the occaſion; and diſmiſſing the meſſenger with expreſſions of diſpleaſure, ordered the head to be buried with due ſolemnity. As a farther tribute of reſpect for his deceaſed rival, he ſet at liberty all his friends who had been taken on the inhoſpitable ſhore of Egypt, and impriſoned by order of the miniſters of king Ptolemy. At Alexandria he took up his reſidence in the royal palace; but by exacting with rigour a ſum of money, pretended to be due to the Roman people for their ſervices in reſtoring to the throne Ptolemy Auletes, father of the preſent minor king, and alſo by undertaking to reconcile young Ptolemy with his ſiſter Cleopatra, who, by the will of Auletes, was to have reigned jointly with her brother, but who had been expelled the kingdom, he exerciſed an authority which offended the Alexandrians. Accordingly they beſieged him in his palace, and thus commenced the *Alexandrian war*, in which Cæſar failed to acquit himſelf either with prudence or juſtice. In this war part of the famous ALEXANDRIAN *library* was burnt in conſequence of a conflagration of ſome ſhips of the Alexandrian fleet. Cæſar, who had poſſeſſion of Ptolemy's perſon, was at length ſo hardly puſhed as to be obliged to ſurrender him in order to obtain a ceſſation of hoſtilities; but he was relieved by Mithridates, king of Pergamus. Ptolemy, however, continued the war, till he was defeated in two actions, and loſt his life in the Nile by attempting to make his eſcape. In conſequence of this event Cæſar ſettled the affairs of Egypt, by conferring the crown jointly on Cleopatra and a younger brother of Ptolemy. Faſcinated by the allurements of this enchanting woman, by whom he had a ſon, he remained in Egypt in a ſtate of inactivity, till he was called away by the progreſs of Pharnaces, ſon of Mithridates the Great, who was expelling the Romans from Aſia Minor.

When the news of Pompey's death reached Rome, the ſenate and people concurred in accumulating honours and prerogatives on Cæſar, the only ſurviving maſter of the empire. He was proclaimed conſul for five enſuing years, made tribune of the people, and created dictator for a whole year. Having defeated Pharnaces in Aſia, whom he purſued with a celerity, emphatically expreſſed in a laconic epiſtle to a friend, "Veni, vidi, vici," *I came, I ſaw, I conquered;* and ſettled the affairs of this province, he returned with only one legion through Greece to Rome, and by the moderation and placability which he exerciſed on this occaſion, diſſipated the fears of the vanquiſhed party, and ſecured the ſucceſs of his uſurpation without ſhedding one drop of blood. His views were next directed towards Africa, where the remains of Pompey's party maintained a formidable ſtrength under Cato, Scipio, and other renowned leaders; but whilſt he was preparing for his expedition into this country, a mutiny broke out in his favourite tenth legion, which afforded occaſion for a diſplay of his diſtinguiſhed talents as a commander. Having ſummoned them to the Campus Martius with no other arms beſides their ſwords, he required them to ſtate the grounds of their complaints. After ſome pauſe, occaſioned by the awe of his preſence, they began tumultuouſly to demand their diſcharge, and the rewards to which they were entitled. "Your demands," ſaid he, "are juſt; you ſhall have your diſcharge. Nor ſhall you be deprived of your rewards, as ſoon as I ſhall have ſubdued the reſt of my enemies. Go then, *citizens (quirites,)* return to your houſes and families." Grieved and mortified at being addreſſed with an appellation, which implied that they were no longer *ſoldiers*, they made a freſh tender of their ſervices, and ſupplicated the honour of being ſtill the companions of his victories. After ſome ſuſpence, and a ſuitable ſpeech, he pronounced their pardon, and again addreſſed them as *fellow-ſoldiers*. This legion, from this time, uniformly diſtinguiſhed itſelf by the ardour of its attachment to him. The *African war* commenced in the year B.C. 46, and was for ſome time attended with dubious ſucceſs on the part of Cæſar. However, by the celerity of his operations, he completely defeated the armies of Scipio, Labienus, and Juba; but the town of Utica was ſtill defended by Cato and his "little ſenate." This true patriot, perceiving that reſiſtance was ineffectual, ſecured his own freedom by a voluntary death. When Cæſar had ſettled the government of Africa, and iſſued orders for the re-erection of Carthage, he returned in triumph to Rome, and was received by the ſenate and people with unbounded adulation. To the dictatorſhip, extended to ten years, was added the cenſorial office. A double guard was aſſigned him, and his perſon was declared ſacred and inviolable. A thankſgiving of 40 ſucceſſive days, and four diſtinct triumphs, were decreed for his victories. His triumphs over Gaul, Egypt, king Pharnaces, and Juba, were conducted with ſingular ſplendour; he treated the people with ſhows, feaſts, and donatives, and conferred ample rewards on his ſoldiers. He alſo directed his attention to the reformation of the government, and enacted ſeveral ſalutary laws; but he reſerved to himſelf the nomination to all offices and employments. At this time he availed himſelf of the aſſiſtance of Soſigenes, and other men of ſcience, in the correction of the calendar (which ſee), and in the eſtabliſhment of the "Julian year."

Whilſt Cæſar was thus employed at home, the two ſons of Pompey were collecting a conſiderable force in Spain, and his preſence was neceſſary to reſtrain their progreſs. Accordingly, in his fourth conſulſhip he departed for the *Spaniſh war*, and having reduced ſeveral places, he marched to the plains of Munda, where the elder Pompey was encamped. Notwithſtanding the ſuperiority of the enemy, he advanced to the attack; and in the battle which enſued, contended for a long time, as he himſelf acknowledges, not for victory, but for life. So deſperate were his circumſtances, that, at one period of the conflict, he thought of killing himſelf; but recovering his ſelf-poſſeſſion, he exerted himſelf with ſuch valour as to turn the fortune of the day, and in the event of the conteſt to annihilate the relics of Roman liberty. After having completed the reduction of Spain, he returned to Rome and received new honours. The dictatorſhip was eſtabliſhed for life: and the title of "Imperator," as head of the empire, and denoting the higheſt monarchical rank, was conferred upon him, and from him it was tranſmitted through his ſucceſſors. Notwithſtanding all theſe acceſſions of rank and honour, Cæſar retained the affable manners of the firſt citizen of the republic, and ſtudied to ingratiate himſelf with the nobles and people. He pleaſed the latter by diſmiſſing his guards, reſtoring the ſtatues of their former favourite, Pompey, and treating them with ſhows and largeſſes; and he ſecured the attachment of the nobles, by the multiplication of offices of dignity and profit. However, he offended the ſenators, by increaſing their number from 300 to 900, and by admitting ſeveral perſons of low origin to this honourable claſs. The Romans, who entertained an inveterate prejudice againſt the name of *king*, were further offended by Antony's offering to Cæſar a royal diadem; for though he refuſed the gift, he was ſuſpected of being privy to the deſign. See Antony. It has been ſuggeſted, indeed, that as Cæſar had formed extravagant ſchemes of conqueſt, comprehending an expedition againſt the Parthians, Hyrcanians, Scythians, and Germans, and was emulous of imitating the exploits of Alexander, he and his friends had imagined that the title of king would be ſerviceable to him in the execution of theſe grand and extenſive deſigns, and command reverence among remote and barbarous nations. This and a variety of other circumſtances contributed to excite envy, jealouſy, and reſentment in the minds of ſeveral of the firſt men of Rome; and to concur, with ſome remains of an attachment to liberty, in producing a conſpiracy againſt Cæſar's life. Cæſar himſelf was warned of it by his friends; intimations had been circulated, for ſome time, of the perſons concerned in it, and of the time of its execution: and ſo fully poſſeſſed of the reality of the danger was Calpurnia, Cæſar's wife, that ſhe earneſtly urged him not to quit his houſe on the ides of March, the day appointed for the meeting of the ſenate. In compliance with her intreaties, he determined to remain at home. But Decimus Brutus repreſenting to him the importance of the matters which were to be propoſed in the ſenate, diverted his purpoſe, and they ſet out together. In their way thither, a perſon named Artemidorus put into Cæſar's hand a paper, containing a diſcovery of the whole plot; but though he was deſired to read it, he was prevented by the crowd which ſurrounded him. On his arrival in the hall of the ſenate, a number of the conſpirators beſet him, under the pretext of uniting their ſupplications with thoſe of Metellus Cimber, on behalf of his baniſhed brother: at this inſtant Cimber gave the ſignal, by taking hold of his robe, and pulling it from his ſhoulders, upon which Caſca ſtabbed him in the neck. The enraged Caſſius wounded him deeply in the head; and many others concurred in ſtabbing him on all ſides. Till Brutus appeared, he is ſaid to have reſiſted his aſſaſſins; but upon the ſight of the dagger aimed at him by Brutus, he exclaimed, "What! my ſon Brutus too!" and covering his face with his robe, fell, pierced with 23 wounds, at the pedeſtal of Pompey's ſtatue. Such was the cataſtrophe that terminated Cæſar's career, in the 56th year of his age, March 15th, A.U.C. 710. B.C. 44. His death was amply revenged, and his memory was honoured among the tutelary deities of his country; as he left no direct lineage, his adopted heir was the grandſon of his ſiſter Julia. See Augustus.

The perſon of Cæſar was tall, ſlender, and fair, and his countenance was ſenſible and expreſſive. To the delicacy of his form, his firſt character, which was that of a man of pleaſure and gallantry, ſeems to have been better adapted than his later occupation as a warrior. To this purpoſe Cicero ſays of him, "I diſcovered in all his enterpriſes, and in his whole conduct, a plan continually purſued for raiſing himſelf to the tyranny. But when I ſaw him ſo ſoft in his dreſs and manner of living, with effeminate geſtures, and his hair in ſuch nice order, I could not believe that ſuch a man was capable of forming and executing the deſign of ſubverting the Roman commonwealth." But he poſſeſſed, however, a variety of talents, which rendered him capable of attaining to diſtinguiſhed excellence in any purſuits, to which he choſe to devote his time and attention. In the department of oratory, if he had reſtricted himſelf to this object, he might have rivalled Cicero; and his knowledge of other branches of literature and ſcience enabled him to publiſh works on grammar, aſtronomy, religious polity, hiſtory, and poetry. But of his writings, none are extant beſides ſome "Epiſtles" preſerved among thoſe of Cicero, and his "Commentaries on the Gallic and Civil Wars." The latter is reckoned a model of the plain ſtyle, and is highly valuable as a repoſitory of facts, and as a directory in the uſe of the Latin language. Aſinius Pollio, at a period when the events which it records were recent, queſtioned its accuracy and veracity; and it is not improbable that the writer might have accommodated the detail of facts to the advancement of his own reputation. We have various editions of this popular work, the beſt of which are the "Variorum," by Elzevir, 1661; "Grævius's," Amſt. 1697; "Davis's," Camb. 1727; "Clarke's," fol. Lond. 1712; "Oudendorp's," L. Bat. 1737; "Barbou's," Paris, 1755.

In the exerciſe of his talents, Cæſar poſſeſſed ſuch verſatility of application, and ſuch a facility of directing his attention to different ſubjects, that he is ſaid to have dictated diſpatches to three ſecretaries at once. But whatever excellence he might poſſeſs as an orator or general ſcholar, his ruling paſſion was "ambition;" and to the gratification of this he devoted, in the maturer years of his life, all his mental and corporeal faculties. The influence of this paſſion marked and diſcriminated his character; and whilſt it exhibits him to view as a ſucceſsful warrior and uſeful legiſlator, poſſeſſing many qualities, and performing many ſervices, which entitle him to admiration and reſpect, it throws a ſhade over his moſt illuſtrious talents and actions, and excites an abhorrence of uſurpation and tyranny. "Without pretending to palliate the exceſſes of his youth, or to juſtify the ſchemes of his ambition, he was," ſays one of his biographers, "one of the moſt accompliſhed heroes that ever lived. With the moſt ſhining talents for war and legiſlation, he poſſeſſed a liberality of ſpirit, an elegance of taſte and manners, a generoſity of heart, a greatneſs of mind, and an humanity of diſpoſition, which diſtinguiſhed him from all the other great men of that republic, who were generally cruel, ferocious, and implacable." "Julius Cæſar," as the ſame writer proceeds, "is accuſed of having overthrown the liberties of his country. But what liberty did it enjoy before he appeared on the ſtage, while Rome was deſolated by the civil butcheries of Marius and Sylla? and what liberty did ſhe retrieve, when Cæſar, the ſuppoſed obſtacle, was removed? The truth is, the Romans were become ſo profligate, vicious, and venal, and ſuch univerſal corruption of morals prevailed, that they neither deſerved to enjoy, nor were they capable of reliſhing, the bleſſings of genuine liberty; and Cæſar was the only perſon, when living, who could reſtore peace, order, and ſecurity, give conſiſtency to their government, and ſtability to their empire." "He was born," ſays another writer, "to command mankind, if great qualities were alone ſufficient, and ſuperior to right. Had his birth or a regular election placed him on the throne, he would have been an example to be imitated by all ſovereigns. But his private conduct would be a very bad model; his whole life being a continued ſcene of rapine and extortion, luxury, and profuſion, and a devotedneſs to all kinds of ſcandalous debaucheries." Sueton. Cæſ. Plutarch, C. Cæſar, oper. t. i. p. 707, &c. Cæſar's Comment. Anc. Un. Hiſt. vol. xi. Rollin's Rom. Hiſt. vols. viii. ix.

Cæſar, in *Entomology*, a ſpecies of Musca, deſcribed by

Linnæus as being of a ſhining green, with black legs. This is a common European inſect.

Cæſar *Auguſta*, in *Ancient Geography*, a town of Hither Spain, ſeated on the river Iberus, formerly called Salduba, and which afterwards became a colony. Auguſtus gave it to the veteran ſoldiers of his army, after the war of the Cantabri, whence it obtained its name, the epithet of *immunis*, and the right of coining money; now *Saragoſſa*.

CÆSAREA, a name given to ſeveral ancient cities. There were two cities in Paleſtine of this name, viz. *Cæſarea-Paniæ* or *Cæſarea-Philippi*, and *Cæſarea-Stratonis*. The former was built by Philip the tetrarch, ſon of Herod the Great, and made the place of his reſidence, as it was conveniently ſituated between Ituræa and Trachonitis. Luke, iii. 1. He built it, ſays Joſephus, (Antiq. l. 18. c. 3. l. 20. c. 8.) at Paneas, by the ſprings of Jordan, and called it Cæſarea-Philippi, and Nerodiada in honour of Nero. It was ſeated at the ſprings of Jordan the Leſs, not far from Libanus, in the Midland Phœnicia, ſays Ptolemy, and was a Decapolitan city called Cæſarea Panias, or Sub-Panio, from the name of the mountain Panius, mentioned by Joſephus and Euſebius, under which it lies. It is mentioned Matth. xvi. 13. Mark, viii. 27. and was firſt called Lais or Laſhem, Joſh. xviii. 7; and when ſubdued by the Danites, Dan, ib. v. 29. The latter, *Cæſarea-Stratonis*, or the town of Strato, was the metropolis of Paleſtine, after its re-union to the Roman empire, and the ſeat of the Roman proconſul. As it was a mart-town, with a very incommodious haven, Herod the Great built on the ſite of it a large city, with many ſtately marble buildings, a theatre of ſtone, a capacious amphitheatre, and an admirable haven, with marble edifices and towers. Herod alſo conſtructed, on an eminence, a beautiful and magnificent temple of Auguſtus, and placed there a coloſſal ſtatue of this prince, on the model of the ſtatue of Jupiter Olympius; and a ſtatue of the city of Rome, equal to that of Juno at Argos. Herod, according to Joſephus, called the port Sebaſte, and the city Cæſarea, in honour of Cæſar Auguſtus, which he annexed to the province of Syria. He alſo eſtabliſhed quinquennial games, and diſtributed a great number of prizes at the firſt celebration of them, A.U.C. 743. The city was afterwards given to Agrippa, the grandſon of Herod the Great, by the emperor Claudius. Judæa and the city of Cæſarea were re-united to the Roman empire, at the death of king Agrippa, A.D. 44; nor were they ſeparated till the invaſion of the Arabs, in the 7th century. Cæſarea was ſituated between Doron and Joppa, 35 miles from Jeruſalem, and was inhabited partly by the Jews, who had their ſchools there, but chiefly by the Greeks or Syrians, betwixt whom there were feuds concerning equal privileges; ſo that the Cæſareans killed a great number of Jews, when Florus was procurator of Judæa. In this city Peter converted Cornelius and his kinſmen. Acts, x. Here lived Philip the evangeliſt, Acts, xxi. 8; and here Paul defended himſelf againſt the Jews, and their orator Tertullus. Acts, xxiv.

Cæſarea, in more ancient times called Mazaca, and afterwards Euſebia, and denominated Cæſarea by Tiberius, in honour of Auguſtus, was the metropolis of Cappadocia, and the reſidence of its kings. It continued in a flouriſhing ſtate under the Greek emperors. When it was beſieged by Sapor, king of Perſia, about A. D. 260, it was ſuppoſed to contain 400,000 inhabitants. At this time Demoſthenes commanded in the place; and when the city was betrayed by the perfidy of a phyſician, he cut his way through the Perſians, who had been ordered to exert their utmoſt diligence for taking him alive, whilſt many of his fellow-citizens were involved in a general maſſacre. Sapor is accuſed of treating his priſoners with wanton and unrelenting cruelty. Deep vallies were filled with the ſlain; and crowds of priſoners were driven to water like beaſts, and many periſhed for want of food. Zonaras, l. xii. p. 630. After the reign of Heraclius, when the empire was divided into different military departments, Cappadocia, together with Cæſarea, its capital, which had ſurrendered to the Saracens, was comprized in the department of Armenia; but it was, at a period not aſcertained in hiſtory, ruined by an earthquake. In the 13th century, it was rebuilt about ¼ of a league more to the north than the old city, by a ſultan of the Selgioucide race. It is now called Kaiſarieh and Keſaria, and is a city of ſome note. It is the ſtage of all the caravans of the eaſt, which here diſperſe themſelves to their reſpective cities. The bazars are handſome and well ſtored, and the inhabitants in a conſiderable degree poliſhed. It was the ſee of St. Baſil, and its archbiſhop holds the firſt rank among the prelates who are under the patriarch of Conſtantinople.

Cæſarea, is alſo a town of Armenia Minor.—Alſo, a town of Aſia Minor, in Bithynia, according to Ptolemy, who places it between the river Rhyndacus and Mount Olympus, near the ſea.—Alſo, a large and famous town of Africa, in Mauritania, which was formerly a royal city, and had a magnificent port on the Mediterranean. It gave the appellation Cæſarienſis to one of the diſtricts into which Claudius divided Mauritania, and it was anciently called *Jol*. It was the reſidence of king Juba, who enlarged and embelliſhed it, and called it Cæſarea in honour of Auguſtus. Claudius made it a Roman colony. It has been ruined for many ages. It was reduced to aſhes A. D. 373, by Firmus, who aſſumed the title of king among the Moors, but who was made to ſubmit by Theodoſius, ſent to Africa by Valentinian. When it was juſt recovering itſelf, it fell under the power of the Vandals, who burnt it. After the deſtruction of the Vandal government in Africa, it remained in a tranquil ſtate for more than a century under the Greek emperors. This city was encompaſſed by mountains to the ſouth, eaſt, and weſt, and Procopius ſays, that there was no acceſs to it but by the ſea. According to Mela, it was ſituated at the confluence of the rivers Mulucha and Ampſaga. Sanſon, and other geographers, place Julia Cæſarea at Tniſs or Tennis; but Shaw, (Travels, &c. p. 18.) adduces ſeveral arguments to prove, that it is the preſent *Sherſhell*, which ſee.—*Cæſarea* is alſo a name ſaid to have been formerly given to the iſland of *Jerſey*, which ſee.—*Cæſarea* was alſo a town of Italy, in Ciſalpine Gaul, not far from Ravenna.

CÆSAREAN Section, in *Midwifery*, an operation by which a fœtus is extracted from the uterus of the mother, through a wound, made for the purpoſe, in the abdomen. The term, cæſarean, is ſaid to be derived from the operation "cæſo matris utero;" and Pliny even deduces the title of Cæſar, given to the Roman emperors, from one of them having been brought into the world by means of it. Whether this was the caſe, or not, it ſeems not improbable, from the prevalence of the opinion, that the operation had been performed prior to his time, although no account of it is to be found in the works of Hippocrates, Celſus, Paulus Ægineta, or Albucaſis, who all of them treat largely on the mode of aſſiſting in difficult parturition. The only method recommended by theſe writers, for extracting the fœtus when it was too large to paſs entire by the natural paſſage, was to diminiſh its bulk with ſcalpels, or other cutting inſtruments, and then to draw it away with hooks, or crotchets; a method, in fact, which is now followed, but with inſtruments more artificially conſtructed, and thence leſs likely to injure the women, than the more rude ones contrived by the ancients.

The earlieſt account we find of the cæſarean ſection in any medical work, is in the Chirurgia Guidonis de Cauliaci, publiſhed about the middle of the fourteenth century; but the author only ſpeaks of it as reſorted to after the death of the woman, as was practiſed, he ſays, on the birth of Julius Cæſar. "Si autem contingeret mulierem ipſam eſſe mortuam; et ſuſpicaveris quod fœtus eſſet vivus; quia vetat lex regia mulierem prægnantem humari, quonſque fœtus vixerit; tenendo mulieris os, et matricam apertam, *ut volunt mulieres*, aperiatur mulier ſecundum longitudinem, cum raſorio, in latere ſiniſtro; quia pars illa eſt magis libera quam dextra propter hepar; et digitis interpoſitis extrahant fœtum. Ita enim extractus fuit Julius Cæſar; ut in geſtis legitur Romanorum." vide Cap. de extractione fœtus. Vigo, who was born towards the end of the 15th century, in the ſhort chapter he gives on difficult birth, takes no notice of this mode of delivery; and Parè, who greatly improved the practice of midwifery, thinks the operation only allowable on women who die undelivered. He had heard, he ſays, not without aſtoniſhment, of women who had been more than once ſubjected to the cæſarean ſection, it not being practicable to deliver them by any other means; but he conſidered the operation as much too dangerous to be adopted, "cæterum non poſſum ſatis mirari eos qui ſibi viſas mulieres affirmant, quibus non ſemel novacula abdomen cum ſubjecto utero reſciſſum ſit ad fœtum, nunquam alioqui proditurum, extrahendum. Id enim, ſalva matre, fieri poſſe mihi perſuadere nunquam potui," &c. "De Hominis Generatione," cap. 31. But Rouſſet, who was contemporary with Parè, having collected accounts of a number of caſes in which the operation was ſaid to have been ſucceſsfully performed, publiſhed in 1581, 8vo. "Traité nouveau de l'Hyſterotomotokie, ou Enfantement ceſarien, qui eſt l'extraction de l'enfant par inciſion laterale du ventre et de la matrice de la femme groſſe, ne pouvent autrement accoucher; et ce ſans prejudicier a la vie de l'un et de l'autre, ni empecher la ſecondite naturelle par apres." But though Rouſſet ſpeaks with great confidence of the ſafety of the operation, and is warm in its recommendation, it does not appear that he had ever ſeen it performed, or that more than one of the ſix perſons, whoſe caſes are related by him, were known to him. The book, however, ſoon became popular, and being ſome years after, viz. in 1601, tranſlated into Latin by Caſpar Bauhine, with additional caſes and obſervations, it was quickly circulated over Europe. From that time, the operation began to acquire a certain degree of vogue, and to be reſorted to in caſes of extreme difficulty, particularly on the continent, where it is ſaid to have been not unfrequently performed with complete ſucceſs. Not ſo in this country. In five caſes in which it has been performed at Edinburgh, three of the children were extracted through the aperture alive, but the women all died. In England, where the operation has been performed ten times, one of the women only recovered. This gives little encouragement for repeating the trials here. But as this almoſt uniform fatality may be in part attributed to the extremely debilitated ſtate of the women, who had been in labour ſeveral days before the operation was determined on, it has been obſerved, and with apparent reaſon, that if it had been performed earlier, before the ſtrength of the women had been exhauſted, and a feveriſh indiſpoſition induced, or before the bladder and other ſoft parts had been injured by diſtenſion and preſſure, a more favourable termination might have been expected; as to that circumſtance, viz. a more ſpeedy, or prompt determination, may be attributed the ſuperior ſucceſs with which the operation has been performed on the continent.

Having given this ſketch of the hiſtory of the cæſarean ſection, it remains to ſtate the cauſes rendering it neceſſary, and to deſcribe the manner of performing the operation.

Whenever any inſurmountable impediment exiſts, rendering it impracticable to bring the child through the natural paſſage, recourſe muſt be had to the cæſarean ſection, or the woman, and child, muſt inevitably periſh.

The moſt common impediment is, ſuch a deformed and altered ſhape of the bones conſtituting the pelvis, as to leave too ſmall a ſpace for admitting the fingers of the accoucheur to paſs between them; diſabling him from introducing and directing the neceſſary inſtruments for opening and leſſening the head, or other part of the child that may happen to preſent, or lie over the orifice of the uterus.

Abroad, particularly in France, the cæſarean ſection has been performed where no ſuch impediment exiſted, or, at the leaſt, not to the degree that would be required in this country; as is evident, by the accounts publiſhed of women, who after being ſubjected to the operation, have borne living children by the natural paſſage, which could not happen, if the pelvis was conſiderably diſtorted, or miſhapen.

Caſes requiring the cæſarean ſection, are very rare in this country; that is, there are very few women whoſe pelves are ſo diſtorted as not to allow a paſſage for the fingers of the accoucheur to conduct the neceſſary inſtruments for opening the head of the fœtus ſufficiently to allow its contents to be ſqueezed out, and its bones to collapſe ſo far as to allow the operator to fix a hook or crotchet, with which it may be gradually drawn down, and extracted. Through how very narrow a ſpace this may be done, we have a remarkable inſtance related in Dr. Oſborne's "Treatiſe on Laborious Parturition."

Authors mention other cauſes of impediment to the birth of the child, as coaleſcence of the os uteri, or of the ſides of the vagina; or large tumours filling up that paſſage; but theſe may be all removed by operations much eaſier and leſs hazardous than the cæſarean ſection.

Whenever on repeated examination of a woman in labour, the accoucheur finds the pelvis diſtorted to the degree deſcribed above, he ſhould appriſe the huſband of the dangerous ſtate of the woman, and deſire the aſſiſtance of one or two of the moſt experienced perſons in the profeſſion, and if on a conſultation it ſhould appear that it is impoſſible to bring the child by the natural paſſage, the huſband ſhould be made acquainted with the nature of the impediment, and informed there remains no hope of preſerving the life of the woman and child, but by opening the abdomen of the woman, and extracting the child through the wound. At the ſame time acquainting him, that the operation, though hazardous, is not neceſſarily fatal, many women who ſubmitted to it having recovered. That the hope of a favourable termination depends on its being performed early, before fever comes on, or any material injury is done to the uterus or neighbouring parts.

If the huſband ſhould be ſatisfied of the neceſſity of the operation, the woman ſhould then be appriſed of her ſituation, in the moſt cautious manner, and having obtained her conſent, a glyſter is to be thrown up to evacuate the contents of the bowels, and the bladder emptied through a catheter, and a few drops of the tincture of opium given to quiet pain as much as poſſible, prior to the operation, the manner of performing which, is thus deſcribed by Mr. Thompſon, late ſurgeon to the London Hoſpital. "Medical Obſervations and Inquiries," vol. 4. p. 271.

An inciſion is to be made on the right or left ſide of the navel, whichever happens to be moſt prominent, ſix inches in length; the middle of the inciſion to be about level with the navel, from which it ſhould be diſtant a hand's breadth. Firſt cut through the ſkin, then through the tendinous expanſion of the abdominal muſcles, and the peritonæum. The uterus being now brought to view, a ſmall opening muſt be made, to enable the operator to paſs his forefinger as a guide for the knife, in extending it to the ſize of the external wound; an aſſiſtant muſt then introduce his hand, and bring away the child, and the placenta. This being effected, an aſſiſtant muſt keep in the bowels, which would otherwiſe protrude, while the operator makes the gaſtroraphy, or ſuture of the belly. Proper bandages are then to be put on, and the woman put to bed. The cure to be conducted in the ſame manner as after other operations. The ſubject of the cæſarian ſection is treated in an ample and ingenious manner by Dr. Denman in his "Introduction to Midwifery," and by Dr. John Hull, phyſician at Mancheſter, in his "Defence of the Cæſarian Operation," 8vo. 1798.

CÆSARIA, *river*, in *Geography*. See COHANZY.

CÆSARIANA, in *Ancient Geography*, a place of Italy, on the Appian way, ſituate, according to the Itinerary of Antonine, in the route from Rome to Columna, 36 miles from Nerulum, in Lucania.—Alſo, a place of Pannonia, which, in Antonine's Itinerary, is ſituate on the route from Sabaria to Acincum.

CÆSARIANS, or CÆSARIENSES, in *Antiquity*, were miniſters or officials of the procurator *Cæſaris*, to whom belonged the keeping of the fiſcal accounts, and taking poſſeſſion of effects devolving or eſcheating to the emperor. Theſe were alſo called *catholiciani*. From the appellation *Cæſarianus* ſome deduce the modern word ſergeant. See SERGEANT.

CÆSARODUNUM, in *Ancient Geography*, a town of Gaul, aſſigned by Ptolemy to the Turones; now *Tours*, which ſee.

CÆSAROMAGUS, a town of Gaul, which, according to Ptolemy, was the capital of the Bellovaci: now *Beauvais*, which ſee.—Alſo, a ſtation in the 5th route of Antonine, 28 miles from London; the poſition of which cannot now be exactly aſcertained; but by the diſtance from London, and the direction of this route, it is ſuppoſed to have been at, or near Chelmsford.

CÆSENA, or CESENA, a town of Italy, in Gallia Ciſpadana, on this ſide of the Eridanus, with reſpect to Rome, according to Strabo and Pliny.

CÆSIA *Sylva*, the Cæſian foreſt, was part of the Hercynian, placed by Cluverius, partly in the duchy of Cleves, and partly in Weſtphalia, between Weſel and Koefold. Germanicus traverſed this foreſt in his march to attack the Marſi, whom he found in a defenceleſs ſtate, and attacked with great ſlaughter, A. D. 15. Tacitus.

CÆSIAS, or Καικιας, in *Meteorology*, denotes the north-eaſt or N. E. by E. wind; called in the Mediterranean, *vento Græco*, or *Greco levante*. Pliny calls this wind Helleſpontias, as blowing from the Helleſpont. See EUROCLYDON.

CÆSTUS, or CESTUS, a large leathern gantlet, or glove, made of ſtraps of leather, and plated with braſs, lead, or iron, withinſide, uſed in the combats, or exerciſes of the ancient athletæ, to ſtrengthen the hands of the combatants, and to add violence to their blows. It was called *cæſtus, à cædendo*, from *cædo, to ſtrike*, or *beat*.

The cæſtus originally conſiſted of many thongs of leather, or raw hides of bulls, wound about the hand and arm up to the elbow, and ſeems to have been invented, as well for a ſafe-guard to thoſe parts that were moſt expoſed in the firſt fury of the combat, as for an offenſive weapon; though, when it was lined with plates of lead or iron, as it ſometimes was, according to Virgil, (Æn. v.) it ſeems to have been intended chiefly for the latter purpoſe. It is obſervable, however, that the Greek poets, who have given us a deſcription of the cæſtus, have not mentioned plates of lead or iron. By thus binding up the hands of the combatants with thongs of leather, they might alſo deſign to prevent their laying hold of each other, or with their fingers and nails ripping open the belly; a circumſtance, which occurred in the Nemæan games, and which gave occaſion for bringing the ſtraps of the cæſtus over the fingers, and faſtening them upon the wriſt; whereas, before this accident, they were tied in the palm, or hollow of the hand. See Pauſanias, l. viii. c. 40. This author applies the epithet μειλιχος, or ſoft, to the ancient cæſtus, probably, becauſe it was compoſed of raw hides. But it is not unlikely, that as the Grecians began to refine upon the gymnaſtic exerciſes, and the ſcience of the athletæ became a kind of profeſſion, the cæſtus ſhould from time to time receive ſeveral additions: and, that at length, it ſhould be improved by the Romans, who delighted in bloody ſpectacles, into that terrible weapon deſcribed by Virgil. This conjecture will account for the difference obſervable between that in Virgil, and thoſe deſcribed by the Greek poets. The combat of the cæſtus was very ancient, and is ſaid to have been invented by Amycus, king of the Bebrycians, who was contemporary with the Argonauts, as we are informed by Clemens of Alexandria, Stromat. I. It was revived in the 23d olympiad, B. C. 688. But we are informed by Plutarch, (in Alex.) that Alexander never admitted either the cæſtus or the pancratium among thoſe games which he exhibited during his war in Aſia. Lycurgus alſo baniſhed theſe exerciſes from Sparta, becauſe he would not allow the people to accuſtom themſelves to yield the victory to thoſe with whom they contended, not even in ſport. Beſides, the combatants in the cæſtus fought after, and cheriſhed corpulence, or polyſarcia, (fleſhineſs) as the Greeks called it, as a ſort of covering and defence of their bones and muſcles againſt blows and buffets; but this mode of life was improper for a ſoldier; for, as Epaminondas obſerved to a fat fellow, whom for his bulk he turned out of the army, it would require three or four ſhields to cover and defend a belly that hindered a man from ſeeing his own knee. However, it was practiſed by the heroes of the Iliad, and it was one of the games exhibited by Æneas in honour of his father Anchiſes; and Amycus valued himſelf ſo much upon his ſuperiority in this combat, as to compel all ſtrangers who touched upon his coaſt, to take up the cæſtus, and make trial of his ſtrength and ſkill in the uſe of this rude inſtrument of death. See Weſt's diſſertation on the olympic games, prefixed to his "Odes of Pindar, &c." vol. iii. § 10.

CÆSULIA, in *Botany*, Willd. 1467. Rox. Cor. I. p. 64. Claſs and order, *ſyngeneſia æqualis*.

Eſſ. Ch. *Receptacle* chaffy; chaff involving the ſeeds. *Down* none. *Calyx* of three leaves.

Sp. 1. C. *axillaris*. "Leaves lanceolate, narrowed at the baſe, ſerrated, alternate. Perennial. *Stem* herbaceous, creeping; branches aſcending. *Flowers* axillary, ſeſſile, ſolitary. *Calyx* ſpreading; leaflets egg-ſhaped, veined, many-flowered. A native of the Eaſt Indies. 2. C. *radicans*. "Leaves lanceolate, narrowed at the ſummit, very entire, oppoſite." Perennial. *Stem* creeping, taking root at the knots. *Branches* aſcending, from half a foot to a foot long. *Leaves* on ſhort petioles; ſometimes, but rarely, with one or two teeth. *Flowers*, as well as the general habit of the plant, ſimilar to the preceding. A native of Guinea.

CÆSURA, in *Ancient Poetry*, is when, in the ſcanning of a verſe, a word is divided, ſo that one part ſeems cut off, and goes to a different foot from the reſt; e. gr.

Menti | *ri no* | *li : num* | *quam men* | *dacia proſunt.*

Where the ſyllables *ri*, *li*, *quam*, and *men* are *cæſures.*

Or, it denotes a certain and agreeable diviſion of the words, detween the feet of a verſe; whereby the laſt ſyllable of a word becomes the firſt of a foot: as in

Arma virumque cano, Trojæ qui primus ab oris

Where the ſyllables *no* and *jæ* are *cæſures.*

Cæsura, a *cut*, a *ſeparation*, a *breathing-place*, in *Vocal Muſic.* The Germans have applied this poetical term to muſic, with no great analogy, and the French are trying hard to naturalize and adopt it. In the ſupplement to the fol. edit. of the Encycl. M. Caſtillon has given it an article which in the new 4to. Encycl. Methodique, M. Framery has analyſed, and controverted in an able manner. The firſt muſical dictionary in which the term occurs, is that of Walther, which, though a ſmall octavo volume only, contains more definitions, explanations, biographical and hiſtorical articles, than all the dictionaries that have been publiſhed ſince 1732, when it firſt appeared in German. Nothing in Engliſh expreſſes ſo well what the Germans and French mean to inforce by the term *cæſura* in muſic, as the word *phraſeology*, which ſee. In vocal muſic, the meaſure of the verſe determines the phraſeology of the melody. In inſtrumental muſic, a ſymmetry of phraſe, to a certain degree, ſeems neceſſary, where either grace or energy is required. As to ſubject, the firſt two or three bars give the general caſt and character to the whole movement. This is more obvious in Haydn's beſt ſymphonies, ſometimes even through a ſeeming wildneſs and freedom, of fancy. If you loſe the firſt idea in the treble, you find it in the baſe, or ſubordinate parts, as too much ſymmetry in the upper part is apt to degenerate into monotony and dulneſs. An even number of bars, and cæſuræ at equal diſtances, however, ſeldom fail to intereſt and impreſs the hearer. Metaſtaſio's meaſures have ſuggeſted to compoſers, and rendered neceſſary, a greater variety of air, than the epic poetry of Italy, or any other country poſſeſſed before. Grace is often obtained by a ſucceſſion of dactyles and regular reſting places.

Vŏ ſŏlcāndŏ ŭn mār crŭdēlĕ——
Sĭ ŭſcă sĭ dīcĕ l'ămīcŏ dŏvē.—

See Phrase, Cadence, Rest, real or underſtood.

The cæſura might have its uſe in muſic if well conſidered and framed into rules; but we pretend not to invent new rules or laws in the arts, ſo much as to explain thoſe already in uſe, and eſtabliſhed by good authority and ſucceſsful examples.

Cæsure, in the *Modern Poetry*, denotes a reſt or pauſe towards the middle of a long Alexandrine verſe; by which the voice and pronunciation are aided, and the verſe as it were divided into two hemiſtichs. See Pause.

CÆTERIS *paribus*, a Latin term, in frequent uſe among mathematical, and phyſical writers.

The words literally ſignify, *other things being equal*; which expreſſes pretty nearly their meaning as a term. Thus, we ſay, the heavier the bullet, *cæteris paribus*, the greater the range; i. e. by how much the bullet is heavier, if the length and diameter of the piece, and the quantity and ſtrength of the powder, be the ſame, by ſo much will the utmoſt range or diſtance of a piece of ordnance be greater.

Thus alſo, in a phyſical way, we ſay, the velocity and quantity of blood circulating in a given time, through any ſection of an artery, will, *cæteris paribus*, be according to its diameter, and nearneſs to, or diſtance from the heart.

CÆTOBRIX, in *Ancient Geography*. See Cetobriga.

CAETSE, in *Geography*, an iſland in the Adriatic, or Venetian Sea, which affords anchorage for ſhipping.

CAFARA, a town of Portugal, in the province of Alentejo; 12 miles E. of Moura.

CAFARO, in *Biography*, a Neapolitan compoſer of great abilities, of the old ſchool, perhaps the beſt, in the eccleſiaſtical ſtyle, after Leo. He was living in 1774; and at that time was thought by many the beſt compoſer for the church in Naples. His ſtyle was nervous, yet not rude. In his eccleſiaſtical productions (ſays a French writer, before the revolution,) he proved that there is a ſtyle for religious rites capable of intereſting a devout audience, and redoubling fervour, inſtead of diverting their attention from ſacred concerns.

CAFARTUTHA, in *Ancient Geography*, a town of Aſia, in Meſopotamia; placed in the Nubian geography, between Dara and Alchabur.

CAFER, in *Entomology*, a ſpecies of Cimex, found in Africa, and deſcribed by Thunberg. This inſect is of a black colour, with a white band on the thorax: ferruginous wing-caſes, and four white ſpots. See Caffer.

Cafer, a ſpecies of Scarabæus, green, with the margin of the thorax and elytræ ſpotted with white. Fabricius. Found at the Cape of Good Hope.

Cafer, in *Ornithology*, a ſpecies of Merops, with grey plumage, a yellow ſpot near the anus, and very long tail. This is the grey bee-eater of Ethiopia.

Cafer, a ſpecies of Picus, brown above, beneath grape-coloured, dotted with black, the under part of the wings and the ſhafts of the wing-feathers, and thoſe of the tail vermilion-coloured. Found at the Cape of Good Hope. Gmelin.

CAFERISTAN, in *Geography*. See Kuttore.

CAFFA, in *Commerce*, cotton cloths painted with ſeveral colours, and of divers deſigns; they are manufactured in the Eaſt Indies, and ſold at Bengal. The length and breadth are not the ſame in all pieces.

Caffa, or *Kaffa*, in *Geography*, the ancient and modern *Theodoſia*, a ſea-port town of Crim Tartary, now called Taurida, is ſituated on the ſouth-eaſt ſide of the peninſula, and forms a harbour of the Euxine, or Black Sea. It was formerly the capital of the Crimea; and the Tartars diſtinguiſhed it by the name of Half Conſtantinople. The Genoeſe, when they attempted to acquire an independent trade with the Eaſt Indies, took poſſeſſion of it about A. D. 1226, maintained it for more than 200 years, and rendered it the ſeat of an extenſive and flouriſhing commerce. They adorned the port, ſtrengthened and augmented the fortifications, and embelliſhed the city with many ſtately edifices, the ruins of which are viſible even at this day. Having the dominion of the Black Sea, and thus moſt commodiouſly ſtationed for trade, they were furniſhed with the means of expenditure by the riches accruing from their commerce. But in the year 1475 they were deprived of this port by Mohammed the Great, after they had baſely aſſiſted in bringing the Turks into Europe, and in reducing Conſtantinople, againſt all the rules of true policy, as well as dictates of religion. After the Genoeſe were diſpoſſeſſed of the dominion of Caffa, they ſtill carried on, for a long time, as merchants, a very lucrative commerce with the inhabitants, who, by way of the Caſpian Sea, found means to conduct a conſiderable trade in ſpices, drugs, cotton, ſilk, and other Indian commodities. At length the Turks became jealous of the intercourſe of the Genoeſe in theſe parts, and abſolutely excluded them, as well as all other nations, from trading to, or even ſo much as entering into, the Black Sea. This excluſion, however, did not immediately terminate the commerce between Caffa and Genoa; for the Tartars were ſo well appriſed of the advantages derived from this commerce, that they proſecuted it for ſome time in their own veſſels; and carried the ſpices, and other Indian goods, which they received by caravans from Aſtracan, and which had been brought thither from the oppoſite ſide of the Caſpian Sea, to Genoa; but the Turks ſoon put an end to this kind of intercourſe, and thus ſecured themſelves from the fears of ſeeing a Chriſtian fleet in thoſe ſeas, at leaſt from Italy. Nevertheleſs, Caffa, notwithſtanding all the diſadvantages reſulting from its ſubjection to the Turkiſh government, continued to be a place of conſiderable trade. Sir John Chardin, who viſited it, A.D. 1672, relates, that during his reſidence of 40 days there, he ſaw more than 400 ſhips ſailing in and out of this port. He obſerved alſo ſeveral remains of Genoeſe magnificence. In 1774, Catherine II. obtained for Ruſſia the poſſeſſion of the ſtraits of Caffa, together with ſome other local and commercial advantages; and by the convention of 1783, the whole peninſula of the Crimea was added to the Ruſſian dominions, under the name of the province of Taurida, and the Turks having finally ceded their pretenſions to the empreſs, ſhe declared this a free port in her newly acquired territories, under the appellation of Theodoſia. Caffa was formerly one of the beſt built and richeſt places of its ſize in Europe. It ſtands at the foot of a ſmall hill upon the ſea-ſhore; the buildings extending north and ſouth, with long walls ſtretching on both ſides down to the ſea; ſo that from the port which is large, ſafe, and commodious, it exhibits a very agreeable appearance. On the ſouth ſide is a caſtle, which uſed to be the reſidence of the Turkiſh baſhaw. The number of houſes have been eſtimated at 5000 or 6000, and the inhabitants have been computed at 20,000. According to M. Peyſſonnel, (Commerce de la Mer Noire, tom. i. p. 15.) the number of inhabitants amounts to 80,000. The bay is capable of containing ſeveral hundred merchant ſhips; and the inhabitants are the richeſt, and drive the moſt extenſive trade in the Black Sea. The productions of Crim Tartary, exported from Caffa and the other towns of the peninſula reſorted to by the Greek and Armenian merchants, conſiſt chiefly in corn, wine, wool, fine black and grey lamb-ſkins, and ſalt. The imports are fine and coarſe linens, printed cottons, nankeen, Ruſſian leather, fine cloths, velvets, taffeties, furs, ropes, paper, ſalted fiſh, and caviare, tobacco leaves, copper and tin, hardware, gold and ſilver thread, beads, and corals, earthen wares, a coarſe ſort of porcelain, and glaſs ware, &c. N. lat. 45° 10′. E. long. 35° 20′.

Caffa, *ſtraits of*, the ancient Cimmerian Boſphorus, are the narrow paſſage, or ſound, which forms the communication between the Black Sea to the ſouth, and the ſea of Azof to the north. Near the northern entrance of theſe ſtraits are the fortreſſes of Kertſch and Yenikalé, which command the paſſage. They take their name from the port of Caffa. N. lat. 45° 18′. E. long. 35° 45′. See Boſphorus and Azof.

Caffa, a province or kingdom of Abyſſinia, adjoining to the kingdom of Narea, and ſituate on the ſouth of it. It is wholly mountainous, without any level ground. It is ſaid to be governed by a ſeparate prince, and to have been converted to Chriſtianity in the time of Melec Segued, ſome time after the converſion of Narea. The inhabitants of theſe lofty mountains are not ſo dark in their complexion as Neapolitans or Sicilians. It has been ſaid, that ſnow has been obſerved to lie on the mountains of Caffa, as well as on the high ridges called Dyre and Tegla; but the fact is diſcredited by Bruce; Travels, vol. ii. p. 313. About N. lat. 8°. and E. long. 35°. See Narea.

CAFFABA. See Kaffaba.

CAFFACA, Keffe-kil, in *Mineralogy*, or earth of Kaffa, (corruptly called Caffaca) is a very fine grained white tenacious clayey marl, dug in the Crimea, and formerly ſhipped from the port of Kaffa to Conſtantinople, in large quantities for the uſe of the Turkiſh women. Being mixed up with water to the conſiſtence of thick cream, it was rubbed by hand among the hair, which when waſhed again with water, was thus rendered perfectly clean and of a ſilky ſmoothneſs. For this purpoſe it was greatly preferable to ſoap, which, though it cleans the hair, is apt to diſcolour it, and render it harſh and brittle. When the Crimea was conquered by the Ruſſians, this branch of commerce was ſtopped, and is not likely to be reſumed. Conſtantinople being now ſupplied with a white clay from Aſia Minor, which is equally good with the earth of Kaffa. Pallas's Travels in the Crimea, vol. ii.

CAFFARELLI, (Gaetano, Majorano, *detto*) in *Biography*, was one of the greateſt ſingers that Italy ever produced. He came to England in 1738, the year after Farinelli's departure. He ſung in two of Handel's operas, *Faramond*, and *Aleſſandro Severo*. But though he afterwards acquired ſuch celebrity on the continent, he was not in high favour here. For though Farinelli, the laſt year of his performance in this country, had been neglected, no ſucceſſor would be liſtened to of inferior fame, or indeed talents; for Caffarelli was never in voice or in good humour, all the time he was in England. The ſeeds of caprice with which nature ſeems to have furniſhed him, began early in life to ſpring up, and in his riper years, and fame, grew to an amazing height: Many traits of his character were current in Italy, long after he had quitted the ſtage.

When Gizziello firſt ſung at Rome, his performance ſo far enchanted every hearer, that it became the general ſubject of converſation, which not only contributed to ſpread his fame through that city, but to extend it to the moſt remort parts of Italy; it is natural to ſuppoſe that the account of this new muſical phenomenon ſoon reached Naples, and equally natural to imagine that it was not heard with indifference in a place where ſo powerful a propenſity to muſical pleaſure prevails. Caffarelli, at this time in the zenith of his reputation, was ſo far piqued by curioſity, perhaps by jealouſy, that he took an opportunity, the firſt time he could be ſpared from the opera at Naples, to ride poſt all night, in order to hear that at Rome. He entered the pit, muffled up in a pellice, or fur-gown, unknown by any one there; and after he had heard Gizziello ſing a ſong, he cried out as loud as he poſſibly could, "bravo! braviſſimo! Gizziello, é Caffarelli che ti lo dice," 'tis Caffarelli who applauds—and, immediately quitting the theatre, he ſet out on his return to Naples the ſame night.

When at his beſt, Caffarelli was thought by many a ſuperior ſinger in ſome reſpects, to Farinelli: among theſe Porpora, who hated him for his inſolence, uſed to ſay, that he was the greateſt ſinger Italy had ever produced. At the marriage of the preſent king of Sardinia, then prince of Savoy, with the infanta of Spain, who had long been a ſcholar of Farinelli, it was with great difficulty that Caffarelli was prevailed on to go to Turin with the Aſtrua, to perform at the royal nuptials, in an opera which the king of Sardinia wiſhed to have as perfect as poſſible. But Caffarelli, who came with an ill-will, by order of the king of Naples, ſeemed but little diſpoſed to exert himſelf; declaring before-hand that he had loſt a book of cloſes on the road, and ſhould be able to do nothing. This was told to his Sardinian majeſty, who was much perplexed how to treat ſuch impertinence. Caffarelli was not his ſubject, and had been ſent by the king of Naples, out of compliment, on occaſion of the wedding. But the firſt night of performance, the prince of Savoy, in his nuptial dreſs, went behind the ſcenes, juſt before the opera begun, when entering into converſation with Caffarelli, he told him that he was glad to ſee him there, though the princeſs of Savoy thought it hardly poſſible that any one ſhould ſing in ſuch a manner as would give her pleaſure, after Farinelli. "Now, Caffarelli," ſays the prince, clapping him on the ſhoulder, "exert yourſelf a little, and cure the princeſs of this prejudice in favour of her maſter." Caffarelli was penetrated by this condeſcenſion in the prince, and cried out, "Sir, her highneſs ſhall hear two Farinelli's in one, to night." And he is ſaid to have ſung, on this occaſion, better than any one ever ſung before. The Aſtrua was piqued by his great exertions to diſplay all her talents, which, like the colliſion of flint and ſteel, only fired them the more.

In a letter which the author of this article received from Garrick, during his tour through Italy, dated Naples, February 5th, 1764, is the following paſſage concerning this ſinger who was then turned of ſixty: "Yeſterday we attended the ceremony of making a nun; ſhe was the daughter of a duke, and the whole was conducted with great ſplendour and magnificence. The church was richly ornamented, and there were two large bands of muſic of all kinds. The conſecration was performed with great ſolemnity, and I was very much affected; and to crown the whole the principal part was ſung by the famous Caffarelli, who, though old, has pleaſed me more than all the ſingers I have heard. He touched me; and it was the firſt time I have been touched ſince I came into Italy."

In 1770, we heard Caffarelli ourſelves, ſing in a room at Naples. He was then ſixty-ſeven; yet, though his voice was thin, it was eaſy to imagine, from what he was ſtill able to do, that his voice and talents had been of the very firſt claſs. He had been ſo prudent as to provide for old age during youth; and he was now not only living in eaſe and affluence, in a ſumptuous houſe of his own building; upon which was this inſcription: "Amphion Thebas, Ego domum;" but had purchaſed a dukedom for his nephew after his deceaſe. Caffarelli died in 1783, at eighty years of age; and the nephew, to whom he bequeathed his fortune, is now Duca di Santi Dorato.

CAFFER, in *Entomology*, a ſpecies of CERAMBYX, of a braſſy-green colour, with ſpinous thorax, teſtaceous wing-caſes, and ſhort antennæ. Fabricius. Inhabits the Cape of Good Hope.

CAFFER, in *Zoology*, BOS CAFFER, the Cape Ox, an animal of the Ox genus, with horns that are broad at the baſe, then ſpreading downwards, next upwards, and curving inwards at the tip: mane ſhort. Sparrmann.

It is, as Dr. Shaw very properly obſerves, to Dr. Sparrmann, Dr. Forſter, and Mr. Maſſon, that we are principally indebted for the particulars relative to the deſcription and natural hiſtory of this animal, which, though long ago imperfectly known, has but lately been accurately deſcribed. Dr. Sparrman publiſhed an account of this animal, in the Tranſactions of the Stockholm Academy for 1779, and Maſſon in the 66th volume of the Tranſactions of the Royal Society of London. By thoſe writers this animal is deſcribed as being about five feet and a half in height, and far ſuperior in ſtrength and fierceneſs to the European oxen, which renders it a dangerous creature. It encounters men, horſes, and other oxen with ferocity, trampling and cruſhing them to death with its feet, and is ſo ſwift that in running up hill it is not eaſily overtaken by a horſe.

This ſpecies inhabits the interior parts of Africa, north of the Cape of Good Hope, where it is found in lage herds in the more deſert parts, retiring by day into the thick foreſts, and appearing chiefly towards the evening and morning. It is affirmed of this creature, that it will often ſtrip off the ſkin of ſuch animals as it kills, by licking them with its rough tongue, as recorded by ſome ancient authors of the Biſon. The ſkin is exceſſively ſtrong, and is on this account in high eſtimation with the coloniſts at the Cape, for its ſuperior excellence in making harneſſes, and other uſeful articles, in which the ſtrongeſt and moſt durable kind of leather is required.

The body of the Cape Ox is of a black or darkiſh colour, and the face is covered with long harſh hair: the horns are thick and black, and lie flat upon the head, diverging ſo widely, that the tips of the two horns are ſometimes five feet aſunder: the ears are pendulous, and not unfrequenty a foot long; tail ſhort, tufted, and black at the tip. The fleſh is coarſe, and has the flavour of veniſon.

CAFFETANS, are long veſts of gold or ſilver brocade, flowered with ſilk, which are preſented by the grand ſignior and the viſier, to thoſe to whom they give audience: by the grand ſignior *before*, and by the viſier *after* audience. The caffetans of the attendants are more ordinary.

CAFFILA, a company of merchants or travellers, or both together, who join company, in order to go with more ſecurity through the dominions of the Great Mogul; and through other countries on the continent of the Eaſt Indies. In Perſia, the caffila differs from a caravan; as the former properly belongs to ſome ſovereign, or to ſome powerful company in Europe; whereas, the latter conſiſts of a company of particular merchants, each of whom trades on his own account. There are alſo ſuch caffilas, which croſs ſome parts of the deſerts of Africa, particularly what is called the ſea of ſand, which lies between Morocco, and the kingdoms of Tombut and Gago. This is a journey of four hundred leagues, and takes up two months in going, and as many in coming back; the caffila travelling only by night, becauſe of the exceſſive heat of the country. The chief merchandize they bring back conſiſts in gold-duſt.

The caffila is properly what is called caravan in the dominions of the grand ſignior, and in other parts of the Eaſt. See CARAVAN.

On the coaſt of Guzerat, or Cambaya, it ſignifies a ſmall fleet of merchant ſhips.

CAFFRA, in *Entomology*, a ſpecies of APIS, that inhabits the Cape of Good Hope. Fabricius deſcribes it as being hirſute, black, with the poſterior part of the thorax and anterior part of the abdomen yellow.

CAFFRA, in *Ornithology*, a ſpecies of CERTHIA, of a fuſcous colour, with the breaſt and abdomen pale, and the middle tail feathers longeſt. Inhabits the Cape of Good Hope.

CAFFRARIA, or land of the CAFFERS, or KAFFERS, in *Geography*, an undefined diſtrict in the ſouth-eaſtern part of Africa; deriving its name from the Cafres, Caffers, or Kaffers, who inhabit it. The appellation is derived from the Arabic word *Cafir*, which ſignifies an *infidel*, and is applied by the Arabs, as a term of reproach, to all thoſe who do not profeſs the Mahometan religion. The Portugueſe taking the name in a more general ſenſe, have denominated all thoſe nations of Africa *Caffres*, who have, or ſeem to have no knowledge of a deity. Geographers have not agreed in aſſigning the boundaries of that country in the ſouthern part of Africa, to which the appellation of Caffraria has been appropriated. By ſome, the name has been applied to the whole country that commences at Cape Negro; extending from thence ſouth-eaſterly to the Cape of Good Hope, thence, north-eaſt to the river Del Spiritu Sancto, which ſeparates it on the north-eaſt from Monomotapa; reaching on the north, almoſt to the equator, where it borders on the kingdom of Makoko; and bounded on the north-weſt by Congo, or Lower Guinea, and the kingdom of Benguela. Accordingly, they have divided this extenſive country into the kingdom of Mataman, the country of the Hottentots, Terra de Natal, and Terra dos Fumos. Others have divided Caffraria into two parts, viz. Caffraria Proper, and the country of the Hottentots. The inhabitants of Caffraria Proper are generally taller than the Hottentots, more robuſt, fierce, and warlike, and yet their manners are as inoffenſive. Their figure is more graceful, their countenances are not ſo narrow, nor their cheeks ſo prominent as thoſe of the Hottentots; neither have they the broad flat faces and thick lips of the inhabitants of Mozambique. If it were not for their colour, many of their females would be deemed beautiful even by the Europeans. They tattoo themſelves very much, and wear their hair frizzled. In hot weather they are naked; but in winter they throw a "kros" of calf's or ox's ſkin over their ſhoulders, which reaches to the ground. Their huts are larger and more regular than thoſe of the Hottentots; their frames are conſtructed of wood, and they are plaſtered within and without with a mixture of cow's dung and clay. The women form veſſels of clay, and weave baſkets of ſo cloſe a texture as to be capable of holding milk or water. They are more diſpoſed to agriculture than the others; nor would they wander if they were not compelled by an enemy. Their women principally prepare the fields for receiving ſeed, which is chiefly millet. Notwithſtanding the apparent richneſs of their paſtures, their cattle are much inferior in ſize to thoſe of their neighbours. Their ſuperior knowledge of agriculture, ſome dogmas of religion, greater induſtry, and more addreſs in procuring ſimple neceſſaries, indicate, that the Caffres have made greater progreſs in civilization than the ſouthern people. They practiſe circumciſion, but not as a religious rite. They have elevated ideas of a ſupreme power, and believe in a ſtate of future retribution; but imagine that the world is eternal. They never pray, nor have any religious ceremonies; but they have faith in ſorcery. They are governed by a chief, whoſe power is very limited: he is deemed the father of the people, and is often leſs rich than his ſubjects; for, receiving no ſubſidies, and being permitted to have as many wives as he pleaſes, his finances are not always equal to the ſupport of his retinue; and his honour is hereditary. The Caffres are more courageous than their neighbours: they dare to face the enemy, and diſdain the uſe of poiſoned arrows. Le Vaillant's Travels into Africa. For a further account of the country and hiſtory of theſe people, ſupplied by Mr. Barrow, in his "Account of Travels into the interior of ſouthern Africa," ſee KAFFERS: ſee alſo HOTTENTOTS.

CAFRA, a town of Egypt, 2 miles E. of Siut.

CAFRES. See CAFFRARIA.

CAGACO, in *Ancient Geography*, a fountain of Greece, in Peloponneſus, near the town of Gythium, according to Pauſanias.

CAGADA, in *Geography*, a ſmall iſland of the Weſt Indies, near the north-eaſt coaſt of Porto Rico. N. lat. 18° 33'. W. long. 64° 10'.

CAGADO *de agoa*, in *Zoology*, the name by which the Portugueſe in South America call a ſpecies of tortoiſe, common in that part of the world. The Braſilian name is jurura.

CAGADO *de terra*, is the Portugueſe appellation of the jaboti of South America, a remarkable ſpecies of tortoiſe. This is the teſtudo terreſtris of late writers. Kil. Stobæus Act. Litter. et Scient. Suec. 1730.

CAGADOS *rocks*, in *Geography*, are two large rocks that lie between the iſland of Palmas and Cape Formoſa, on the weſtern coaſt of Africa.

CAGANUS, or CACANUS, an appellation anciently given by the Huns to their kings.

The word appears alſo to have been formerly applied to the princes of Muſcovy, now called CZAR.

From the ſame alſo, probably, the Tartar title CHAM, or CAN, had its origin.

CAGAYAN, or CAGEAN, in *Geography*, a province in the northern part of the iſland of Luçon or Manilla, in the Eaſt Indies. It is the largeſt in the iſland, being 80 leagues in length, and 40 in breadth. The chief city is New Segovia, which is ſeated on the banks of a river of the ſame name, which runs almoſt acroſs the whole province. In this city is the cathedral church; and here reſides the chief Alcayde, with a garriſon of Spaniſh foot. This province commences with the moſt northerly cape called Del Engano; and after doubling cape Bojador, which is 15 leagues from the capital eaſtward, and coaſting from north to ſouth 20 leagues, the province terminates on the boundaries of that of Illocos. The peaceable Cagayans, who pay tribute, are about 9000, beſides thoſe that are not ſubdued. The whole province is fruitful; the men are robuſt, employed in agriculture, and of a martial diſpoſition; and the women apply to ſeveral works in cotton. In the mountains, bees are ſo plentiful, that the poor burn wax inſtead of oil; and they abound with braſil, ebony, and other ſorts of valuable wood. In the woods are many wild beaſts, particularly boars, and alſo deer, which they kill for their ſkins and horns, purchaſed by the Chineſe.

CAGE, an incloſure made with wire, wicker, or other matter, interwoven latticewiſe, for the detention of wild beaſts or birds. The word is French, *cage*, formed from the Italian *gaggia*, of the Latin *caveo*, which ſignifies the ſame: *a caveis theatrialibus in quibus includebantur feræ.* Beaſts were uſually brought to Rome ſhut up in oaken or beechen cages, artfully formed, and covered or ſhaded with boughs, that the creatures, deceived with the appearance of a wood, might fancy themſelves in their foreſt. Thoſe of the fiercer ſort were pent in iron cages, leſt wooden priſons ſhould be broke through. In ſome priſons there are iron cages for the cloſer confinement of criminals. The French laws diſtinguiſh two ſorts of bird-cages, *viz.* high, or ſinging cages, and low, or dumb cages; thoſe who expoſe birds to ſale are obliged to put the hens in the latter, and the cocks in the former, that perſons may not be impoſed on, by buying a hen for a cock.

CAGES, *caveæ*, denote alſo places in the ancient amphitheatres, wherein wild beaſts were kept, ready to be let out for ſport. The *caveæ* were a ſort of iron cages different from dens, which were under ground and dark; whereas the *caveæ* being airy and light, the beaſts ruſhed out of them with more alacrity and fierceneſs than if they had been pent under ground.

CAGE, in *Agriculture*, an incloſure formed of wire or wicker work, for the purpoſe of containing different ſorts of poultry or other animals. It alſo ſignifies a machine for weighing live animals of the ſheep, pig, and other ſmall kinds. See MACHINE.

Cage, in *Carpentry*, ſignifies an outer work of timber, incloſing another within it. In this ſenſe we ſay, the cage of a wind-mill. The cage of a ſtair-caſe denotes the wooden ſides, or walls which incloſe it.

CAGELO, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Calabria Ultra; 6 miles S.W. of Girace.

CAGGAR, or Kenker, a river of Hindooſtan, which riſes in the mountains that ſeparate Sirhind from Cahlore and Sirinagur, about N. lat. 30° 45′, and E. long. 76° 42′, and purſuing its courſe to the ſouth-weſt, and uniting with the Surſooty, and other ſmaller ſtreams, diſcharges itſelf into the gulph of Cutch.

CAGGAW, in *Botany*, a name given by the people of Guinea, to a plant which they boil in water, and uſe the decoction to waſh the mouth with, as a cure for the tooth-ach. The leaves of this are ſmooth and ſhining, like thoſe of the laurel, but they are thin, and bend like thoſe of the bay. Phil. Tranſ. N° 232.

CAGHNEWAGA, in *Geography*, the name of a ſmall village or diſtrict on the north ſide of Mohawk river in the townſhip of Johnſtown, about 24 miles W. of Schenectady in North America. It might probably have been formerly inhabited by a tribe of Indians of Lower Canada, of the ſame name, ſome of whom are found near Montreal.

CAGIT, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of parrot, very common in their woods; it is of a middling ſize, and is all over of a fine green colour.

CAGLI, in *Geography*, a town of Italy, in the duchy of Urbino, built near the ruins of the ancient Callium, on the Cantiano; the ſee of a biſhop, ſuffragan of Urbino; 18 miles S. of it. N. lat. 43° 30′. E. long. 14° 12′.

CAGLIA, or Matapan *cape*, the ſouth-weſt point of the Morea. N. lat. 36° 33′. E. long. 22° 36′.

CAGLIARI, Paolo, uſually called Paolo Veroneſe, in *Biography*, an hiſtorical painter, was born at Verona in 1530, and became a diſciple of his uncle, Antonio Badiglio, a principal artiſt at Verona. His talents diſplayed themſelves at an early period; and at Mantua, whither he was conducted by cardinal Hercules Gonzaga, he was diſtinguiſhed above all his fellow artiſts. At Venice, the prize of a large gold chain, offered by the procurators of St. Mark for the beſt picture painted by ſix eminent artiſts, was adjudged to Cagliari, by Titian and Sanſovino.

Having executed ſeveral ſubjects, chiefly of the light and rural kind, exhibiting the fertility of his invention, and the brilliancy of his pencil, in the Venetian territories, he engaged in larger works for churches at Venice and Verona, which ſerved further to advance his reputation. At Rome, whither he accompanied Grimani, ambaſſador from Venice to the pope, he much improved his ſtyle by an inſpection of the works of Raphael and Michael Angelo Buonaroti; and on his return to Venice, the doge conferred upon him the honour of knighthood. Duly ſenſible of the honour to which he attained, in his own country, he declined accepting the invitation of Philip II. to go to Spain, and paint at the Eſcurial, and ſent Zucchero as his ſubſtitute. Such was the reſpect in which he was held by his brother artiſts, as well as by perſons of diſtinction, that Titian is ſaid to have greeted him with an embrace, whenever they met, and Guido declared, that next to Raphael and Corregio, he would rather be Paolo Veroneſe than any other painter of his time. By the number and value of his performances he acquired not only fame, but wealth: and yet he diſregarded money, and generouſly parted with it, whenever any ſuitable occaſion offered. Of his generoſity, as well as facility in the exerciſe of his art, the following inſtance is recorded. Having been detained on a journey, and hoſpitably entertained at the houſe of the Piſani family, he ſecretly painted, during his ſtay, a picture of the family of Darius, conſiſting of 20 figures as large as life; and leaving the canvas rolled up under his bed, he informed his hoſts that he had left ſomething behind him towards paying his expences. This artiſt, whoſe ſuperior merit has been univerſally acknowledged, died of a fever at Venice, in 1588, at the age of 58 years, and was buried in the church of St. Sebaſtian, which he had previouſly decorated by his own hand. The pictures of this maſter were rendered ſingularly beautiful by the excellence of their colouring, by the magic effects of light and ſhade, and by the grace and harmony of compoſition. But in order to produce this kind of beauty, which charmed the eye, he ſacrificed much expreſſion, correctneſs of drawing, propriety of coſtume, and other qualities which ſatisfy the mature judgment. Of his pictures, which are diſperſed all over Europe, ſome of the principal are in the palace of St. Mark at Venice, and in the churches of that city, and of others in the north of Italy. Among his moſt celebrated pieces, are the Four Banquets; and of theſe, the Marriage at Cana, once in the refectory of the convent of St. George at Venice, now in the Louvre, conſiſting of at leaſt 130 figures, is reckoned one of the moſt capital performances in Europe. Many of his works have been engraved by the principal artiſts of their time. For his amuſement he etched ſome few plates, which ſhew the hand of the maſter. Among theſe are "the Adoration of the Magi," and "Two Saints ſleeping." His ſons, Carletto and Gabriel, acquired, alſo, eminence as painters. Carletto was born at Venice, in 1570; and poſſeſſed a genius, which, under the inſtruction of his father, manifeſted itſelf betimes, and arrived at an early maturity; ſo that he promiſed to have equalled, if not to have exceeded his father. But by inceſſant application, he impaired his conſtitution, and died in 1596, at the age of 26 years.

Gabriel was born at Venice in 1568, and having talents inferior to thoſe of his brother, he turned his attention to commerce. He died 1631.

Theſe brothers finiſhed works, which had been left imperfect by their father; and ſeveral pictures of their own deſign and execution have been aſcribed to him; nor can ſome of them be eaſily diſtinguiſhed from thoſe of this great maſter. They were aſſiſted by their uncle *Benedict*, or *Benedetto*, who was born at Verona in 1538, and died in 1598. He reſembled his brother Paolo in his ſtyle of painting; but his peculiar excellence conſiſted in the architectural figures, with which he enriched the compoſitions of his brother. At Venice there are ſeveral paintings, deſigned and executed by himſelf, which are much admired. D'Argenville. Pilkington. Strutt.

Cagliari, or Calaris, in *Geography*, a ſea-port city, and capital of the iſland of Sardinia, is ſituated in the ſouthern part of the iſland, on the declivity of a hill, and has a large and ſecure harbour, ſcreened by a ſmall iſland called "Pietra Laida," and defended with a caſtle and fortifications. It is large and populous, the number of inhabitants amounting to about 50,000, and carries on a conſiderable commerce. It is the ſee of an archbiſhop, and the reſidence of a viceroy; and contains five churches beſides the cathedral, and 23 convents. In 1708, it ſurrendered, upon an attack of the Britiſh fleet, to the emperor Charles VI.; but in 1717 it was retaken by the Spaniards, and about two years afterwards ceded to the duke of Savoy in lieu of Sicily, who obtained the title of king of Sardinia. N. lat. 39° 12′. E. long. 9° 14′.

CAGNACCI, in *Biography*. See Guido.

CAGNANO, in *Geography*, a town of the iſland of Corſica; 14 miles N. of Baſtia.

Cagnano is alſo a town of Italy, in the kingdom of Naples, and province of Abruzzo Ultra; 3 miles N.N.W. of Aquila.

CAGNETE, Canete, or Guarco, a town of South America, in Peru, and capital of a juriſdiction of the ſame name, in the archbiſhopric of Lima, near the ſea-coaſt; 80 miles S.E. of Lima. S. lat. 12 40′. W. long. 73°.

Cagnete, or Canete, a diſtrict or juriſdiction of South America, in Peru, beginning at the diſtance of 6 leagues S. from Lima, and extending along the coaſt in the ſame rhumb above 30 leagues. The temperature of the air in this diſtrict is the ſame with that in the valleys of Lima; and the country, being watered by a large river, and other leſs ſtreams, produces great quantities of wheat and maize. The lands are very much planted with canes, which yield an excellent ſugar. In the vicinity of Chilca, ſituate about 10 leagues from Lima, is found ſalt-petre, of which gunpowder is made in that city. It has alſo a good fiſhery, which affords a comfortable ſubſiſtence to the Indian inhabitants of the town, particularly thoſe ſituated near the ſea-coaſt; together with plenty of fruits, pulſe, and poultry; whence a large trade is carried on between this juriſdiction and Lima.

CAGHNEWAGA, in *Geography*, a tribe of Indians, in Lower Canada, ſome of whom inhabit the vicinity of Montreal. See Johnstown.

CAGNI. See Boufflers.

CAGNICOURT, a town of France, in the department of the ſtraits of Calais, and diſtrict of Bapaume, 3 leagues N.N.E. of it.

CAGNO, a town of Germany, in the country of Tyrol; 10 miles S.W. of Balzano.

CAGNOLU, in *Ichthyology*. See Squalus Zygaena.

CAGOTS, in *Geography*, a name diſtinguiſhing a ſingular claſs of people, who inhabit ſome of the vallies contiguous to the Pyrenées. M. Ramond de Carbonnieres in his "Obſervations faites dans les Pyrénées," &c. 8vo. Paris, 1789, adopts the opinion of M. de Marca, that this miſerable race, whoſe imbecility of mind and deformity of perſon have ſo frequently engaged the attention, and exerciſed the ingenuity, of philoſophical travellers, are the deſcendants of the Goths and Wiſigoths, who were perſecuted and diſperſed on account of their Arian principles. Theſe heretics were treated with cruelty by the Franks, and driven from the borders of the Loire and the Sevre to the moſt deſolate places. After the deſtruction of the kingdom of the Wiſigoths by the children of Clovis, thoſe who were degenerated by intermarriages, and were not able to follow the warlike Goths into Spain, ſunk into contempt on account of their religious tenets. They were excommunicated from the church, and refuſed Chriſtian burial. They were branded with the names of *Cagots*, *Cabets*, and *Caſſos*, which ſignify, according to Gebelin, "polluted" and "infected." They became leprous, he ſays, by being, through ſucceſſive generations, expoſed to the moſt extreme poverty, and by being prohibited from intermarriages with any other families than their own. "Their return to the boſom of the church was not ſufficient to remove the ſtigma of their caſt: they ceaſed from being Arians, without ceaſing to be leprous; and they afterwards ceaſed to be leprous, without being freed from all the evils engendered by a vitiated ſtate of the fluids."

CAGUAN, a diſtrict of Terra Firma, with a town of the ſame name, ſituate in the ſouthern part of New Granada. The town lies in N. lat. 3°. W. long. 76°.

CAGUANABO, a town of the iſland of Cuba; 60 miles N.N.E. of St. Yago.

CAGUANICO, a town of the iſland of Cuba; 55 miles N.N.E. of St. Yago.

CAGUATUS, Marsilius, in *Biography*, born at Verona, about the middle of the 16th century, was educated at Padua, where he acquired ſo much reputation, that he was invited to teach medicine at Rome. He continued to reſide there to the time of his death, in 1610. He was well read in the ancient Greek fathers of medicine, and employed much of his time in commenting on their works, and correcting many errors which time had introduced, often, Haller thinks, happily enough. His works are "Variarum Obſervationum Libri duo, cum diſputatione de ordine ciborum Libri quatuor," Romæ 1581, 8vo.; conſiſting principally of critical obſervations on the works of the ancients. In one caſe, he had ſeen the bones of a human fœtus which had been voided by the anus. "De Morte, Cauſa Partus." He contends, contrary to an opinion held by ſome anatomiſts, that the oſſa pubis do not ſeparate in parturition. "De Sanitate tuenda," 1591. 4to. "De Aeris Romani Salubritate, de Tiberis Inundatione, et de Epidemia Romana, ſeu de Populari Ægritudine quæ Anno 1591, et de altera quæ Anno 1593, orta eſt," 1599. 4to. He contends that the air of Rome is not unhealthy, and modern Rome more healthy than the ancient; that Rome abounds with perſons of great age; that though the Tiber frequently overflowed its banks, he had never known any epidemic follow from that circumſtance. Haller. Bib. Bot. Med. et Anatom.

CAGUI *Minor*, in *Zoology*, the name given by Marcgraave to the ſpecies of ape deſcribed by late ſcientific writers under that of *ſimia jacchus*. Edwards after Marcgraave alſo calls it *cagui minor*, or ſanglin. It is the ſtriated ape of Pennant.

Cagui *Major Braſilienſis* of Marcgraave is the *ſimia oedipus* of Gmelin, and little lion monkey of Edwards.

CAGURRIA, in *Geography*, a town of Spain, in Navarre, ſeated on a ſmall river, which almoſt ſurrounds it, and diſcharges itſelf into the Ebro; 6 leagues N.W. of Calahorra.

CAHA, a town of Perſia, in the province of Irak; 40 miles N.E. of Amadan.

CAHAIGUES, James, in *Biography*, born at Caen in Normandy, about the middle of the 16th century, applied early to the ſtudy of medicine, in which he took the degree of doctor at the univerſity of Caen, in 1580. In 1583, he publiſhed "Elogiorum Civium Cadomenſium Centuria 1;" reprinted in 1609, 4to.; "Brevis faciliſque Methodus curandarum Febrium," Cadom. 1616, 8vo. "Brevis faciliſque Methodus curandorum Capitis Adfectuum," 1618, 8vo.; "De Aqua Medicata Fontis Hebecrevonii," 1614, 8vo. He alſo publiſhed a tranſlation into French of Julien le Paulmier, "De Morbo Gallico." Haller. Bib. Medica. Eloy. Bib. Hiſt.

CAHIER, or Cahir, in *Geography*, a ſmall neat poſt and market town of the county of Tipperary, province of Munſter, Ireland, where there is a bridge over the river Suire, and near it, on an iſland in the river, is a caſtle, formerly of great ſtrength, which was twice taken, firſt by ſir George Carew in the reign of queen Elizabeth, and afterwards by Oliver Cromwell. On the bank of the river, oppoſite to the town, are the ruins of Cahier abbey, which was founded in the reign of king John Diſtance S.W. from Dublin 85 Iriſh miles. N. lat. 52° 22′ 30″. W. long. 7° 54′.

CAHIR is alſo the name of a fiſhing village in the county of Kerry, Ireland, on the coaſt oppoſite to Valentia iſland, which was formerly much frequented in time of war, becauſe no French privateer ever landed there to plunder, as was uſual on other parts of the coaſt; a privilege ſaid to have been procured by the Roman Catholic biſhop of the ſee from the French monarch. Smith's Kerry.

Cahir, a ſmall iſland in the Atlantic ocean, on the weſt coaſt of the county of Mayo, Ireland, a little ſouth of the entrance into Clew bay. N. lat. 53° 44'. W. long. 9° 53'.

CAHIRCONREE, a high mountain, ſouth of Tralee, in the county of Kerry, Ireland, the name of which is ſuppoſed to ſignify *the fortreſs of king Con.* On the top of it is a circle of maſſy ſtones, laid one on the other, in the manner of a Daniſh intrenchment, ſeveral of them being from eight to ten cubical feet, but all very rude. Different opinions have been entertained reſpecting this and other ancient monuments of the ſame kind. Some ſuppoſe them to be of eaſtern origin, and deſigned for religious purpoſes in honour of the ſun; whilſt others maintain that they are of northern origin, and were monuments of ſome great action performed near the place, or perhaps a ſepulchral trophy raiſed over ſome eminent perſon. Mr. Pinkerton, in his account of Stone-henge, ſuppoſes them to have been introduced by the *Belgæ* or Goths, whom he conſiders as the Iriſh *Firbolgs*. Theſe people uſed them, he ſays, as circles of judgment, or ſolemn places where courts were held, of all kinds and dignities, from the national council down to the baronial court, or that of a common proprietor of land, for adjuſting diſputes between his *villani* and ſlaves. According to this account they are of greater antiquity than the Danes, though uſed by this people. The common people, unable to conceive how human ſtrength could poſſibly raiſe ſtones of ſuch a prodigious weight to the ſummit of a ſteep mountain above 2000 feet high, get over the difficulty by ſuppoſing it to have been the work and labour of a giant. See Stone-henge. Smith's Kerry. Collectanea Hibernica. Ledwich's Antiquities. Pinkerton's Geography.

CAHLLO, in *Ichthyology*, a name given by ſome old writers to the fiſh they alſo called *lupus marinus*, or wolf-fiſh, *anarhichas lupus* of Linnæus.

CAHOKIA, in *Geography*, a ſettlement in the north-weſtern territory of America, north of Kaſkaſkias, which ſee.

CAHORS, a conſiderable town of France, before the revolution the capital of Quercy, and ſee of a biſhop, now the principal place of a diſtrict in the department of the Lot, ſituate in a vale between mountains on the bank of the river Lot. One part of the town ſeems to lean againſt the ſteep ſide of a mountain; the other is ſeated in a ſmall plain, watered by the meandering ſtream of the river, and finely cultivated, with its corn-fields, gardens, and fruit-trees, particularly the almond. The town is irregularly built, and its ſtreets are narrow. The cathedral church is diſtinguiſhed by its large cupola, which muſt in part have been an ancient Roman work: the remains alſo of a Roman amphitheatre and aqueduct are ſeen in this place. The number of inhabitants in the north and ſouth diſtricts of the town is 11,728, in the north canton 10,162, and in the ſouth 8,981; the territory comprehends 142½ kiliometres and 10 communes. The lands round the town are very fertile; and the wine of this place has high reputation, and is exported from Bourdeaux as an article of commerce. It is produced by dwarf or ground vines, on ſteep mountains, and holds a high rank among the red wines of France. This town is fortified and ſurrounded with thick walls; but it was taken by aſſault by Henry IV. in 1580, when mortars are ſaid to have been firſt uſed. N. lat. 44° 27'. E. long. 1° 6'.

CAHUSAC, Louis de, in *Biography*, was born at Montauban, and having finiſhed his ſtudies at Toulouſe, was admitted an advocate. On his return to Montauban, he obtained the poſt of ſecretary of the intendance. He afterwards removed to Paris, and became ſecretary to the count de Clermont, and after attending him in the campaign of 1743, he devoted himſelf to literature, and particularly to dramatic compoſitions. He died at Paris in June 1759. His temper was reſtleſs, lively, and arrogant; and his ſenſibility with regard to his reputation was ſo acute, that it is ſaid to have produced a degree of derangement, which probably ſhortened his days. His publications were "Grigri," a romance, 12mo.; "The Hiſtory of the Dance, ancient and modern," 3 vols. 12mo; "Pharamond," written in 1736, and the tragedy of the "Earl of Warwick;" two comedies, viz. "Zeneide," and the "Algerine;" the "Feſtivities of Polyhymnia," and of "Hymen," "Zais," "Nais," "Zoroaſter," the "Birth of Oſiris," and "Anacreon," all operas; beſides the "Loves of Tempé," which is alſo aſcribed to him. Biog. Dict.

Cahusac, in *Geography*, a town of France, in the department of the Lot and Garonne, and diſtrict of Lauzun, and 5 miles E.N.E. from it.

CAHUZAC *ſur Verre*, a town of France, in the department of the Tarn, and diſtrict of Gaillac, and 2 leagues N. of it.

CAHYS, in *Commerce*, a dry meaſure for corn, uſed in ſome parts of Spain, particularly at Seville and Cadiz. It is near a buſhel of our meaſure.

CAI, in *Zoology*. The Linnæan Simia Midas is deſcribed under this name by Ray in his Hiſtory of Quadrupeds.

CAJA, in *Entomology*, the ſpecies of Phalæna, known in England by the name of the garden tiger moth. The anterior wings are whitiſh, with large fuſcous ſpots: poſterior pair red, with black ſpots. *Donov. Brit. Inſ.*

Caja, in *Geography*, a river of Portugal, which runs into the Guadiana, 7 miles E. of Elvas.

Caïa, in *Ornithology*. Buffon gives this name to the hooded Parrot, Psittacus pileatus.

Caia, in the *Turkiſh Military Orders*, an officer ſerving in the poſt of a deputy or ſteward, and acting for the body of the janizaries.

CAIAC, in *Geography*, a town of Perſia, in the province of Irak; 64 miles W.S.W. of Iſpahan.

CAJANA, or Cajaneborg, a town of Sweden in a lehn or diſtrict of the ſame name, and capital of Eaſt Bothnia, ſeated on a lake near the borders of Lapland, and almoſt ſurrounded by the river Pyha, which forms a tremendous cataract in the neighbourhood. The diſtrict of which it is a part is about 60 leagues long and 16 broad. It was granted as a barony, in 1650, to Peter Brahe, under the title of the fief of Cajana. N. lat. 64° 13' 30". E. long. 15° 50' 47".

CAIANI, in *Eccleſiaſtical Antiquity*, a ſort of heretics, thus denominated from one Caianus of Alexandria, their leader, otherwiſe denominated Aphthartodocetæ.

The ſame name is ſometimes alſo given to the ſect of Cainians or Cainites.

CAIAON, in *Geography*, a kingdom of the iſland of Java.

CAIAPHAS, in *Scripture Hiſtory*, the high prieſt of the Jews, at the time of our Saviour's crucifixion. He ſucceeded Simon, the ſon of Camithus, A.M. 4029, and after poſſeſſing this dignity nine years, till the year A. M. 4038, was depoſed by Vitellius, governor of Syria, and the dignity devolved upon Jonathan, the ſon of Ananus. It appears that Caiaphas was high prieſt all the time that Pilate was in Judea. Some have thought that the phraſe, "being high-prieſt that ſame year" (John, xi. 49.) implies, that St. John ſuppoſed the high prieſthood was annual. And on this account, they have been diſpoſed to charge him with a great miſtake; for Pontius Pilate was governor of Judea 10 years, and Caiaphas was put into the prieſthood by Valerius Gratus, the predeceſſor of Pilate, and continued in it, till after Pilate's removal. But the phraſe "that year," as it ſhould have been rendered, and not "that ſame year," denotes no more than "at that time." St. John, therefore, merely ſays, that Caiaphas was high-prieſt at that time. It is added, that "being high-prieſt that year he propheſied." By propheſying we may underſtand his declaring the event; which it was in a peculiar manner the office of the prieſt to do, when he was inquired of, or when God was inquired of by him, concerning any important matter under deliberation. Lardner's works, vol. i. p. 387, &c.

CAJARE, in *Geography*, a town of France, in the department of the Lot, and chief place of a canton, in the diſtrict of Figeac; 5½ leagues E. of Cahors. The town contains 1975 and the canton 8,126 inhabitants: the territory includes 207½ kilometres and 14 communes.

CAIATUS, in *Botany*, (Rumph. amb. iv. 64, t. 24). See ÆSCHYNOMENE *indica*.

CAIAZACOS, in *Geography*, a town of the iſland of Cuba; 40 miles W.S.W. of Bayamo.

CAJAZZO, a town of Naples, in the country of Lavora, the ſee of a biſhop, ſuffragan of Capua; 8 miles N.E. of it.

CAIC, CAIQUE, CAICA, in *Sea-language*, is uſed to denote the ſkiff, or ſloop, belonging to a galley.

The Coſſacks give the ſame name, *caic*, to a ſmall kind of bark uſed in the navigation of the Black ſea. It is equipped with forty or fifty men, all ſoldiers; their employment is a kind of piracy. The Turks have alſo a ſort of caics, which ſome render by *biremes*.

The Caics, or Caiques, that navigate the ſea of Marmora, are generally manned by two or three rowers; and they are inceſſantly employed in croſſing the harbour, and proceeding with celerity to all the villages of the Boſphorus, to Scutari, to Prince's iſlands, and to every place in the environs. Theſe caiques are long narrow boats, extremely light, equipped with one, two, or three pairs of oars, ſeldom with four. They carry one or two, and even three ſails, which are ſet only in fair weather, or when the wind is not too ſtrong. They are not provided with ballaſt, and are ſo buoyant that a ſomewhat ſtiff breeze would overſet them, if the boatman did not take care to let go the ſheet on the ſmalleſt danger, and to throw the boat up in the wind by ſhifting the helm. Theſe caiques are ſo numerous, and they divide the water with ſuch velocity, that in ſome caſes the utmoſt ſkill of the rowers cannot prevent their running foul of each other, and one of the two from being overſet, eſpecially in bad weather. Such accidents, when they occur, are little regarded. They are no leſs ſwift in ſailing than elegant in their form. In two hours, with a light breeze, they will ſail from Conſtantinople to Prince's iſland, diſtant from 10 to 12 miles; and notwithſtanding contrary wind and current, three rowers never take more time for reaching Buyuk-Dere, diſtant 18 miles. The caiques belonging to the Sultan are remarkable for their ſize, their gilding, their elegance, and the number and dexterity of the rowers: they carry 14 pairs of oars, and are manned by 28 boſtangees, dreſſed in white, the boſtangee-bachi being the cockſwain, or ſteerſman. The caique of the grand viſier has 12 pairs of oars; thoſe of the principal officers of the Porte, and of the ambaſſadors of foreign powers, have ſeven pairs each. In theſe large caiques one man is required for each oar; while thoſe of private perſons are ſufficiently narrow for a ſingle man to make uſe of two oars at a time. When the ſultan in ſummer viſits his different palaces on the Black ſea, his caique is diſtinguiſhed by a beautiful crimſon awning, ſpread towards the ſtern: and he is preceded and followed by a number of others, in which are his principal officers.

CAICANDROS, or CAICANDRUS, in *Ancient Geography*, an iſland of the Perſian gulf, 400 ſtadia diſtant from Catæa, and before a place named Ilan, according to the journal of the navigation of Nearchus. It is mentioned alſo by Arrian. It was a ſmall place and uninhabited.

CAICINUS, a river of Italy in Brutium, near the Epizephyrian Locrians. It was near this river that the Athenians invaded the territory of the Locrians.

CAICO, in *Geography*, a town of the iſland of Cuba; 25 miles S.E. of Bayamo.

CAICOS, or CAYOS, a cluſter of ſmall iſlands or rocks, called *Little* and *Great* CAICOS, lying between St. Domingo, and the Bahama iſlands. N. lat. 21° 14′ to 22° 23′. W. long. 71° 40′ to 71° 50′.

CAICUS, in *Entomology*, a ſpecies of SPHINX that inhabits Surinam. The wings are fuſcous: poſterior pair rufous ſtreaked with black: abdomen cinereous with black rings.

CAICUS, in *Ancient Geography*, a ſmall river of Aſia Minor, in Myſia, which paſſed near the frontiers of Lydia, and uniting with other ſtreams, diſcharged itſelf into the ſea near Elæa: ſuppoſed to be the preſent *Girmaſti*.

CAIDBEIA, in *Botany*, (Forſk. Ægyp.) See FORSKOEHLEA.

CAJELI, or CAGELY, in *Geography*, a bay at the north-eaſt end of the iſland of Bouro, where the Dutch have a fortreſs.

CAJELIE, a country of Celebes in India, lying on the weſtern ſhore of the iſland, towards the north, between Mandhar Mamoedje and Sinlenſe, which is the ſouthernmoſt place belonging to the government of Ternate. By the treaty of Boni, this country was ceded to the king of Ternate; but the government at Batavia afterwards iſſued orders that it ſhould be conſidered as belonging to the government of Macaſſer. It formerly yielded much cocoa-nut oil; but ſince the year 1730, it has been ſo much ravaged, firſt by the internal diſſenſions between their own nobles, and afterwards by the Mandhareſe, that all the cocoa-nut trees were felled: and the land lies now almoſt uncultivated and deſert, and is ſubject, for the greateſt part, to the Mandhareſe.

CAJEPUT OIL, *Oleum Volatile Melaleucæ.* This eſſential oil is prepared from the dried leaves of the MELALEUCA *Leucodendron*, a tree which grows abundantly in many of the Molucca iſlands. The oil is brought over in conſiderable quantity from Amboyna, Batavia, and other Dutch ſettlements.

Cajeput oil is a very limpid fluid with a ſlight green tinge, lighter than water, of a very penetrating and peculiar ſmell ſomewhat reſembling a mixture of ether and camphor, totally evaporable in a moderate temperature when expoſed to air, very inflammable and burning without leaving any reſidue. In chemical qualities it reſembles the other *eſſential* OILS.

To the taſte it is highly acrid and ſtimulating, and it appears to poſſeſs valuable medicinal properties as a general ſtimulant and antiſpaſmodic. Hence it is warmly recommended in flatulent colic, paralyſis, chorea, hooping cough, and convulſive diſorders in general. The doſe is from one to ſix drops. It is alſo of conſiderable uſe externally applied for the relief of tooth-ach, rheumatic pains, ſprains, and the like. This oil was firſt introduced into the Amſterdam Pharmacopœia about the year 1726, and is retained in the laſt edition of that of Edinburgh.

Inſects have a great averſion from this oil: the vapour of which appears to intoxicate and kill them. A peculiar property of cajeput, in which it excels other eſſential oils, is, that it is a perfect ſolvent of *caoutchouc*, from which a perfect drying varniſh may be made in the manner deſcribed under that article.

CAIET, or Cayet, Peter Victor Palma, in *Biography*, was born in 1525, of poor Proteſtant parents, at Montrichard in Touraine; and after purſuing his theological ſtudies at Geneva, became a domeſtic in the houſe of Calvin, and afterwards a miniſter. However, he left his church to follow the court, and was appointed chaplain to Catharine, ſiſter of Henry IV.; but being addicted to alchemy, he was calumniated as a magician, and charged with publiſhing a book in favour of the eſtabliſhment of public ſtews; and depoſed from his miniſterial function by a ſynod. Thus diſgraced, he abjured Proteſtantiſm, in 1595, and was cordially received by the Roman Catholics, among whom he was ordained prieſt at the college of Navarre, and made doctor in theology, and appointed royal profeſſor of Hebrew. His zeal, as a new convert, led him to attack the ſect he had abandoned in ſeveral controverſial writings, and in a diſputation with Du Moulin. But his principal reputation was founded on his hiſtorical compilations. In 1598 he publiſhed a relation of the recent war between the Turks and Hungarians: and in 1605, his "Septennary Chronology," from the peace of Vervins, in 1598, to 1604, to which he afterwards added the hiſtory of the nine years' war, terminated at this peace, in his "Novennary Chronology," printed in 1608. He alſo wrote two works in Latin; one entitled, "Concilium pium de componendo Religionis Diſſidio," and the other, "Inſtructions in the four principal Oriental Languages." He died in 1610. Gen. Dict.

CAJETA, in *Entomology*, the name under which Cramer figures the Gmelinian Noctua fullonica, which ſee.

Cajeta, in *Ancient Geography*, a ſea port town of Italy in Latium, now *Gæta*.

CAJETAN, Cardinal, in *Biography*, ſo called from the place of his nativity, Cajeta, (his proper name being *Thomas da Vio*,) was born in 1469, and entered into the order of Dominicans, among whom he was diſtinguiſhed for the acuteneſs of his underſtanding and his learning. The chapter of his order conferred upon him the degree of doctor in 1494; and after having taught philoſophy at Rome and at Paris, he was choſen general of his order in 1508, and raiſed to the dignity of cardinal in 1517, by Leo X. In the following year he was deputed as legate to the emperor, for promoting the war againſt the Turks and oppoſing the Lutheran hereſy. At this time he held three conferences with Luther at Augſburg, in the conduct of which he behaved in a manner ſo imprudent and imperious as to give offence at the court of Rome. Inſtead of recurring to argument, he uſed the mere language of authority, and in an overbearing tone inſiſted on the reformer's giving up his opinions and ſubmitting reſpectfully to the judgment of the Roman pontiff. Luther's temper could not brook ſuch treatment, and of courſe the breach was widened by theſe conferences. Pope Adrian VI. ſent him as his legate to Hungary, and upon his return he was promoted to the ſee of his native city. When Rome was ſacked in 1527, he fell into the hands of the ſoldiers, by whom he was treated with great indignity, and they inſiſted on a large ſum for his ranſom. He cloſed his life at Rome, where he was aſſiduouſly employed in the ſtudy of the Scriptures, in 1534. His earlier works were "Commentaries upon Ariſtotle," and upon the "Summa Theologiæ" of Aquinas. In his "Tractatus de Comparatione Authoritatis Papæ et Concilii," he alleges many frivolous and groundleſs arguments in favour of the abſolute authority of the popes as ſucceſſors to St. Peter. His theological treatiſes diſcuſs the moſt important tenets of the Roman Catholic religion; and in his illuſtration of the doctrine of indulgences he maintains that they avail only as an abſolution from the penances enjoined by the church, but that their benefits extend to ſouls departed merely in the way of ſuffrage or interceſſion. With reſpect to indulgences he contended, in his conference with Luther, that "one drop of Chriſt's blood being ſufficient to redeem the whole human race, the remaining quantity that was ſhed in the garden and upon the croſs, was left as a legacy to the church, to be a treaſure from whence indulgences were to be drawn and adminiſtered by the Roman pontiffs."

Cajetan's moſt conſiderable work is his "Commentary upon the Scriptures," comprehending the Old and New Teſtament, except the Song of Solomon, the Prophets, and the book of Revelation. In this performance, he reſtricted himſelf to the literal ſenſe of the words of Scripture in the original languages, without regarding the expoſitions of the fathers. Ignorant of the Hebrew, he employed a Jew and a Chriſtian to furniſh him with the exact import of the words according to the letter and grammar, without troubling themſelves to give a ſenſe of their own when no ſenſe appeared. In the New Teſtament he chiefly followed the verſion of Eraſmus. By deſerting the vulgar Latin tranſlation, and diſregarding the fathers, he incurred the cenſure of ſome of his own communion; and, in 1544, the univerſity of Paris iſſued a decree, condemning his work, as containing falſe, impious, and even heretical propoſitions. Some more candid Catholics have vindicated him, though he is juſtly charged with too ſcrupulouſly adhering to the literal verſion of the rabbins. Many editions of his works have appeared. Thoſe on the Scriptures were printed at Lyons, in 1639, in 5 vols. fol. Dupin's E. H. 16th century. Moſheim's E. H. vol. iv.

CAI-FONG, in *Geography*. See Kai-fong.

CAILAR, a town of France, in the department of the Herault, and chief place of a canton, in the diſtrict of Lodève. The town contains 722, and the canton 3127 inhabitants: the territory comprehends 255 kiliometres, and 8 communes.

CAILHAU, a town of France, in the department of the Aude, and diſtrict of Limoux; 3¼ leagues S.W. of Carcaſſonne.

CAILLE, Nicholas Lewis de la, in *Biography*, an eminent mathematician and philoſopher, was born at Rumigny, in the dioceſe of Rheims, March the 15th, 1713. The amuſements of his father, after withdrawing from the army, in mathematical and mechanical philoſophy, led the ſon, at an early period, to form an attachment to mechanics. Having left ſchool in 1729, he proſecuted his ſtudies at Paris, and applied particularly to theology, in the college of Navarre, with an intention of becoming an eccleſiaſtic. But his inclination to aſtronomy diverted his purpoſe; and, by the friendſhip of the celebrated Caſſini, to whom he was introduced, he obtained an appointment in the obſervatory; and under the inſtruction of this excellent patron, his natural genius had favourable opportunities for cultivation and exerciſe, and he acquired the reputation of an able aſtronomer. In 1739 he was connected with M. Caſſini de Thury, in verifying the meridian through the whole extent of France; and in the ſame year he was appointed profeſſor of mathematics in the college of Mazarine. In 1741 he was admitted into the Academy of Sciences, and from this year to 1763 incluſive, he enriched every volume of the memoirs with ſome valuable paper. He alſo publiſhed, at different periods, ſome uſeful treatiſes on geometry, aſtronomy, mechanics, and optics. He alſo computed all the eclipſes of the ſun and moon, from the commencement of the Chriſtian era, which were printed in the work intitled, "L'Art de verifier les Dates, &c." Paris, 1750, 4to. He alſo compiled a volume of "Aſtronomical Ephemerides," for 10 years, from 1745 to 1755; another from 1755 to 1765; and a third, from 1765 to 1775. His excellent work, intitled, "Aſtronomiæ Fundamenta, noviſſimis Solis et Stellarum Obſervationibus ſtabilita;" was publiſhed at Paris in 1759; and in 1760 appeared his correct ſolar tables, under the title of "Tabulæ ſolares, quas è noviſſimis ſuis obſervationibus deduxit," N. L. de la Caille.

Having completed a ſeries of ſeven years' obſervations in the obſervatory at the Mazarine college, he formed a project, which was approved by the French court, of obſerving the ſouthern ſtars at the Cape of Good Hope; and proceeded upon this expedition in 1750. In the ſpace of two years he obſerved the places of about 10,000 ſtars in the ſouthern hemiſphere, inviſible in our latitude; and determined ſeveral other important elements, ſuch as the parallaxes of the ſun and moon, and ſome of the planets, the obliquity of the ecliptic, the quantities of refraction, &c. Previouſly to his return he engaged in the arduous attempt of eſtimating the dimenſions of the earth by meaſurement, at the ſouthern parallels, as other aſtronomers had done near the equator, and in northern latitudes, with a view of deciding whether the former correſponded with the latter. The reſults of his labours were ſatisfactory; for having determined a diſtance of 410814 feet from a place called "Klip-Fontyn" to the "Cape," by means of a baſe of 38802 feet, three times actually meaſured, he diſcovered an unknown ſecret of nature, viz. that the radii of the parallels in ſouth latitude are not of the ſame length with thoſe of the correſponding parallels in north latitude. He found that a degree on the meridian in 32° S. lat. contains 342222 Paris feet. In conformity to orders from the court of Verſailles, he alſo determined the ſituation of the Iſles of France and Bourbon. During his abode at the Cape he likewiſe made ſome curious meteorological obſervations; and he particularly obſerved, that when the ſouth-eaſt wind blows, which is often the caſe, the ſtars appear larger and ſeem to dance; that the moon has an undulating tremor; and that the planets have a ſort of beardlike comets.

Upon his return to France, after an abſence of four years, he replied to ſome ſtrictures, publiſhed by the celebrated Euler, relating to the meridian: he afterwards ſettled the reſults of the compariſon of his own obſervations, reſpecting the parallaxes, with thoſe of other aſtronomers. Accordingly, he fixed that of the ſun at 9½″, that of the moon at 56′ 56″, that of Mars, in his oppoſition, at 36″, and that of Venus at 38″. He alſo ſettled the laws, by which aſtronomical refractions are varied by the different denſity or rarity of the air, by heat or cold, and by dryneſs or moiſture. And he was one of the firſt promoters of the lunar obſervations for determining the longitude at ſea. In conſequence of the reputation which he had thus acquired and eſtabliſhed he was elected a member of moſt of the academies and ſocieties in Europe: as London, Bologna, Peterſburg, Berlin, Stockholm, and Gottingen.

Independently of his own publications, he edited the memoirs of Father Feuillée, at the Canaries; the journal of the voyage of M. de Chazelle, to the Levant; the manuſcript collection of obſervations of William, Landgrave of Heſſe, and Bouguer's treatiſe on the gradation of light.

Although he was attacked in 1760 with a ſevere fit of the gout, the energy of his mind was unimpaired: ſo that beſides purſuing his courſe of ſtudies, he ſketched out the plan of a new and large work, propoſed to be "The Hiſtory of Aſtronomy through all Ages, with a Compariſon of the ancient and modern Obſervations, and the Conſtruction and Uſe of the Inſtruments employed in working them." In the year 1761 his conſtitution gradually declined, without interrupting his ſtudies, in which he perſevered to the laſt: and they only terminated with his life, March 21ſt, 1762. Mem. of the Paris Academy for 1762.

CAILLE, in *Ornithology*, among the French, ſynonymous with the Engliſh word quail, as for example, *caille de la Louiſiane* of Buffon, the Louiſiane quail of Latham; *caille de la Chine* of Buffon, the Chineſe quail of Edwards; *caille de l'iſle de Luçon* of Sonnerat, the Luzonian quail of Latham, &c.

CAILLERE, LA, in *Geography*, a town of France, in the department of the Vendeé; 4½ leagues N. E. of Luçon.

CAILLOT, in *Biography*, a moſt pleaſing, and almoſt the only pleaſing, theatrical French ſinger, to the natives of other countries, that France has produced. He continued, during many years, the favourite actor and ſinger of the comic opera at Paris. His voice, which he could make a baſe, tenor, or counter-tenor at pleaſure, was ſweet and flexible. He was an excellent actor, and, in all reſpects, a moſt intereſting, entertaining, and admirable performer. He firſt appeared in the part of *Colas*, in *Ninette à la Cour*, in 1760.

CAILLY, in *Geography*, a town in France, in the department of the Lower Seine, and diſtrict of Rouen; 3½ leagues N.N.E. of Rouen.

CAILO, a ſmall iſland in the gulph of Perſia, 80 leagues W. of Ormus.

CAIMACAN, or CAIMACAM, a dignity in the Ottoman empire, anſwering to that of lieutenant, or vicar, among us. The word is compoſed of the two Arabic words, *Caim machum*, q. d. *he who holds the place*, or *diſcharges the functions of another*.

There are uſually two caimacans: one reſides at Conſtantinople, who is the governor thereof: the other attends the grand viſir, in quality of his lieutenant. Sometimes there are three caimacans: one conſtantly attending the grand ſignior, another the grand viſir, and a third conſtantly at Conſtantinople, who examines affairs of policy, and regulates them in great meaſure. The caimacan that attends the viſir, only officiates when at a diſtance from the grand ſignior; his function ceaſing, when the viſir is with the ſultan. The caimacan of the viſir is his ſecretary of ſtate, and the firſt miniſter of his council. The caimacan is properly the ſubſtitute of the grand viſir, appointed by the ſultan, when the former is obliged to abſent himſelf in order to take command of the army. The caimacan diſcharges his functions, is inveſted with the ſame authority, enjoys the ſame rights, but not the ſame revenues; his ſalary is fixed, and the emoluments of the place belong to the viſir, to whom the caimacan renders an account of them. It is generally a pacha or baſhaw with three tails who is appointed to this eminent place.

CAIMAN, in *Geography*. See CAYMAN.

CAIMENI. See KAMMENI and HIERA.

CAIN, קין, derived from קנה, to *acquire*, and denoting *acquiſition* or *poſſeſſion*, in *Scripture Hiſtory*, the eldeſt ſon of the progenitors of the human race, Adam and Eve, was born towards the end of the firſt year of the world. B. C. 4003. From the conciſe hiſtory of Cain that occurs in Geneſis, ch. iv. we learn, that he devoted himſelf to huſbandry, and his brother Abel to the keeping of ſheep; that when they brought their reſpective offerings to God, that of Abel was accepted, and that of Cain rejected; that this preference enraged Cain, exciting in his mind jealouſy and envy of his brother; and that the indulgence of theſe wicked paſſions at length terminated in the murder of his brother. As a puniſhment of this atrocious crime, God condemned him to be a fugitive and vagabond on earth, and to till an ungrateful ſoil, which ſhould not recompenſe his labour with the plenty and increaſe he had before experienced. Nevertheleſs he ſet a mark upon him, or gave him a ſign, that none might take away his life in his wanderings. Many ridiculous conjectures have been made both by Jews and Chriſtians concerning this mark. Some have ſuppoſed that God ſtigmatiſed him with a brand in his forehead, to denote his being accurſed; others, that he had a wild aſpect and bloody eyes, which rolled in a horrid manner. The fathers, in general, apprehend, that he had a continual trembling of the body, ſo that he could hardly get his food to his mouth; and this opinion is favoured by the LXX, which render "a fugitive and a vagabond" ςενων και τρεμων, lamenting and trembling. Others ſay, that wherever he went the earth ſhook under him; and others again intimate, that he had a horn growing out of his forehead, to warn people to avoid him, and others have indulged him with the ſign of the croſs. Le Clerc imagines, that God ordered him to wear ſome diſtinguiſhing garment, perhaps of ſome glaring colour, as a mark or ſign upon him for his preſervation. To theſe fanciful conjectures we may add a more probable opinion of Dr. Shuckford (Conn. vol. i. p. 8.), who renders the words לקין אות וישם יהוה, "God gave to Cain a ſign," or token, probably by ſome apparent miracle, that he would providentially protect him; ſo that none that met him ſhould kill him. In this ſenſe the word אות is uſed, when the rainbow is called the אות oth, that is, the ſign, or token, of the covenant which God made with Noah, aſſuring him that he would drown the world no more. (Gen. ix. 12—17.) See alſo Judg. vi. 17. Pſalm, lxxxvi. 17. Dr. Geddes (Crit. Rem. vol. i. p. 59.) tranſlates the words above cited, "and the Lord gave a token of *ſecurity* to Cain;" and he obſerves, that the original cannot admit of the common interpretation, as there is not a ſingle paſſage in the Bible where את ſignifies a *mark* or *brand* ſet on one. It always denotes a *ſign*, a *token*, a *wonderful event*; but never a *mark*. And although שום ſignifies to *place* or *ſet*, it has often a meaning like that of נת; and וישם אות is here equivalent to אות יתן, and ſuch is its ſignification wherever it is connected with the word אות. Pſ. lxxiv. 4 lxxviii. 43. cv. 27. Iſ. lxvi. 19.

Cain at length ſettled with his wife and family in the land of Nod, on the eaſt of Eden, where he built a city, calling it after the name of his ſon, Enoch But Joſephus ſays (Ant. l. i. c. 2.) that inſtead of being reformed by the puniſhment inflicted on him, he became more wicked and violent, and headed a band of thieves, whom he taught to acquire riches by oppreſſion and robbery. He is ſaid to have corrupted and changed the ſimplicity and honeſty of the world, and to have invented weights and meaſures. He was alſo the firſt who ſet bounds to the fields, and who built and fortified a city.

CAINAN, the ſon of Enos, was born A. M. 325, B.C. 3679, Enos being 90 years of age. Gen. v. 9. At the age of 70 he begat Mahaleel, and died at the age of 910 years, A. M. 1235, B. C. 2769.

CAINAN was alſo the ſon of Arphaxad, and father of Salah, whoſe name does not occur either in the Samaritan or Hebrew text, nor in any of the ancient verſions of Gen. xi. 12, &c. except the LXX; and hence it has been generally deemed an interpolation. The name, however, occurs in the genealogy of Chriſt, Luke iii. 36, between Salah and Arphaxad. Dr. Jackſon, in the firſt volume of his "Chronological Antiquities," labours hard to ſhew, that the reading of the LXX is the true original reading, and that it ſtood in the original copies till after the Chriſtian era. It muſt be acknowledged, that it is not eaſy to determine by what means it could have got into the Septuagint verſion, if it had not been found in their Hebrew copy; and it is certain, that it muſt have been in the copy uſed by St. Luke in forming his genealogy of Chriſt. It is not eaſy to conceive, how ſuch an interpolation could have been made, or for what purpoſe; whereas its having been dropt out of the Hebrew text may be readily accounted for. On the other hand, the conformity of the Samaritan with the Hebrew copies, the ſilence of Joſephus and Philo, and its omiſſion in the chronological computations of Julius Africanus, Euſebius, and Theophilus are urged as cogent proofs that the paſſage was not in the original copies of the Septuagint; and Grotius even aſſerts, that it was not to be found there before the 4th century. But it may be aſked, how came it to be inſerted? To which it is replied, that it was foiſted into St. Luke's goſpel by ſome careleſs copyiſt from ver. 37, where it rightly occurs; and this interpolation, being tranſcribed by other copyiſts, got imperceptibly into almoſt all the exemplars; and, on theſe exemplars, the copies of the LXX were next interpolated, in order to make them agree with the evangeliſt. This indeed, though not an impoſſible, is certainly a ſtrange, rapid, and almoſt incredible proceſs. For we find this ſame interpolated Cainan in the Syriac, Vulgate, Arabic, and Ethiopic verſions. Upon the whole there is reaſon for inclining to the opinion, that the comma in queſtion ſtood originally in the Septuagint verſion, and that Luke drew his genealogy from that verſion. After all, it is a point, in its connection with Biblical criticiſm, of no great moment, as the deſign of the evangeliſt was only to preſent us with the genealogy of Chriſt in its aſcent to Adam, which is equally clear, whether we reckon Salah as the immediate deſcendant of Arphaxad, or whether we conſider him as his grandſon by Cainan. We muſt not, however, omit to mention, that the comma is wanting in three of Holmes's MSS. in the Coptic (which indeed has Cainan, but makes him one of the ſons of Shem, and places him after Aram), and Armenian, edited copies, and in one Arab. MS. Nor was it read by Theophilus; nor by Jerom in his Heb. Queſtions; where he expreſsly ſays, "Arphaxad genuit Sala."

CAINAS, in *Ancient Geography*, a navigable river of Aſia, which diſcharged itſelf into the Ganges; mentioned both by Pliny and Arrian.

CAINITES, or CAINIANS, in *Eccleſiaſtical Hiſtory*, a ſect of ancient Gnoſtics, that ſprung up towards the cloſe of the ſecond century, and paid extraordinary honours to thoſe perſons repreſented in Scripture as the worſt of mankind; ſo called from Cain, whom they eſteemed their patriarch, and the chief object of their veneration. They held that Cain, Eſau, Core, Dathan, and Abiram, and thoſe of Sodom, were born of a moſt eminent celeſtial virtue; that

Abel, on the contrary, was born of a virtue much leſs eminent: to Cain, and others of the ſame order, who, according to them, had a mighty knowledge of all things, they aſſociated Judas, whom they held in ſo much eſteem, that they had a book among them called the goſpel of Judas. S. Epiphanius, who ſeems to have borrowed his account from Irenæus, relates, and at the ſame time refutes, their errors.

Irenæus and Epiphanius concur in their accounts of the groſs errors and atrocious wickedneſs of theſe people. Dr. Lardner, however, diſputes the credibility of their relation. The wickedneſs aſcribed to them, he ſays, is incredible; as it is not eaſy to conceive, that any number of perſons calling themſelves Chriſtians ſhould honour Cain, Core, and Judas, and all who lie under juſt condemnation in the ſcriptures, both of the Old and New Teſtament, for the moſt notorious wickedneſs; and beſides, the account is inconſiſtent with itſelf; for it is not poſſible that men ſhould be extremely wicked in principle and practice, and at the ſame time be concerned about the ſalvation that is by the croſs of Chriſt, and honour Judas for his love of truth, and ſolicitude for the ſalvation of the world and the general good. Moreover, the riſe of this denomination of Cainites may be accounted for another way, without making a particular ſect. It might ariſe from the SETHIANS, thoſe who call themſelves by that name, and extolled their anceſtor. Seth could not well avoid declaiming againſt Cain; and they might ſometimes ſay of thoſe in a different courſe of life from themſelves, that they acted as if they were the children of Cain, who was of the evil one; and ſeemed to ſhew themſelves kindred of Core, and Dathan, and even Judas himſelf. From this circumſtance or mode of ſpeaking, ſome perſons, who were diſpoſed to multiply hereſies, took occaſion, or by miſtake were led to talk of a ſect under the denomination of Cainites. Lardner's Works, vol. ix. p. 456. See SETHIANS.

CAINITO, in *Botany*, (Plum. Gen. 10. ic. 69.). See CHRYSOSPHYLLUM *Cainito*.

CAINON, Καινον, the *new court*, in *Antiquity*, a civil court of juſtice at Athens, ſometimes called παραβυςον μεσον, which took cognizance of trifling matters, not exceeding in value one drachm. The judges in this court were the eleven magiſtrates. See ATHENS.

CAINS, in the iſland of Candia, denote, Greeks revolted and retired to the Venetians, either at Suda or Spina Longa; who in time of war, burn, pillage, and commit all manner of cruelties on their ancient brethren under the Turks. When a Cain, or falſe brother, is taken, there is no mercy for him, they either impale him, or put him to the ganche.

CAINUM, in *Ancient Geography*, a town of Aſia, in Meſopotamia. Not. Imp.

CAJORI, in *Geography*, an iſland near the mouth of the Ganges, at the bottom of the bay of Bengal, on the weſt ſide of the river.

CAJOU, CASHEW, or CASSU. See ANACARDIUM.

CAIPHA, CAIAPHA, or HEPHA, in *Ancient Geography*, a town at the foot of Mount Carmel, to the north, on the gulf of Ptolemais; its ancient name was Sycaminos, or Porphyreon. It was ſeparated from Acco or Ptolemais, by a large and beautiful harbour. The diſtance from Acco to Caiapha; or Capha, by ſea, is not above 15 miles; but it is twice as much by land.

CAIRA, in *Geography*, a river of South America, which runs into the Oroncko, or Orinoco. N. lat. 7° 16′. W. long. 65° 1′.

CA-IRA, a poſt-town of America, in Amelia county, Virginia, 190 miles from Waſhington.—Alſo, the chief town of Sumner county, Teneſſee.

CAIRINA, in *Ornithology*, the Muſcovy duck, ANAS MOSCHATA, according to ſome authors.

CAIRN, See CARN.

CAIRNEY, in *Geography*, a town of Scotland, in Aberdeenſhire, into which the linen manufacture has lately been introduced, and where it is likely to flouriſh; 8 miles W. of Aberdeen.

CAIRNGORM, a mountain in the Highlands of Scotland, and north-eaſt part of the county of Inverary, 4060 feet high, called alſo the Blue Mountain, which is clothed with almoſt perpetual ſnow, and which is remarkable for quartz of different colours, chiefly the ſmoaky kind, well known to lapidaries.

CAIRO, FRANCESCO, called CAVALIE'RE DEL CAIRO, in *Biography*, a painter of hiſtory and portrait, was born at Milan, in 1598, and inſtructed in his art by Morazzone, whoſe ſtyle he for ſome time imitated; but in conſequence of purſuing his ſtudies at Rome, he altered his manner, and evinced his improvement by compoſing with judgment, deſigning in an elevated ſtyle, and giving correctneſs, grace, and harmony to his compoſitions. In the Venetian ſchool, he farther acquired a ſtrong and lively manner of colouring, and a talent of execution which has occaſioned ſome of his pictures, particularly his portraits, to be aſcribed to Titian, and Paolo Veroneſe. He is ſaid to have adopted three manners of painting, the Milaneſe, Roman, and Venetian; and by this variety he obtained extenſive employment and applauſe. At the court of the duke of Savoy, Victor Amadeus I., whither he was invited, he was honoured with a penſion, and with the order of knighthood. His "Thereſa," at Venice, is much admired for its colouring and expreſſion; and his picture in the chapel of the Chartreux, at Pavia, repreſenting the Virgin, St. Catharine of Siena, and another ſaint, is excellently deſigned, and beautifully coloured, in a ſtyle reſembling that of Rubens. This artiſt died in 1674. Pilkington.

CAIRO, or GRAND CAIRO, in *Geography*, the chief city of Egypt, and reckoned the ſecond capital of the Eaſt. and the metropolis of Africa, is ſeated on the eaſt of the Nile, and diſtant from it about one quarter of a league; but connected with it by the ſuburbs, called Miſr, or Maſr el Attiké, and Bulac, or Boulac, which ſee. This city was founded in the year 358 of the Hegira, A. D. 968, by Jauhar, or Giavhar, general of Moaz, the firſt caliph of the race of the Fathimites. Having ſubjugated Egypt, he built this town for the accommodation of his victorious ſoldiers, and a palace for the reſidence of the emperor. Four years after, Moaz himſelf removed from Barbary to this place, completed the building of the city, and eſtabliſhed the empire of the Fathimites. As the foundation of the city was laid at the inſtant when the planet Mars paſſed the meridian, and this planet was denominated by the Arabian aſtronomers, *Cahér*, q. d. victorious, it obtained from this circumſtance the appellation *El Cahera*, *Kaherah*, or *Kahirah*. This new city was erected near *Old Cairo*, formerly called *Maſr*, and now *Foſtat*, which ſee; and farther from the Nile, which rendered its ſituation leſs advantageous for trade. When the French, under king Luſignan, had extended their conqueſts in Syria, and carried their victorious arms even into Egypt, they proceeded, in the year of the Hegira 564, A. D. 1168, to Belbeis, and having taken it by ſtorm, they advanced towards Grand Cairo, which they alſo captured. Schaouar, king of Egypt, fearing leſt Foſtat ſhould alſo fall into their hands, ſet fire to it; and the inhabitants, being thus reduced to the neceſſity of abandoning it, took refuge in the new town, which aſſumed the name of "Maſr," or "Miſr," attached to the capital of Egypt.

Salah Eddin, or Saladin, being nominated governor of Egypt, in the year 564 of the Hegira, ſucceſsfully reſiſted the Franks, almoſt entirely expelled from the eaſtern countries, and eſtabliſhed in Egypt, of which he acquired the ſovereignty, the dynaſty of the Aioubites. In the year 572 of the Hegira, A. D. 1176, he built the walls that encompaſs Grand Cairo, and the caſtle ſituated on Mount Mokattam. It is ſaid to be about 29,300 cubits (3 leagues) in circumference: 1½ leagues from north to ſouth, or, according to Browne's eſtimate, about 3500 yards, and ¾ of a league from eaſt to weſt. To the ſouth-eaſt and eaſt of Grand Cairo is a ridge, called Mokattam, of the extenſive chain, which runs along the courſe of the Nile to Upper Egypt, ſometimes receding and leaving a plain about a league broad, and at other places oppoſing its barrier to the ſtream. This mountain is totally without verdure, and preſents nothing to the eye but a dry ſand and ſtones calcined by the ſun, which of courſe reflect a ſuffocating heat upon the town, whenever the northerly wind does not blow. To the north of the city a plain extends to the Delta, which it reſembles in ſoil and productions. Immediately under the mountain is the caſtle, now incapable of defence, though eſteemed of great ſtrength, before the invention of artillery. As it is commanded by the neighbouring mountain, it could not ſuſtain a battery from thence for two hours. It is more than a quarter of a league in circumference; and the acceſs to it is by two very ſteep paſſages, cut out of the rock on which it ſtands, which lead to two gates, entruſted to the guard of Aſſabs (no longer exiſting) and Janizaries. The former occupied the lower part of the fortreſs, and the others the part called the citadel. The interior of the caſtle contains the palace of the ſultans of Egypt, almoſt buried under their ruins. In one of the halls of theſe ruined buildings, exhibiting only ſome ſhattered remains of their ancient magnificence, is fabricated the rich carpeting, or embroidered cloth, which the Emir Hagg, or bey, who is prince of the caravan, carries every year to Mecca, for the purpoſe of covering the Caaba. The pacha's apartments in the caſtle are mean and incommodious; the audience-hall, where the divan is held three times a week, is a long room ſtained with the blood of the beys, maſſacred by order of the Porte. At the extremity of the place called "Cora Maïdan," is the mint (the only one for Egypt), where they coin in gold mahbûbs, and half-mahbûbs, the firſt being worth about 5 ſhillings each; and in copper waſhed with ſilver the ſmall coins worth about a half-penny, called in Turkiſh "paras," in Arabic, "diwani," "fuddha," or "maidi;" and by European writers, "aſpers," and "medines." On one ſide is the name of the reigning ſultan, and on the reverſe "Miſr," and the date. The ſequins are worth about 6s. 3d. Engliſh, and are made of the gold-duſt brought from Abyſſinia, which furniſhes annually upwards of four millions. One of the moſt curious monuments in the caſtle is the "Well of Joſeph," hewn out of the rock, which, according to Pococke, was ſunk about 700 years ago by a viſir, called Joſeph, by order of Sultan Mahommed, ſon of Calaoun. The Egyptians aſcribe it to Salah Eddin. It is hardly neceſſary to obſerve, that fabulous tradition attributes it to Joſeph the patriarch, whoſe palace this caſtle is ſaid to have been. The well is 280 feet deep, and 42 in circumference. A ſtair-caſe of gentle deſcent winds round it. Within this well, at a conſiderable depth, is an eſplanade with a baſon; where oxen turn the wheel that raiſes the water from the bottom of the lower well; other oxen, placed above, raiſe it from this reſervoir, by the ſame mechaniſm. The water proceeds from the Nile, and, as it filters through a ſand impregnated with ſalt and nitre, it is brackiſh. From the ſaloon of the palace of Salah Eddin, ſituate in the quarter of the Janizaries, and exiſting only in ruins, the view extends over an immenſe horizon, including the whole extent of Grand Cairo, a multitude of moſques and minarets, the river, and on the ſide of Boulac, a rich country covered with harveſts, and interſperſed with groves of date-trees. Maſr-Foſtat appears to the ſouth-weſt, and the plains of the Said, or Upper Egypt, when overflowed by the Nile, preſent to view different hamlets, built on eminences, now converted into iſlands. The landſcape is terminated by the pyramids, which, like the tops of mountains, loſe themſelves in the clouds. This caſtle commands the town, which forms an immenſe creſcent around it. The ſtreets of this famous city are narrow, crooked, and unpaved, interſected here and there with large vacancies, which become lakes during the increaſe of the Nile, and are gardens during the reſt of the year. In the month of September they are paſſable by boats; but in April they are covered with flowers and verdure. The narrowneſs of the ſtreets, however, affords protection from the fierce effulgence of the meridian ſun.

The "Chalige," "Khalig," or canal, which traverſes Grand Cairo from north to ſouth, and which is opened every year with great ſolemnity, takes its riſe near Maſr el Attiké, or Foſtat, fills the lakes of the city, and loſes itſelf four leagues beyond it, in the "Birque" (large piece of water,) of the pilgrims of Mecca. Mr. Shaw calls this the canal of Trajan. Pococke, and other modern writers, aſcribe the conſtruction of it to this emperor; and it has been commonly denominated "Amnis Trajanus." Macriſi ſays it was built by the Emperor Adrian. Elmacin, cited by Savary, ſays that this grand project was executed by Amrou, who, having announced the capture of Alexandria to Omar, received his inſtructions to cut a khalig, by which the produce of Egypt might be tranſported into the ſea of Colzoum (or Red Sea), and from thence to the port of Medina. It was called "the river of the prince of the faithful;" and boats paſſing from Foſtat, conveyed the commodities of Egypt into the Red Sea. Through the negligence of ſucceeding caliphs it has been choked up, ſo that it no longer conveys its waters to the Red Sea. By opening this important communication with the Red Sea, a project which engaged the attention of Bonaparte during his ſhort abode in Egypt, Grand Cairo would again become the richeſt and moſt commercial capital in the world. For a further account of it, ſee CANAL. At different ſeaſons of the year, this canal, in its paſſage through Cairo, aſſumes various aſpects; but its moſt permanent character is that of a dunghill, or public receptacle for all kinds of offal. Before the riſe of the Nile, it is cleaned, and becomes a ſtreet; it is then filled by the increaſe of the river, and exhibits the appearance of a canal covered with boats. The kites ſhriek wildly over this canal; and the city is infeſted with its uſual herds of dogs; while the turtle-doves, unmoleſted by men or children, breed in the houſes, building their neſts under the projecting beams.

The principal ſtreet of Cairo runs parallel to the "Chalige." And on this canal are all the houſes of the Europeans, notwithſtanding the ſtench that proceeds from it, and that is ſaid to produce the peſtilence, to which, however, that order of men is leaſt ſubject. Within the walls of Grand Cairo are more than 300 moſques, moſt of which have ſeveral minarets, or high ſteeples of a very light architecture, and ſurrounded with galleries. Theſe elevated ſtructures give to the city an agreeable variety, which would otherwiſe appear too uniform, on account of the flatneſs of the roofs, all of them being in the form of terraces: and they ſeem alſo to accommodate the public criers, who call the people to prayers at the hours preſcribed by the Mahometan law. About 800 voices may be heard at the ſame inſtant in every quarter of the town, reminding the people of the ſeaſons of devotion.

Four or five of the moſques at Cairo far exceed the reſt in ſplendour. One of the moſt magnificent is called "Iama el Az-her;" it is ornamented with pillars of marble, and Perſian carpets, and has attached to it immenſe property. A ſheich, being an eccleſiaſtic of the higheſt order, preſides over the eſtabliſhment, which alſo ſupports a number of perſons diſtinguiſhed for their profound ſkill in theology, and accurate knowledge of literal Arabic. It is furniſhed with a large collection of MSS.; and lectures are read on all ſubjects which are here called *ſcientific*, though commonly very remote from real ſcience. This is alſo a very conſiderable eleemoſynary eſtabliſhment, ſupplying chiefly poor eccleſiaſtics, to the amount of ſome thouſands, with broth, and other articles. At Cairo, moſt of the mendicants are eccleſiaſtics, who plead their ſtudies as an excuſe for idleneſs. The other moſques moſt frequented are, that of "Sultan el Ghouri," "el Haſſanein," and, of later date, that erected by "Mohammed Bey Abudhahab." For the conſtruction of this latter, the moſt coſtly materials were provided, and it is eſteemed a chef-d'œuvre of oriental magnificence.

The city abounds with large and ſumptuous reſervoirs, which ſupply paſſengers with water; and alſo with commodious and magnificent baths. See BATH. The "Okals," or warehouſes, for wholeſale goods, are ſpacious, ſtrongly built, convenient and clean: the bazârs, for retail commodities, are extenſive buildings, with convenient ſhops, each trade being appropriated to its allotted quarter, and furniſhing a plentiful ſupply of every commodity. Moſt of the houſes are built with ſoft ſtone from the adjoining mountain; many of them are conſtructed with earth, or bricks badly burnt; and they are two, or ſometimes three ſtories high, with flat roofs, or terraces of ſtone or tiles. The windows of the upper ſtories are latticed; the ground-floor being either a ſhop, or having no windows to the ſtreet. Sometimes they content themſelves with lattices; ſome few have paper windows, and ſome of the rich have glaſs. The houſes of the great chiefly ſurround "Birket-el-fil," or Birque, already mentioned, a pool which receives the water of the Nile from the "Cnalige." The palace of a bey contains a ſquare court, having one or two ſides occupied by his Mamlukes. Apart is the *Hárem*, which ſee. The room in which the bey generally ſits in ſummer, has a contrivance in the roof for admitting a copious ſupply of freſh air. In the halls of houſes belonging to perſons of ſuperior rank, are marble baſons, which receive ſpouting water; the paved floor, inlaid with marble and coloured earthen ware, is covered with mats and mattreſſes, and over all is ſpread a rich carpet, on which they ſit croſs legged. Around the wall is a ſort of ſofa, with cuſhions, to ſupport the back and elbows; and above, at the height of 7 or 8 feet, a range of ſhelves, decked out with China or Japaneſe porcelain. The walls are chequered with ſentences extracted from the Koran, and painted foliage and flowers, with which, alſo, the porticos of the beys are covered. Fire is only employed at Cairo for cookery; the effects of cold being ſufficiently obviated by warmer cloathing. The mean annual heat of Cairo, according to the eſtimate of Mr. Kirwan, is 73°. The apartments of the women in this city are furniſhed with the fineſt and moſt expenſive articles; but thoſe of the men are diſtinguiſhed by plainneſs and neatneſs. The houſes, in general, are irregular, but ſubſtantial and commodious.

The population of Cairo conſiſts of the Arabs, or lower claſs of Mahometans, who form the body of the people; of the Coptic Chriſtians, who are numerous; of Mamlukes, whom Browne eſtimates at no more than 10 or 12 thouſand; of Greeks, Syrians, and Armenians; and of Muggrebins, from Tripoli, Tunis, and Morocco, to whom an appropriate quarter is aſſigned, who are remarkable for induſtry and frugality, and are attracted hither by the great profits of trade. Beſides thoſe above recited, there are other Mahometans from Arabia Proper, and countries farther eaſt. There are few Turks who are permanent inhabitants, but they occaſionally reſort hither on buſineſs, and return to Conſtantinople. Jews were once numerous: but they are now on the decreaſe. Excluſively of negro ſlaves in every houſe, there are blacks from Nubia, who act as porters at the gates of the rich, and ſometimes ſell eatables. It is not eaſy to calculate the preciſe amount of the whole population, becauſe the Turks have no regiſters of births, deaths, or marriages; and if the number of houſes were known, it would furniſh no ſufficient datum for computing the number of inhabitants, as in Egypt a large proportion of the people have no viſible dwelling. Baron de Tott ſtates the whole number at Cairo, and the adjacent port Boulac, on the authority of an officer of the cuſtoms, at 700,000; and Volney, admitting with Niebuhr, that the circumference of Cairo is 3 leagues, and comparing it with Paris, after proper allowances, eſtimates the number at 250,000. Browne thinks it cannot be leſs than 300,000. The women of Cairo are, in general, well-formed, but not tall. Thoſe of the upper ranks are tolerably fair, in which quality, and fatneſs, conſiſts the chief conſtituents of beauty in the Egyptian climate. They marry at 14 or 15, and at 20 are paſſed their prime. The Coptic women have intereſting features, large black eyes, and a genteel form. See COPTIS.

Life at Grand Cairo, ſays Savary, is more a paſſive than an active exiſtence: the body during nine months of the year being oppreſſed with exceſſive heat, and the mind partaking of this ſtate of indolence. The Mamlukes breakfaſt before ſun-riſe, make their ſecond meal at ten, and the third about five in the afternoon. They have plenty of animal food, and in the middle of the table appears a large diſh of pilau, ſurrounded with ſmall diſhes of meat, fiſh, and fowl. Before they dreſs their meat, they cut it in ſmall pieces. Their drink is water, which is brought from the Nile into the houſes, and put into jars, called "hammam," previouſly rubbed in the inſide with a kind of paſte, made of bitter almonds. Thus preſerved, it becomes quite clear and limpid in two hours. But it is often drank in its muddy ſtate, without any ill effects. After the meal, coffee is ſerved; and at the tables of the great ſherbet is introduced. A fermented liquor made of maize, millet, barley, or rice, pleaſant to the taſte, but in the hot ſeaſon ſpoiling in the courſe of the day, is drank at Cairo, as well as in Saïd, in conſiderable quantities. The native Chriſtians moſtly diſtil for themſelves, from dates, a liquor called by the general name of "araki;" it is alſo made from currants, or the ſmall grapes imported from Cerigo.

The principal diſeaſes to which the inhabitants of Cairo are ſubject, are defluxions in the eyes, ſometimes terminating in blindneſs; the diſorder called by the vulgar the "bleſſed evil," or Neapolitan diſeaſe, as the ſyphylis has been ſometimes improperly called, hydrocele, malignant fevers, and the plague.

Among the amuſements of Cairo, we may mention its dancing girls, (ſee ALMÉ) and rope-dancers; its chief games are cheſs, and Poliſh drafts: on ſolemn occaſions, fire-works are exhibited; and on Friday, a moſque without the walls is frequented by the ladies as a pilgrimage of pleaſure.

ſure. Parties are alſo formed for ſailing in light boats, like Venetian gondolas, on the increaſe of the Nile.

Before the diſcovery of the paſſage to India by the Cape of Good Hope, the commerce of Cairo was very extenſive; but though it has ſince declined, this city may ſtill be regarded as the metropolis of the trade of eaſtern Africa, as Tripoli chiefly poſſeſſes that of the weſt. From Yemen are imported coffee, odours, gems, and ſome uſeful drugs: from Surat, and other neighbouring parts of India are obtained muſlins, and various articles of cotton manufacture; from Ceylon, ſpices; and ſhawls from Caſhmire. A few ſlaves are brought from Abyſſinia by the way of Jidda and Mecca. Caravans paſſing to and from Sennaar, Darfur, and Fezzan, bring ſlaves, gold-duſt, ivory, horns of the rhinoceros, oſtrich feathers, gum, and drugs. See Caravan. From Tunis and Tripoli are brought oil, red caps, for which Tunis is famous, and fine flannel; from Syria arrive cotton, ſilk, ſoap, tobacco, and glaſs beads; from Conſtantinople they obtain white ſlaves, male and female, and all kinds of braſs, copper, and iron manufactures. Numerous negro ſlaves paſs from Cairo to the more northern Mahometan countries.

"Two powerful cauſes," ſays Volney, "have contributed to render Cairo the ſeat of an extenſive commerce: the firſt of which is, that all the commodities conſumed in Egypt are collected within the walls of that city; and all the perſons of property, that is, the Mamlukes and lawyers, are aſſembled there, and draw thither their whole revenues, without making any return to the country from which they receive them. The ſecond is the ſituation, which makes this city a centre of circulation, while, by the Red Sea, it correſponds with Arabia and India; by the Nile, with Abyſſinia and the interior parts of Africa; and by the Mediterranean, with Europe and the empire of Turkey. Every year, a caravan from Abyſſinia arrives at Cairo, and brings from 1000 to 1200 black ſlaves, as alſo elephants' teeth, gold duſt, oſtrich feathers, gums, parrots, and monkeys; while another, deſtined for Mecca, leaves the extremities of Morocco, and receiving pilgrims, even from the river of Senegal, coaſts along the Mediterranean, collecting thoſe of Algiers, Tripoli, and Tunis, and arrives by the deſert at Alexandria, conſiſting of not leſs than three or four thouſand camels. From thence it proceeds to Cairo, where it joins the caravan of Egypt. They then jointly ſet out for Mecca, whence they return one hundred days after."—"The lading of theſe caravans conſiſts in India ſtuffs, ſhawls, gums, pearls, perfumes, and the coffee of Yemen." "The ſame commodities arrive by another rout at Suez, to which port the ſoutherly winds bring in May 26 or 28 ſail of veſſels from Djedda." "Small caravans alſo arrive from time to time from Damaſcus, with ſilk and cotton ſtuffs, oils, and dried fruits." Beſides, "there are always ſome veſſels in the road of Damietta, unloading hogſheads of tobacco from Latakia, the conſumption of which in Egypt is enormous. Theſe veſſels take rice in exchange, whilſt others arrive ſucceſſively at Alexandria, bringing clothing, arms, furs, paſſengers, and wrought ſilk, from Conſtantinople. Veſſels come likewiſe from Marſeilles, Leghorn, and Venice, with cloths, cochineal, Lyons' ſtuffs and laces, grocery, paper, iron, lead, Venetian ſequins, and German dollars. All theſe articles conveyed by ſea to Roſetta in barks called "djerm," are firſt landed there, then reimbarked on the Nile, and ſent to Cairo." From this account, it appears, that we need not heſitate to admit the report of the commiſſioner general of the cuſtoms, who aſſerted, that in 1783, Cairo had traded to the amount of near 150 millions of livres, or ſix millions 250 thouſand pound ſterling.

Among the manufactures are ſugar, of a bad quality, ſal ammoniac, which is very good, glaſs lamps, ſalt-petre, coarſe gun-powder, red and yellow leather, and linen cloth, made of the fine Egyptian flax. The only manufacture in any degree of perfection is ſilk ſtuff; but the workmanſhip is leſs highly finiſhed, and the price much greater than in Europe. Their mercery, their hardware, their gun and piſtol barrels are all imported from foreign countries. It is difficult to find at Cairo more than one watchmaker who has ſkill enough to repair a watch, and he too is an European. Jewellers, indeed, are more common here than at Smyrna and Aleppo; but they know not how properly t mount tohe ſimpleſt roſe. For the mode of hatching eggs at Cairo without incubation, ſee Hatching.

The government of airo, and of Egypt in general, is veſtedC in one of the 24 beys (ſee Bey): and the chief judicial authority in the city is delegated to a "Mulla," who is annually appointed from Conſtantinople; but his juriſdiction is principally directed to caſes of doubt and difficulty. There are, beſides this officer, "Cadis" in all the diſtricts, which, in this great city, amount to more than 200. There are alſo "Imams," or prieſts of the four ſects, each having the direction of the adherents of his ſect. The revenue of the cadis ariſes from a tenth of the value of the thing litigated. See Cadi.

In Cairo every trade or profeſſion has its ſheich or leader, who has great authority over the reſt of the claſs to which he belongs; and this circumſtance much contributes to the good order of the city. The gates alſo, which are at the end of every ſtreet, impede the progreſs, and render difficult the eſcape of ill-intentioned perſons. Notwithſtanding theſe forms of government and ſubordination, Cairo affords no ſecurity either for life or for property; and, therefore, the ſtranger on his arrival is ſtruck with the univerſal appearance of ſqualid wretchedneſs. Indeed, he often meets with horſemen richly clad; but this diſplay of luxury only renders the contraſt of indigence the more ſhocking. Every thing that he ſees or hears, reminds him that he is in the country of ſlavery and tyranny. The chief ſubjects of converſation are inteſtine diſſenſions, the public miſery, pecuniary extortions, baſtinadoes, and murders. "The blood of men," ſays Volney, "is ſhed like that of the vileſt animals. Juſtice herſelf puts to death without formality. The officer of the night in his rounds, and the officer of the day in his circuit, judge, condemn, and execute in the twinkling of an eye, without appeal. Executioners attend them, and, on the firſt ſignal, the head of the unhappy victim falls into the leathern bag in which it is received, for fear of ſoiling the place."—"Without any other reaſon than the avarice of a powerful chief, or the information of an enemy, a man is ſummoned before ſome bey, on ſuſpicion of having money. A ſum is demanded of him, and if he denies that he poſſeſſes it, he is thrown on his back, and receives 2 or 3 hundred blows on the ſoles of his feet, nay, ſometimes is put to death."

To the north-eaſt of Cairo are gardens, and large houſes, to which perſons of rank and opulence occaſionally retreat; and the Mamlukes alſo perform their military evolutions, and exerciſe their horſes, in an open ſpace appropriate to this purpoſe. The ground under the mountains to the eaſt is filled with tombs. The gates of Cairo are numerous; but the moſt remarkable are two at the northern extremity of the city, called "Bab-el-Naſr," and "Bab-el-Fituſch," which preſent a ſplendid diſplay of Saracenian architecture. N. lat. 30° 2′ 44″. E. long. 31° 18′ 16″. Cairo by the mean of ſeveral accounts is about 59 geographical miles W. of Suez, equal to 1° 8′ of longitude; and accordingly, Cairo ſhould ſtand at 31° 20′ of longitude. Savary's Egypt, vol. i. Volney's Travels, vol. i. Sonnini's Travels. Browne's Travels in Africa. See Egypt.

CAIROAN, or Kair-wan, the *Vicus Auguſti* of the Itinerary, a walled city of Africa, in the ancient Bizacium, or modern kingdom of Tunis, inferior in trade and in number of inhabitants only to Tunis, is ſituated in a ſandy barren plain, 8 leagues W. of Suſa, and about the ſame diſtance S.W. of Herkla. In this city and its vicinity are ſeveral fragments of ancient architecture. Its preſent name ſeems to be ſynonymous with "Caravan," and might originally denote the place where the Arabs had their principal ſtation in conquering this part of Africa. It is ſaid to have been founded for this purpoſe, and colonized by Akbah, or Hucba, in the 50th year of the Hegira, A.D. 670. Notwithſtanding the inconveniences of its ſituation, which renders it neceſſary to obtain vegetable food from a great diſtance, and to collect a precarious ſupply of rain-water in ciſterns or reſervoirs, Akbah encompaſſed it with a wall, incloſing a circumference of 3600 paces; and in the ſpace of five years, the governor's palace was ſurrounded with a ſufficient number of private habitations; a ſpacious moſque was ſupported by 500 columns of granite, porphyry, and Numidian marble; and Cairoan became the ſeat of learning, as well as of empire. Under the government of Ibrahim Ben Aglab, from whom was derived the dynaſty of the Aglabites, in the year 184 of the Hegira, A.D. 800, its buildings and inhabitants were very conſiderably augmented; and its inland ſituation, 12 miles weſtward of the ſea, protected it from the Greek and Sicilian fleets. In the year of the Hegira, 956, A.D. 1549, it had its own ſovereign, who was an Arab; but he was deſpoiled of part of his dominions by Dragut, who commanded in the city of Tripoli for Soliman II. emperor of the Turks. N. lat. 35° 36′. E. long. 10° 13′.

CAISIOMU, a town of the iſland of Cuba; 30 miles E.S.E. of Villa del Principe.

CAISSON, in *Architecture.* The practice of building in caiſſons is a method ſometimes adopted in laying the foundation of bridges in very deep or rapid rivers. Theſe are large hollow veſſels framed of ſtrong timbers, and made water-tight, which being launched and floated to a proper poſition in the river where the ground has been previouſly excavated and levelled, are there ſunk. The piers of the bridge are then built within them, and carried up above, or nearly to the level of the water, when the ſides of the caiſſon are detached from the bottom and removed; the bottom, compoſed of a ſtrong grating of timber remaining, and ſerving for a foundation to the pier.

The moſt conſiderable work, which has come to our knowledge, where caiſſons have been uſed, is in the building of Weſtminſter-bridge; of theſe, therefore, a particular account may be acceptable. Each of the caiſſons contained 150 loads of fir timber, and was of more tonnage than a man of war of 40 guns; their ſize was nearly 80 feet from point to point, and 30 feet in breadth; the ſides, which were 10 feet in height, were formed of timbers laid horizontally over one another, pinned with oak trunnels, and framed together at all the corners, except the ſalient angles, where they were ſecured by proper iron-work, which being unſcrewed would permit the ſides of the caiſſon, had it been found neceſſary, to divide into two parts. Theſe ſides were planked acroſs the timbers inſide and outſide with 3-inch planks, in a vertical poſition. The thickneſs of the ſides was 18 inches at bottom, and 15 inches at top; and in order to ſtrengthen them the more, every angle, except the two points, had three oaken knee timbers properly bolted and ſecured. Theſe ſides when finiſhed were faſtened to the bottom or grating, by 28 pieces of timber on the outſide, and 18 within, called ſtraps, about 8 inches broad, and about 3 inches thick, reaching and lapping over the tops of the ſides; the lower part of theſe ſtraps were dovetailed to the outer curb of the grating, and kept in their places by iron wedges. The purpoſe of theſe ſtraps and wedges was that when the pier was built up ſufficiently high above low-water-mark, to render the caiſſon no longer neceſſary for the maſons to work in; the wedges being drawn up gave liberty to clear the ſtraps from the mortices, in conſequence of which the ſides roſe by their own buoyancy, leaving the grating under the foundation of the pier.

The preſſure of the water upon the ſides of the caiſſon was reſiſted by means of a ground timber or ribbon, 14 inches wide, and 7 inches thick, pinned upon the upper row of timbers of the grating; and the top of the ſides was ſecured by a ſufficient number of beams laid acroſs, which alſo ſerved to ſupport a floor on which the labourers ſtood to hoiſt the ſtones out of the lighters, and to lower them into the caiſſon.

The caiſſon was alſo provided with a ſluice to admit the water. The method of working was as follows: A pit being dug and levelled in the proper ſituation for the pier of the ſame ſhape as the caiſſon, and about five feet wider all round; the caiſſon was brought to its poſition, a few of the lower courſes of the pier built in it, and ſunk once or twice to prove the level of the foundation; then being finally fixed, the maſons worked in the uſual methods of tide work. About two hours before low water, the ſluice of the caiſſon, kept open till then, leſt the water, flowing to the height of many more feet on the outſide, than the inſide, ſhould float the caiſſon and all the ſtone work out of its true place, was ſhut down, and the water pumped low enough, without waiting for the loweſt ebb of the tide, for the maſons to ſet and cramp the ſtone-work of the ſucceeding courſes. Then when the tide had riſen to a conſiderable height, the ſluice was opened again, and the water admitted; and as the caiſſon was purpoſely built but 16 feet high to ſave uſeleſs expence, the high tides flowed ſome feet above the ſides, but without any damage or inconvenience to the works. In this manner the work proceeded till the pier roſe to the ſurface of the caiſſon, when the ſides were floated away to ſerve the ſame purpoſe at another pier. (Labelye's Deſcription of Weſtminſter-bridge.)

Caisson, in the *Military Art,* is ſometimes uſed for a cheſt; and in particular for a bomb-cheſt.

The caiſſon is conſidered as a ſuperficial mine, or *fourneau.*

Caisson is alſo a covered waggon to carry bread, or ammunition.

CAISTOR, in *Geography.* See Castor.

Caistor, a townſhip of America, in the county of Lincoln, Upper Canada, between Binbrook and Gainſborough, watered by the river Welland.

CAISTRUS, in *Ancient Geography*, *Kaiſter*, a ſmall river of Aſia Minor in Ionia, formed by the union of two branches, which had their ſources in mount Tmolus, and flowing by the ſouth-weſt, watered Metropolis or Epheſus, near which it diſcharged itſelf into the ſea. It is called at preſent by the Turks "Kitchik Meinder," or the Little Meander. Virgil refers to it,

> "Jam varias pelagi volucres, et quæ Aſia circum
> Dulcibus in ſtagnis rimantur prata Cayſtri."
> Georg. l. 1.

CAITAIA, in *Zoology*, the name under which Marcgraave notices *ſimia ſciurea* of Gmelin.

CAITHNESS, in *Geography*, ſometimes denominated the ſhire of Wick, is the moſt northerly county of Scotland. Its S.W. border unites with the county of Sutherland, and the remainder is waſhed by the waters of the Pentland-frith, and the German Ocean. This diſtrict, includes an area of about 35 miles from N. to S. by 22 miles from eaſt to weſt, Mr. Pennant deſcribes the country as a large moraſs interſperſed with ſome fruitful patches which produce barley and oats. The coaſt is rocky, and abounds with bays and promontories. The principal of theſe are, Sandſide-head, pointing to the opening of Pentland-frith; Orcas, or Holborn-head, and Dunnet-head, both pointing northward to the frith. Soribiſter-bay is a good harbour for ſhipping. There are two other ſmaller bays, named from the contiguous places, Rice and Thurſo. The only iſland annexed to this country is Stroma, which is ſituated in the Pentland-frith; the property of which was formerly claimed by the earls of Orkney, but was afterwards attached to Caithneſs. The cauſe of this reverſion is ſaid to have reſulted from a curious experiment. The earls of Orkney and Caithneſs contended for the property of this iſland, it being ſituated about midway between their reſpective diſtricts. Inſtead of reſorting to the ſword in this diſpute, they mutually agreed to abide by the iſſue of a more inoffenſive trial. As venomous animals would not live in the Orkneys, ſome were conveyed to Stroma, and finding that they continued to thrive in the iſland, it was determined that it naturally belonged to Caithneſs, and was adjudged to that earldom accordingly. This county is well watered, and contains a few birch plantations; but the ſoil and the climate are unfavourable to the growth of timber. At ſome parts of the coaſt, the ſea is generally very impetuous, being continually agitated by violent counter tides, currents, and vortices. Fiſh are caught in great abundance, but from the above named cauſes, and the want of convenient harbours, the proprietors do not derive much advantage from exportation. The rocks round the ſhore are perforated into numerous caves, which are frequented by an abundance of ſeals. Many of theſe are deſtroyed by the inhabitants. Eagles, hawks, and a vaſt quantity of ſea-fowl frequent theſe rocks.

Caithneſs is well peopled with a race of hardy, athletic inhabitants, whoſe chief employ, and ſource of livelihood are fiſhing, and breeding ſheep and black cattle. Of the latter it has been recorded, that from 1000 to 2000 head have been ſent from this country in one year. In bad ſeaſons, the farmers moſtly kill and ſalt them for home conſumption and for exportation. Great numbers of ſwine are alſo reared here, but according to the opinion of Dr. Moriſon, (Sir John Sinclair's Statiſtical Account, viii. 150.) "the damage they do in the winter to the graſs and corn lands, as they are allowed to roam at large, far exceeds any advantage that can accrue from them." Theſe animals are rather peculiar in character and ſpecies: they are ſhort, high-backed, long-briſtled, ſharp, ſlender and long noſed, have high erect ears, and are very wild in aſpect. Barns and granaries are unknown to this county; the corn is thraſhed out and preſerved in the chaff in byhes, which are ſtacks in the ſhape of bee-hives, and thatched quite round. Much ſalmon is taken in the rivers of this county, particularly at Caſtle-hill, Dunet, Wick, and Thurſo. At the laſt place there was "a miraculous draught taken within the memory of man; not leſs than 2500 being caught at one tide." (Pennant's Tour in Scotland, i. 202.) Caithneſs is divided into ten pariſhes, and contains one royal borough, Wick, and the town of Thurſo. It ſends a member to parliament alternately with the county of Bute. The principal landholders are the earl of Caithneſs, Sir John Sinclair, bart. Sir Benjamin Dunbar, and —— Sinclair, eſq. all of whom poſſeſs ſeats in the county. Many monuments of antiquity are ſtill remaining in Caithneſs, moſt of which are of a military nature. Of the more ancient kind are the Cairns, Duns, and Tumuli; which are ſcattered over many parts of the county. Some ruins of caſtles are ſtill left at Caſtle-Sinclair, Germengo, Auchnavern, Dirlet, and Lochmore. In mineralogy, Caithneſs poſſeſſes ſome articles of value, as excellent free-ſtone and lime-ſtone; alſo, copper, lead and iron ores. At the N.E. point of Caithneſs is Dunſby-head, the moſt extreme northern promontory of Britain. At this place the breadth of the frith does not exceed twelve miles, and is the moſt uſual ferry or paſſage to the Orkney iſlands. In the foreſts of Moravins and Berridale, are abundance of red deer, roe-bucks, &c. and the county abounds with grouſe, heathcocks, plover, hares, and moſt other game. Birds of a peculiar ſpecies, called Snow-fleets, frequent this county, in large flights, about the middle of February, and depart in April. They are about the ſize of a ſparrow, and eſteemed very delicious in flavour. The laſt private war in Scotland was occaſioned by a diſpute relating to this county. Pennant's Tour in Scotland. Sir John Sinclair's Statiſtical Account of Scotland.

CAIUS, Pope, in *Biography*, ſucceeded Eutychianus in the pontificate A.D. 283, and held it till A.D 296. The church of Rome reckons him among her martyrs; but hiſtory informs us, that, having concealed himſelf under the perſecution of Diocleſian, he died in peace A.D. 296. To him is aſcribed a decree that biſhops ſhould paſs through the ſeven inferior orders of the church before they aſſumed the epiſcopal office. Bower.

Caius, or Gaius, an eccleſiaſtical hiſtorian, who flouriſhed, according to Cave, about the year 210. Photius ſays, "that he was ordained biſhop of the nations," i. e. as ſome have interpreted the phraſe, that he was ordained to preach the goſpel to infidel countries, without the allotment of any particular dioceſe. Fabricius reads, inſtead of "nations," Athens; and accordingly ſuppoſes, that, having been at firſt a preſbyter of the church of Rome, he was afterwards made biſhop of Athens. It has been aſſerted by many writers, but upon diſputable authority, that he was a diſciple of Irenæus. Three or four books are aſcribed to Caius, viz. "A dialogue or diſputation with Proculus or Proclus," a follower of Montanus; "Of the Univerſe;" the "Labyrinth;" and a treatiſe againſt the "Hereſy of Artemon." Some fragments of theſe works are ſtill extant. The firſt, however, is, in Dr. Lardner's opinion, the only piece juſtly aſcribed to him. In his dialogue are ſome paſſages that indicate the author's reſpect for the ancient ſcriptures generally received by Chriſtians; though he ſeems to have thought, the epiſtle to the Hebrews was not written by St. Paul, and that the book of the Revelation was not genuine, but probably an impoſture of Cerinthus. Cave, H.L. T. i. p. 100. Lardner's Works, vol. ii. p. 371, &c.

Caius, Bernard, born at Venice towards the end of the 16th century, where he received his education, publiſhed, in 1606, "De Veſicantium Uſu." He entirely rejects bliſters in all acute diſeaſes, as adding greatly to the malady by irritating the ſyſtem. He alſo publiſhed in 1608, "De Alimentis, quæ cuique naturæ conveniunt, de Voluptate, Sapore, Frigida Potione, Viribus Salis Nitri ad refrigerandum," 4to, republiſhed in 1610. Haller Bib. Med.

Caius, Kaye, or Key, John, an ingenious and learned phyſician, was born at Norwich, October 6th, 1510. After paſſing through the uſual ſchool education at Norwich, he was admitted a ſtudent in Gonvil Hall in Cambridge, Sept. 12th, 1529, and having diſtinguiſhed himſelf by his proficiency in literature, he was made fellow of that community in 1533. His thirſt for knowledge, and his deſire of perfecting himſelf in the different branches of medicine, determined him to viſit the continent, and to paſs ſome time at Padua, then famed for the celebrity of its profeſſors, particularly in that branch of ſcience. He here ſtudied under

John Baptiſta Montanus, having Veſalius for his fellow ſtudent. His progreſs here in Greek and Latin, as well as in the knowledge of anatomy and medicine, equalled the promiſes of his early years; as was evinced by his tranſlations and commentaries on various parts of the works of Hippocrates, Galen, Scribonius Largus, &c. correcting the errors of the tranſcribers, and elucidating and explaining the more difficult paſſages. With the view of hearing other profeſſors, and of examining ancient manuſcripts, he viſited moſt of the principal cities of Italy. At Bologna he reſided ſome time, and there took his degree of Doctor of Medicine, in 1541. He then returned to Padua, and in conjunction with Realdus Columbus, read lectures on the Greek text of Ariſtotle. In 1544, he came to England, and for ſome time read lectures in anatomy to the corporation of ſurgeons in London. He afterwards practiſed medicine at Shrewſbury, where he was at the time when the ſweating ſickneſs made its appearance in 1551; of which he publiſhed a popular account, with the view of inſtructing his countrymen in the nature of the complaint, and of the methods he thought moſt proper for oppoſing its progreſs. This he afterwards, in 1556, publiſhed again in Latin, much enlarged and improved, under the title of "De Ephemera Britannica." As it contained an accurate deſcription of the diſeaſe, whatever might be the value or the efficacy of the practice, it was thought deſerving of being preſerved, and was reprinted in 1721, 12mo. His reputation for learning and abilities being eſtabliſhed, he was admitted a fellow of the College of Phyſicians in 1547. He was alſo appointed phyſician to king Edward the Sixth, and in ſucceſſion to the queens Mary and Elizabeth. To the College of Phyſicians he was a warm and ſtrenuous friend, and on the death of Linacre, under whom it was founded, he was appointed preſident, which office he held for ſeven years. During this time, he reviſed their laws, appointed inſignia for the preſident, and, to encourage the ſtudy of anatomy, he obtained a grant of the bodies of two malefactors every year, to be diſſected under the direction of the College. He alſo drew up their annuals in Latin, or an account of their inſtitution, with a journal of their proceedings, which he left with the College. Mindful of his alma mater, he obtained from Queen Mary a power of erecting Gonvil Hall into a College, adding to its endowments, proviſions for three fellows, and twenty ſcholars. He added an entire new court to the College, and built three gates. They coſt him together 1834l. The improvements were begun in 1557; when completed he was made maſter of the College, and continued in that poſt until a ſhort time before his death, when he reſigned it to Dr. Legge, but ſtill reſided as a fellow commoner; and died there in 1573, aged 63 years, having in his laſt illneſs ſupported himſelf by woman's milk. On his tomb, by his direction, was engraved, "Fui Caius." Beſides his verſions from the Greek, and the "Ephemera Britannica," he publiſhed "De Canibus Britannicis," 1570, inſerted entire by Mr. Pennant in his Britiſh Zoology; to which were added "Hiſtoriæ rariorum Animalium," originally printed in Geſner's collection: alſo, "De Libris propriis," and "De Antiquitate Cantab. Academiæ;" and from numerous unedited manuſcripts, appears to have projected various other works. Haller's Bib. Med. et Anat. Aikin's Biog. Mem. of Medicine in Great Britain.

CAJUS, in *Entomology*, a ſpecies of Papilio (*Heſperia* Fabr.), having entire brown wings, with a bluiſh diſk: beneath, varied with cinereous and white, with brown ocellar dots. Inhabits India.

CAIX, in *Geography*, a town of France, in the department of the Somme; 12 miles E. of Amiens.

CAKE, a finer ſort of bread, denominated from its flat, round figure. We meet with divers compoſitions under the name of cakes; as ſeed-cakes, made of flour, butter, cream, ſugar, coriander and caraway-ſeeds, mace, and other ſpices and perfumes, baked in the oven; plum cakes, made much after the ſame manner, only with fewer ſeeds, and the addition of currants; pan-cakes, made of a mixture of flour, eggs, &c. fried; cheeſe-cakes, made of cream, eggs, and flour, with or without cheeſe-curd, butter, almonds, &c.; oat-cakes made of fine oaten flour, mixt with yeaſt, and ſometimes without, rolled thin, and laid on an iron or ſtone to bake over a ſlow fire; ſugar-cakes, made of fine ſugar beaten and ſearced with the fineſt flour, adding butter, roſe-water, and ſpices; roſe-cakes, *placentæ roſaceæ*, are leaves of roſes dried and preſſed into a maſs, ſold in the ſhops for epithems. See Epithem.

Cake of *Copper*, denotes a quantity from 14lb. to one hundred-weight.

Cake, in *Rural Economy*, a term applied by farmers to the ſubſtance which remains after the oil has been expreſſed from flax and rape ſeeds. Cakes made from the firſt of theſe ſeeds, are much employed in the feeding and fattening of bullocks, and other ſort of cattle. Theſe ſubſtances have likewiſe, ſometimes, been made uſe of for the purpoſe of manure, eſpecially when made from the latter material. See Oil-cake.

Cake-*wax*, a denomination ſometimes given to the white or virgin-wax.

Cake-*ſoap*, ſtands diſtinguiſhed from ſoft-ſoap and ball-ſoap. See Soap.

CAKET, in *Geography*, a town and capital of a country in Aſia, in the northern part of Perſia, near mount Caucaſus, trading principally in ſilk. N. lat. 43° 2′. E. long. 46° 4′.

CAKILE, in *Botany*, (Tournefort, Gærtner, and Ventenat.) See Bunias.

CALA, in *Geography*, a town of Spain, in the country of Seville, on the borders of Eſtramadura; 14 miles S. of Lerena.

Cala. See El Callah.

CALABA, in *Botany*, (Plumier.) See Calophyllum.

CALABAR, or Calbari, in *Geography*, a country of Africa in the kingdom of Benin, or Upper Guinea, uſually diſtinguiſhed into New and Old Calabar, with a river of the ſame name in each. The entrance into New Calabar is in N. lat. 4° 30′. W. long. 9° 10′. That into Old Calabar is in N. lat. 4° 32′. W. long. 10° 28′. The Dutch carry on a conſiderable trade with this country. See Benin.

CALABASH, in *Botany*. See Cucurbita *Pepo*.

Calabash-*tree*. See Crescentia.

Calabash, *African*. See Adansonia and Baobab. The word is Spaniſh, *calabaça*, which ſignifies the ſame. The Indians, both of the North and South ſea, put the pearls they have fiſhed in *calabaſhes*, and the negroes on the coaſt of Africa do the ſame by their gold-duſt. The ſmaller calabaſhes are alſo frequently uſed by theſe people as a meaſure, by which they ſell theſe precious commodities to the Europeans.

Calabash-*bay*, in *Geography*, lies on the S.W. ſide of the iſland of Jamaica, between Flint bay on the eaſt, and Swift's river on the weſt, and affords good anchorage.

CALABER, Quintus, in *Biography*, a Greek poet, ſuppoſed to have flouriſhed under the emperor Anaſtaſius I. about the year 491, and to have derived his name from Calabria, though he reſided chiefly at Smyrna. He is known as the author of a poem, conſiſting of 14 books, on the "Paralipomena" of Homer, or the events of the Trojan war, not related by that poet, and commended for its elegant verſification. It was diſcovered by cardinal Beſſarion, in a monaſtery near Otranto in Apulia. Two of the books, deſcribing the capture of Troy, were publiſhed ſeparately by Neander, in his "Opus Aureum," Leipſ. 1577. Editions of the whole have been given at Hanau, 8vo. 1604; and by Paw at Leyden, 8vo. 1734. Voſſ. de Poet. Græc.

CALABEZA, in *Geography*, a town of South America, in Terra Firma, on Oronooko river.

CALABITE, a ſmall iſland of the Eaſt Indian ocean, being one of the Philippines, between Mindoro and Luban.

CALABRIA, in *Ancient Geography*, a name ſuppoſed to have been received from the oriental "caleb," or pitch, on account of the reſin obtained from the pines of this country, and correſponding to that part of Italy more generally denominated "Meſſapia," and the preſent Calabria.

CALABRIA, in *Geography*, a country of Italy, in the kingdom of Naples, divided into Calabria Citra, and Calabria Ultra, or Hither and Farther Calabria. The former is bounded on the north by Baſilicata, on the eaſt by the gulf of Taranto, on the ſouth by Calabria Ultra, and on the weſt by the Mediterranean, and a ſmall part of Principato Citra. Swinburne eſtimates its extent at 1,605,463 moggie, (five moggie being equal to four Engliſh acres) and the number of inhabitants at 315,330. It abounds in excellent fruits, corn, wine, oil, hemp, cotton, flax, ſaffron, honey, ſalt, wool, ſilk, and manna. It has ſome mines of gold and ſilver, lead and iron, together with ſulphur, alabaſter, and rock cryſtal. Hogs and ſheep are numerous. Its coaſts are defended by towers. Its principal towns are Cozenza, Paola or Paula, Biſignano, Caſſano, Scalea, Cariati, Roſſano, Umbriatico, Strongoli, Carenza, Martorano, and Amantea. Its chief rivers are the Cochile, Crate, Lao, Celano, Trionto, Aquanile, and Bato. Calabria Ultra is bounded on the north by Calabria Citra, and on the eaſt, weſt, and ſouth, by the Mediterranean ſea. The productions are nearly the ſame with thoſe of Calabria Citra. The extent, according to Swinburne, comprehends 1,901,878 moggie; and the number of its inhabitants is 460,392. The principal towns are Catanzaro, Cotrone, St. Severina, Iſola, Taverna, Nicaſtro, Belcaſtro, St. Eufemia, Squillace, Tropea, Nicotera, Mileto, Oppido, Gerace, Reggio, and Bova. The chief rivers are the Alli, Angitola, Tacina, Alaro, Alice, Amato, Metauro, and Metramo.

In Calabria all the oxen are white, large and long-horned, except thoſe of the red breed, which have been introduced from Sicily by the princes of Cariati and Gerace. The buffaloes are black; and moſt of the goats, ſheep and hogs are of that hue. The laſt ſpecies have no hair, but their hides are as ſleek as thoſe of elephants. In ſome parts of this country dormice are accounted delicate game, as they were in ancient Rome, where they were kept in warrens, and fatted for the tables of the moſt refined epicures. They are ſmoked out of their neſts in hollow trees, and caught with ſharp hooks. Their ſkins make very fine leather. The Calabrian horſes are pretty, ſpirited, and brilliant in their motions; but generally low, and ſeldom free from vice. All live animals in Calabria are taxed. Six carlini (or about 2s. 3d.) are paid for an ox, 4 grains (10 of which make a carlino) for a ſheep; and therefore it is no wonder that the graziers ſhould be indigent, and that the cottagers ſhould keep no beaſt of any kind, and that they ſhould live upon caſual and unſubſtantial nutriment, inſtead of milk, cheeſe, and other wholeſome diet, which the rich paſturage of the country ought to afford them. Arable land is ploughed four times; but inſtead of laying down their fallows with hay ſeeds, clover, or any of thoſe rich artificial graſſes, which are ſown in England to produce fine meadows and paſtures, the Calabrian farmer thinks he does his farm ample juſtice if he ceaſes to plough it for two or three years, and leaves the good graſs, accidentally produced there, to make its way, as well as it can, through the matted fibres of various ſorts of rank weeds. The Calabrian foreſees no melioration of his condition from any of his efforts; and he is diſcouraged by the apprehenſion that increaſing activity and produce on his part would ſubject him to an additional weight of taxes and oppreſſion.

The Zingari, or gypſies, of Calabria do not contract alliances with any other claſs of inhabitants, but marry among themſelves. They have no permanent property, nor any fixed habitation. They ſubſiſt by the profits of little handicrafts, and chiefly by trucking aſſes and horſes, which they do for the ſmalleſt trifle to boot. They generally work in iron, and make trivets, knitting-needles, and bodkins, and baubles of that kind. Their dreſs is very mean; they ſhave their chins, but wear long hair, to which they apply neither comb nor ſciſſars. Their religion is altogether myſterious; and though they occaſionally conform to the ceremonies of the Roman Catholic church in marriage, burials, &c. they often perform theſe functions according to their own cuſtoms, which reſemble thoſe of the heathens. At their weddings they carry torches, and have paranymphs to give away the bride, with many other unuſual rites. With regard to their conduct they are depraved and licentious; and are univerſally accounted to be pilferers, cheats, faithleſs, ſhameleſs, and abandoned to all manner of diſſoluteneſs. They accuſtom themſelves to tell fortunes, and to play juggling-tricks, as they do in other countries. In 1560, they were baniſhed the kingdom as thieves, cheats, and ſpies for the Turks. In 1569 and 1585, the order was renewed; but not being enforced, it had little effect. They make uſe of two languages, one Calabrian, with a foreign accent and pronunciation; the other peculiar to themſelves, which, in ſound, bears a great affinity to the oriental tongues, and is ſpoken by them whenever they have ſecrets to impart to each other.

There is a viſible difference in the dreſs and manners of the two Calabrias; the inhabitants of the ſouth part reſemble the Sicilians; and, like them, the men wear bonnets; but north of Rogliano, the boundary of the provinces, hats are univerſally worn. The Sicilians, it is ſuppoſed, even now betray ſtrong marks in their character of their ancient connection with the Africans, and the North Calabreſe have in their diſpoſition much German ſolidity, ariſing perhaps from colonies tranſplanted thither by the Swabian princes; and in the ſouthern Calabreſe, and Neapolitans, particularly the latter, there are evident traces of Grecian manners and temper. Calabria is in bad repute with reſpect to the ſafety of travellers; and yet the people ſeem perfectly honeſt with regard to one another; for their houſes have no bolts or bars to their doors; and during the owners' abſence, they are left to the mercy of every paſſenger. Swinburne's Travels in the Two Sicilies, vol. ii. and iv.

Calabria, formerly poſſeſſed by the Brutii and other Greek colonies, has been in all ages convulſed and deſolated by earthquakes. In 1638 and 1659 the two provinces of Calabria were almoſt utterly deſtroyed; and that of 1744, though not equally injurious, was very calamitous and diſtreſſing. The dreadful effects of the ſucceſſive earthquakes of 1783 are particularly deſcribed by count Ippolito and ſir William Hamilton. The part of Calabria, according to ſir William's account, which was moſt affected, is comprehended between the 38th and 39th degree; and the greateſt force of the earthquake ſeemed to have exerted itſelf from the foot of thoſe mountains of the Apennines, called the Monte Diio, Monte Sacro, and Monte Caulone, extending weſtward to the Tyrrhene ſea. The towns, villages, and farm-houſes, neareſt theſe mountains, ſituate either on hills or in the plain, were totally ruined by the firſt ſhock of the 5th of February; and the farther removed towns and villages were from this centre, the leſs they ſuffered. Indeed, the face of the earth of that part of Calabria above-mentioned was entirely altered; many openings and cracks had been made in the ground; ſome hills had been lowered, and others quite levelled; roads were rendered impaſſable by the chaſms that had been produced in the plains; huge mountains had been ſplit aſunder, and parts of them driven to a conſiderable diſtance; deep vallies had been filled by the ſevered mountains; the courſe of ſome rivers had been altered; new ſprings broke forth in dry ground, and other ſprings totally diſappeared; and in one place the ſurface of two whole tenements, on which grew large olive and mulberry trees, were detached by the earthquake, and tranſplanted, whilſt the trees remained in their places, to the diſtance of about a mile from their former ſituation; and from the ſpot on which they formerly ſtood, hot water ſprung up to a conſiderable height, mixed with ferruginous ſand; and near this place ſome countrymen and ſhepherds had been ſwallowed up with their teams of oxen and their flocks of goats and ſheep. "From the city of Amantea," ſays ſir William "ſituate on the coaſt of the Tyrrhene ſea, in Calabria Citra, and along the weſtward coaſt to cape Spartivento in Calabria Ultra, and then up to the eaſtern coaſt as far as the cape d'Alice (a part of Calabria Citra) on the Ionian ſea, there is not a town or village, either on the coaſt or land, but what is either totally deſtroyed, or has ſuffered more or leſs, amounting in all, to near 400 of what are called here "Paeſes;" a village containing leſs than 100 inhabitants is not counted as a "Paeſe." At Caſal Nuovo, the princeſs Gerace, and upwards of 400 of the inhabitants, loſt their lives; at Bagnara, the number of dead amounts to 3017; Radicina and Palmi count their loſs at about 3000 each; Terra Nuova about 1400; Seminari ſtill more. The ſum total of the mortality in both Calabrias and in Sicily, by the earthquakes alone, according to the returns in the Secretary of State's office at Naples, is 32,367;" but ſir William conceives that the whole number amounted at leaſt to 40,000. In the accounts from Calabria Ultra, two ſingular phenomena are mentioned. "At about the diſtance of 3 miles from the ruined city of Oppido, there was a hill (the ſoil of which is a ſandy clay, about 500 palms high, and 1300 in circumference at its baſis. It was ſaid that this hill, by the ſhock of the 5th of February, jumped to the diſtance of about 4 miles from the ſpot where it ſtood, into a plain called the Campo di Baſſano. At the ſame time, the hill on which the town of Oppido ſtood, which extended about 3 miles, divided into two, and as its ſituation was between two rivers, its ruins filled up the valley, and ſtopped the courſe of thoſe rivers; two great lakes are already formed, and are daily increaſing, which lakes, if means are not found to drain them, and give the rivers their due courſe, in a ſhort time muſt infect the air greatly." For a farther detail, See Phil. Tranſ. vol. 73. part i. See Earthquake.

CALABRINI, in *Botany*, a name by which ſome authors call the rough spleenwort, or *lonchitis aſpera.* Ger. Emac. Ind.

CALABRITA, in *Geography*, a town of European Turkey, in the Morea; 38 miles W. of Corinth.

CALABRITO, a town of Naples, in the province of Principato Citra,

CALABURA, in *Botany*, (Pluk.) See Muntingia.

CALACHERIN, in *Geography*, a town of Perſia, in the province of Irak; 125 miles W. of Amadan.

CALACINE, or Calachene, in *Ancient Geography*, a province or diſtrict of Aſſyria, bounded on the north by the mountains of Armenia and Arrapachitis, on the weſt by the Tigris, on the eaſt by the Lycus, and on the ſouth by Adiabene. It contained the following cities, viz. Marde, Calaſh, Beſſara, and Reſen.

CALACTA, a maritime town, ſeated on the northern coaſt of Sicily. Ptolemy.

CALADE, in the *Manege*, a deſcent or ſlope in a riding-ground, by which to bring a horſe to bend his haunches, and form his ſtop, with the aids of the calves of the legs, bridle, and caveſon, ſeaſonably given.

The *calade* is alſo called, by the French, *baſſe.* They ſay to ride or gallop down the *calade.*

CALADIUM, in *Botany* a name given by Rumphius to a plant which Linnæus afterwards called Arum eſculentum. Ventenat has ſeparated it from Arum; and uniting it with the ovatum, the ſagittæfolium and arboreſcens of Linnæus, and the bicolorum of Aiton, with two others leſs known, has formed a new genus under the original name given it by Rumphius, with the following general character. *Spathe* ſwelling, folded in its lower part. *Spadix* or ament ſhorter than the ſpathe, ſimple, ſtraight, cylindric, with the male flowers on the upper part, and female on the lower. *Anthers* ſeſſile, diſpoſed in a ſpiral form, with twelve furrows full of pollen in molecules agglutinated together, and terminated at the top by a flat ſurface in the ſhape of a lozenge, which is ſprinkled with ſhining dots, and crenulated at its border. *Germs* numerous, orbicular, concave. *Stigma* ſeſſile, umbilicate; full of a viſcous liquor. The ſpace between the ſtamens and piſtils occupied by four rows of oblong, obtuſe, elevated glands. *Fruit* ſimilar to that of Arum. Its eſſential character, according to Ventenat, is founded on the ſituation and ſtructure of the anthers, and even of the pollen itſelf, on the direction and form of the glands, and on the umbilicated ſtigmas. See Arum.

CALADUNUM, in *Ancient Geography*, a town of Spain aſſigned by Ptolemy to the "Callaïci Bræcarii" in the Tarragonenſis, and ſituate, according to M. d'Anville, to the north-weſt of Aquæ Flaviæ.

CALÆI, iſlands of the Indian ocean, placed by Arrian at the mouth of the Perſic gulf.

CALÆNUS, a fountain of Aſia Minor in Lycia. Steph. Byz.

CALAF, in *Botany*, (Alpinus Ægypt.) See Salix Ægyptiaca.

Calaf, in *Geography*, *Karaighen-Soui*, a ſtream of Aſia in Meſopotamia, which, running from weſt to eaſt, diſcharges itſelf into the Tigris, near Amida.

CALAGORINA, a town of Spain, attributed by Ptolemy to the Vaſcones.

CALAGORRIS, Cazéres, a place of Gaul, belonging to the "Volcæ Tectoſages," at ſome diſtance S.W. of Toloſa, and comprehended within the Narbonnenſis Prima.

CALAGUM, Chailli, a place of Gaul, belonging to the "Meldi," S. E. of Meldi or Iatinum (Meaux.) It was included in the Lyonnenſis Quarta.

CALAGURIS, now Calahorra, a town of Hiſpania Citerior, ſeated on the Iberus, belonging to the Vaſcones. Alſo, a town of Spain, belonging to the Ilegertes, according to Ptolemy; now *Lobarre.* It was ſituated N. W. of Oſca.

CALAH, or Cale, in *Ancient Geography*, one of the four cities built by Aſhur, of which we have an account in Gen. x. 11, 12. This is ſuppoſed to be the Calach, ſituate about the ſprings of the river Lycus, and mentioned by Strabo as the capital of a province called Calachene, ſeeming to be the ſame with Ptolemy's Calacine, above Adiabene, towards mount Niphates.

CALAHORRA, in *Geography*, an epiſcopal town of Spain, in Old Caſtile, ſeated on the ſouth ſide of the Ebro, on the borders of Navarre; 62 miles N.W. of Saragoſſa. N. lat. 42° 18′. W. long. 2° 7′.

CALAIS, a ſea-port town of France, and chief place of a canton in the department of the ſtraits of Calais, and diſtrict of Boulogne; the place contains 6,750, and the canton 15,266 inhabitants; the territory includes 165 kiliometres, and 12 communes. Calais has a citadel on the N. W. ſide, and near the ſea, as large as the town, with one entrance, and is ſtrongly fortified; but its chief ſtrength depends upon its ſituation among the marſhes, which may be overflowed at the approach of an enemy. It is encompaſſed, except for a ſhort ſpace towards the harbour, by a moat and wall, which latter ſerves as a public walk. It is a regular well-built town, with a ſpacious and handſome ſquare, and its ſtreets are tolerably clean and well paved; and has ſeveral churches and monaſteries. Its harbour, formed by a ſmall rivulet, is too much obſtructed by ſand to admit of large veſſels, or even common merchant ſhips, except at high water. This haven ebbs dry at every tide; but at high water, with a common flow, it has not leſs than 3 fathoms. The flood ſets in N.E. by E. The harbour commences at the gate of the town, where a fine maſſive quay terminates in two long wooden moles, which extend far in to the ſea. Calais is a trading town, and in time of peace regular packets for the mail ſail from and to England; and other paſſage boats form a conſtant intercourſe between this place and Dover, from which it is diſtant 22 miles S.E. Some have ſuppoſed that an iſthmus formerly joined Calais and Dover; and that the rupture of it was occaſioned by an earthquake, and has been gradually widened by tides and currents. Calais communicates by means of canals with St. Omer's, Gravelines, Dunkirk, &c.

About the cloſe of the 12th century, Calais was only a fiſhing village; but from the ſucceſs of its inhabitants in the herring fiſhery, it ſoon acquired ſo much importance as to attract the notice, and excite the rapacity of the church; for in the year 1180, we find that pope Alexander III. granted the tithe of all the herrings there taken to the abbey of St. Bertin, recorded for its immenſe wealth, for the luxurious and diſſolute lives of its monks, and for the worthleſſneſs of its abbot. The honeſt fiſhermen, not readily comprehending the pope's right to give away their property, declared that they would ſooner decimate the monks than ſuffer their herrings to be decimated. They were, however, reduced to obedience by the count of Flanders, who was then their regent, as guardian to Ida, counteſs of Boulogne. Its walls and caſtle were built in the year 1228 by Philip count of Boulogne, brother of Lewis VIII.; but its municipal laws and privileges are ſuppoſed to have been granted by the counteſs Ida, and her fourth huſband, Renaud de Dammartin, in the year 1191. From theſe laws it appears that the city was governed by its own magiſtrates elected by the citizens, and by a bailiff appointed by the count. Among its privileges we find that, if a woman offered to take, as her huſband, a man condemned to death for theft, ſhe might demand and obtain his pardon. In 1347, Calais was taken by Edward III. of England, after having been reduced to extreme diſtreſs by famine. Edward, having been detained under its walls for eleven months by the obſtinate reſiſtance of its defenders, conveyed a meſſenger to the governor, who informed him that he would grant them no terms; but that they muſt ſurrender at diſcretion. At length, in conſequence of the ſpirited remonſtrances of the governor, and the interceſſion of ſir Walter Manny, whom he had deputed as his meſſenger, Edward conſented to grant their lives to the garriſon and its inhabitants, except ſix of the principal burgeſſes, who were required to deliver to him the keys of the city, with ropes about their necks. In this extremity of deep diſtreſs Euſtace de Pierre, one of the moſt wealthy merchants of the place, voluntarily offered to be one of thoſe ſix victims; and his example was ſoon followed by five others of the richeſt citizens. Theſe illuſtrious patriots, barefooted and bareheaded, with ropes about their necks, were attended to the gates by all the inhabitants with tears, bleſſings, and prayers for their ſafety. When they were introduced into the preſence of Edward, they laid the keys of the city at his feet, and, falling upon their knees, ſupplicated his mercy in ſtrains ſo moving, as to melt the ſpectators into tears. The queen enforced their interceſſion and implored and obtained their lives. Having thus ſucceeded, ſhe conducted them into her own apartment, entertained them honourably, and diſmiſſed them with preſents. Edward, having taken poſſeſſion of the city, found it neceſſary to turn out all the ancient inhabitants, and to people it with Engliſh. Calais remained from this time in ſubjection to England till the reign of queen Mary, when it was retaken by the duke of Guiſe. The duke obliged all the inhabitants to abandon the place, and conferred the government of it upon Des Termes, who was ſoon after made a marſhal of France. By the treaty at Chateau Cambreſis, it was agreed, that Calais ſhould, after the expiration of 8 years, be reſtored to England; and, at the expiration of that term, queen Elizabeth diſpatched ſome troops to recover it; but the ſurrender was refuſed, becauſe, five years before, the Engliſh had taken Havre, and violated the terms of the treaty. In the year 1596, it was taken by the Spaniards, under the conduct of the archduke Albert, but was reſtored two years after by the peace of Vervins. In 1694, it was bombarded by the Engliſh, under ſir Cloudeſly Shovel, but without ſuſtaining much damage. Calais is diſtant 7 leagues from the South Foreland, and 40 from Dunnoſe; 5 poſts S.W. from Dunkirk, and 34½ N. from Paris. N. lat. 50° 57′ 31″. E. long. 1° 50′ 56″. High water 11° 30′.

Calais, *St.* a town of France, and principal place of a diſtrict in the department of the Sarthe; 6 leagues E.N.E. of Chateau du Loir. The place contains 3,630, and the canton 13,749, inhabitants; the territory comprehends 307½ kiliometres and 14 communes. N. lat. 47° 56′. E. long. 0° 39′.

Calais, a townſhip of Caledonia county, and ſtate of Vermont, in America; 105 miles north-eaſterly of Bennington; containing 443 inhabitants.

CALAMA, in *Ancient Geography*, *Gelma*, or *Kalma*, an epiſcopal town of Africa in Numidia; ſituate to the ſouth weſt of Hippo-regius. St. Auguſtine mentions a diſturbance that happened in this place, A.D. 408, or 409; and that ſoon ſucceeded a law enacted by Honorius in 407, or 408, expreſsly prohibiting the ſolemnities of the Gentiles.

Calama, the name of a village of Aſia, in Carmania, or Gedroſia, according to Arrian.

Calama, in *Geography*, a town of Naples in the province of Calabria Ultra; 6 miles N.E. of Reggio.

CALAMÆ, or Calames, in *Ancient Geography*, a burgh of Peloponneſus, in Meſſenia, ſeated on the river Aris, and mentioned by Polybius and Pauſanias.

CALAMAGROSTIS, in *Botany*, (Trag. ic. Dalech. Hiſt.) See Triglochin *paluſtre*. Linnæus has given it as a trivial name to a ſpecies of Agroſtis, and alſo to one of Arundo. Dr. Withering has made it a generic appellation for ſuch ſpecies of Arundo as have only one floret in a calyx: but, as Dr. Smith juſtly obſerves, (Flor. Brit. vol. i. p. 145.) the very natural genus arundo ought not to be broken merely on account of a difference in the number of florets, and, if that were not the caſe, the term calamagroſtis is not admiſſible, as a generic name, on the eſtabliſhed principles of the Linnæan Nomenclature.

CALAMANCO, in *commerce*, a wollen ſtuff manufactured in Brabant and in Flanders, particularly at Antwerp, Liſle, Tournay, Turcoin, Roubaix, and Lannoy.

It is commonly woven wholly of wool; there are ſome, however, wherein the warp is mixed with ſilk, and others with goat's hair. There are calamancos of all colours, and diverſely wrought. Some are quite plain, others have broad ſtripes adorned with flowers; ſome with plain broad ſtripes; ſome with narrow ſtripes; and others watered. This has been alſo no inconſiderable branch of the woollen manufacture in England, both for home wear and exportation; but of late it has declined.

CALAMRACUM, in *Ancient Geography*, a place of Italy, in Magna Græcia, between Petitia, and the marſh of Lucania.

CALAMARIA, in *Botany*, (Dillen. Muſc.) See Isoetes *lacuſtris*.

CALAMARIÆ, one of the natural orders of Linnæus, nearly allied to the graſſes, and having commonly the ſame kind of leaves, but differing from them in not having a two-valved glume. The calamariæ have a culm which is generarly triquetrous, rarely cylindrical, often leafleſs, or bearing only a few leaves. The leaves are generally more rigid and rough, and the flowers are often diſpoſed in an imbricated manner. The genera enumerated in the Syſtema Naturæ are, bobartia, (but the genus is now aboliſhed; ſee Bobartia,) ſcirpus, cyperus, eriophorus, carex, and ſchænus; with a doubt, whether flagallaria, juncus, and ſcheuchzeria ſhould not be added. In the poſthumous lectures of Linnæus, as publiſhed by Giſeke, they ſtand thus: ſparganium, typha, eriophorum, ſcirpus, carex, ſcleria, cyperus, ſchænus, reſtio, gahnia, kyllingia, fuirena. The genus ſcleria is added by Giſeke.

CALAMARIUS, in *Zoology*, a ſpecies of Coluber, having 140 abdominal plates, and 22 caudal ſcales. Linn. Muſ. Ad. Fr.

This kind inhabits America: general colour livid with linear brown ſtreaks and dots: beneath teſſellated with brown.

CALAMATA, in *Geography*, a town of European Turkey, in the Morea, ſeated on the river Spinazza; taken by the Venetians in 1685, but ſince retaken, together with the reſt of the Morea, by the Turks; 13 miles W. of Miſitra.

CALAMBA, or Calambac, in *Commerce*, a kind of wood brought from China, uſually ſold under the denomination of *lignum* aloes, or agallochum.

Sir Phil. Vernatti makes calambac and lignum aloes ſynonymous. Others ſeem to diſtinguiſh, reſtraining calamba wood to the beſt ſort of aloes wood, growing chiefly in Malacca, and Sumatra; and much uſed in India for making of beads and crucifixes. Phil. Tranſ. N° 43. p. 863.

CALAMENTHA, or Calamintha, in *Ancient Geography*, a town of Africa, in Libya, belonging to the Phœnicians.

CALAMIANES, in *Geography*, a cluſter of iſlands in the Indian Sea, among thoſe called the "Philippine Iſlands," ſituate at a ſmall diſtance from the northern cape of Paragua, and weſt from Manilla, and giving name to a province or government. They are reckoned twelve in number, which are all ſmall, and inhabited by peaceable Indians, who pay tribute. The chief product of their mountains is wax, which they gather twice in the year. The rocks over the ſea afford ſome of the eſteemed birds' neſts, and on the coaſts are fine pearls.

CALAMIDES, a cluſter of iſlands, amounting to about ſeventeen, ſituate in the Indian Ocean, 14 or 15 leagues S.W. of Luban, and forming a province; the largeſt of which is Paragua, which ſee.

CALAMIFEROUS, in *Botany*, a denomination given by ſome to thoſe otherwiſe called culmiferous plants.

CALAMINA, in *Ancient Geography*, a lake of Aſia, in Lydia; in which, according to Pliny, were floating iſlands, which, during the Mithridatic war, ſerved as a place of refuge for the Roman citizens.

CALAMINE, or Lapis Calaminaris, is an ore of Zinc, which ſee. The lapis calaminaris, calcined, powdered, and ſifted, forms a heavy browniſh-yellow, powder, which when mixed with wax and oil forms the "ceratum lapidis calaminaris," (ceratum epuloticum of the old diſpenſaries,) the moſt commonly uſed of all the ſimple unguents. Calamine is much uſed for taking off films from the eyes of horſes, &c.

Calamine, in *Rural Economy*, an ore of zinc, having a white-gray brown, or red colour, and varying in hardneſs. It is found in Derbyſhire, and ſome other diſtricts, and is ſuppoſed by ſome writers to be capable of being made uſe of in agriculture with advantage, from its containing oxygen in a large proportion, as one of its conſtituent principles. Too few experiments have, however, yet been made with this material to fully aſcertain its utility in this application.

CALAMINT, in *Botany*, (Smith Flor. Brit.) See Thymus *Calamintha*, and *Nepeta*, removed by Dr. Smith from Meliſſa.

CALAMINTHA, (Pluk. Mant. 34. t. 344. *fig.* 1. Moriſ. Hiſt. iii. p. 413. S. 11. t. 19. f. 7.) See Cunila *mariana*.

Calamintha *arvenſis verticillata*, (Baub, Pin. 229). See Mentha *arvenſis*.

Calamintha *aquatica belgarum*, (Lob. ic. 505.) See Mentha *exigua*.

Calamintha *hederacea*, (Scop.) See Glechoma hide *racea*.

Calamintha *magno flore*, (Bauh. Pin. 229. Riv. Mon. 43.) See Meliſſa *grandiflora*.

Calamintha *vulgaris*, (Bauh. Pin. 228.) montana, (Dod. Pemp. 98. Riv. t. 46. Blackw. t. 166.) See Meliſſa *calamintha*, Linn. Thymus. Dr. Smith.

Calamintha *pulegii odore*, (Bauh. Pin. 228.) *montana præalta*, (Bocc. Muſ. 2. p. 45. t. 40 & 38. Riv. t. 47. Kniph. Cent. 7. n. 27.) See Meliſſa *nepeta*, Linn. Thymus. Smith.

Calamintha *incana*, (Bauh. Pin. 228. Pulegii odore minor Bar. ic. 1166.) See Meliſſa *cretica*.

Calamintha *hiſpanica fruteſcens*, (Tourn. Inſt. 194.) Montana incana minor. (Moriſ. Hiſt. 3. p. 413. n. 3.) See Meliſſa *fruticoſa*.

Calamintha *tertium genus*, (Fuch. Hiſt. 436.) See Inula *dyſenterica*.

CALAMINTHA, in *Ancient Geography*, a town of Libya, probably of Mauritania, taken notice of by Herodotus and Hecatæus, whoſe ſituation is unknown; but ſuppoſed by Bochart, from the etymology of the name in the

Phœnician language, to be ſeated on an eminence, and of Phœnician original.

CALAMISSUS, a town of Greece, in the country of the Locrii Ozolli, ſituated, according to Pliny, on the Criſſæan gulf, and placed by M. d'Anville, under the name of Cala, to the weſt of Naupactus.

CALAMITA *ſtorax.* See Storax.

CALAMITES, in *Natural Hiſtory*, a name given by ſome to the oſteocolla, which, when in ſmall pieces, ſometimes pretty exactly reſembles the barrel of a quill; others have called ſome of the foſſile coralloides by this name, there being frequently in them the reſemblance of ſeveral quills cemented together in ſtone.

CALAMITIS is uſed for a ſpecies of artificial *cadmia*, found adhering to the ſticks, ladles, and other utenſils wherewith they ſtir the copper when in fuſion in the furnace. It is denominated *calamitis*, from the Latin *calamus*, *a reed*, on account of its reſemblance to the figure of a reed cloven in the middle.

CALAMO, in *Geography*, ſometimes called *Calmino*, or *Calimena*, an iſland in the Archipelago, near the coaſt of Aſia, not far from Mitylene, about 5 or 6 leagues in circumference. The ancients called it *Claros*: Pliny alſo diſtinguiſhes it by the name of *Calydna*, and Ovid has extolled the abundance of honey which it produced: "Fœcundaque melle Calydna." Metam. l. viii. On this iſland are ſome lofty mountains, an inconſiderable population, and the remains of an ancient town on the weſt coaſt, and, on the other ſide, a village, called *Calamo*, built on the ſummit of a mountain, and near it a tolerable good harbour. This iſland is poor and incapable of providing ſubſiſtence for its inhabitants; and it is therefore chiefly occupied in procuring foreign reſources by a carrying trade. Its mountains contain minerals, which, under the Turkiſh government, are a ſource of oppreſſion and ruin.

CALAMOCHA, a town of Spain, in Arragon, ſeated on the Xiloca; 14 miles S. of Daroca.

CALAMON, or Calamos, in *Ancient Geography*, *Kalemony*, a town of Phœnicia, ſituate on the ſea-coaſt, at the ſouthern extremity of mount Carmel. Pliny ſays, that it was burnt by Antiochus the Great.

CALAMOTI-Sinus, the gulf of Propontis, in Aſia Minor, at the entrance of the Thracian Boſphorus, ſouth-eaſt of Byzantium.

CALAMUS is commonly uſed to denote the ſame with *arundo*, a reed, ruſh, cane, or flag.

Calamus, in *Botany*, (Καλαμος, the uſual name among the Greeks for a reed, and applied by them to ſeveral plants, chiefly aquatic, with hollow ſtems. See Theophraſtus, Hiſt. Plant. lib. iv. cap. 12.) Linn. gen. 436. Schreb. 589. Willd. 669. Gært. 801. tab. 139. Lam. illuſt. pl. 770. Juſſ. 37. Vent. vol. ii. 122. Rotang, Encyc. Meth. and Nouveau Dict. Rattan. Claſs and order, *hexandria monogynia*, Linn. Gært. Vent. *Monœcia hexandria*, Lam. to which diſpoſition Juſſieu alſo inclines. Nat. Ord. *Tripetaloideæ*, Linn. *Palmæ* Juſſ. Vent.

Gen. Ch. *Cal.* permanent, of ſix leaves, or in ſix diviſions; the three outer ones ſhorter and broader; the three inner ones longer, narrower, and acuminate. *Cor.* none. *Stam.* filaments ſix, capillary, longer than the calyx, (often ſeparate from the piſtil, Poiret): anthers round. *Piſt.* germ ſuperior, roundiſh: ſtyle trifid, round, ſpiral, thread-ſhaped: ſtigmas three, ſimple. *Peric.* membranous, top-ſhaped, or globular, covered with ſcales imbricated backwards and obtuſe, one-celled, at firſt pulpy, afterwards dry. *Seeds* one, two, or three, globular, fleſhy.

Eſſ. ch. *Calyx* of ſix leaves, or with ſix diviſions. *Corolla* none. *Fruit* a one-celled berry covered with ſcales imbricated backward.

Obſ. The three inner leaflets of the calyx have the appearance of petals, and it is not eaſy to determine why they were not conſidered as ſuch by Linnæus. The diviſion of the ſtyle and the three ſtigmas make it probable that theſe are naturally the rudiments of three germs, but two of them generally prove abortive. Juſſieu obſerves that this genus forms the connecting link between the palms and the graſſes, having the flower of the former and the habit of the latter. The ſago palm ſo nearly reſembles calamus in its parts of fructification that it ſcarcely ſeems a diſtinct genus. The only difference between them, according to Gærtner, is that the flowers of the former are monoicous, and of the latter hermaphrodite; and that the embryo of the former is on the ſide, and of the latter at the baſe of the ſeed. As the flowers, at leaſt of one ſpecies of calamus, are now allowed to be monoicous, the former difference vaniſhes; and whether the latter alone be a ſufficient generic diſtinction, may juſtly be doubted in the preſent imperfect ſtate of our knowledge.

Linnæus makes only one ſpecies, but mentions eight varieties, all taken up from Rumphius, who calls them Palmijunci from their ſimilarity to the palms in their fructification, and to the junci, or ruſhes, in their flexibility. Loureiro has diſtinguiſhed and deſcribed ſix ſpecies. Willdenow has enumerated eight, at the ſame time acknowledging that he cannot identify the ſcipionum, amarum, and dioicum of Loureiro. Poiret has extended them to twelve, from the deſcriptions of different authors, but without being abſolutely certain that his ſynonyms are in all caſes exact. As he is the lateſt writer on the ſubject, we ſhall take him for our guide.

Sp. 1. C. *petræus*, Lour. (Rotang. Willd. var. and Linn. Arundo zeylanica ſpinoſiſſima Burm. zeyl. 36. Flor. 468. Tſieru-tſieſel: Rheed Mal. v. 12. p. 12. t. 64. Palmijuncus calapparius: Rumph. Amb. v. 5. p. 97, t. 51.) "Stem thick, ſet with prickles; prickles erect; ſpadix erect." Willd. *Stems* more than a hundred feet high, and at leaſt the thickneſs of a man's arm: internodes cylindrical, unequal, furrowed, ſpotted, about a foot long, downy towards the ſummit. *Leaves*, or fronds, in terminating tufts, alternate, winged; leaflets ſword-ſhaped, long, ſtraight, beſet with numerous, ſtraight, long, very ſharp prickles. *Spadix* nearly ſtraight, moderately branched. *Calyx* with ſix diviſions. *Berry* rather egg-ſhaped, acuminate. A native of the Eaſt Indies and Cochinchina, where it is uſed for making long pikes. The inner part of the young ſhoots, ſtripped of the bark, is eaten either boiled or roaſted on the hearth. The fruit is pleaſantly acid. 2. C. *rudentum*, Lour. (C. rotang var. γ Linn. Palmijuncus albus: Rumph. t. 53.) "Prickles of the ſtem reflexed; ſpadix divaricated, ſtraight." Willd. *Stems* very tough, not more than an inch thick, but riſing by the means of trees, and paſſing from one tree to another, ſometimes to the length of more than five hundred feet; internodes nearly equal, round, a foot and a half long. *Leaves*, long, winged, reflexed; common petiole lengthened into a naked, pendant, prickly filament; leafleſs, ſhort, ſtraight, acuminated, downy, terminated by a long briſtle. *Spadixes*, large, ſpreading out in a looſe panicle. *Flowers*, numerous, nearly ſeſſile. *Berries*, very ſmall. It is one of the moſt common ſpecies, and is uſed inſtead of ropes to bind untame elephants, to draw heavy loads, and to make cables for ſhips. 3 C. *ſcipionum*, walking cane, rattan. Lour. (Katutſiurel: Rheed. Arundo rotang dicta: Piſon mant. 188. La Marck. Illuſt. pl. 770 f. 1.) "Internodes of the ſtem, very long, awl-ſhaped ſhining; prickles recurved, ſpadix thick, with ſhort branches." Poiret. *Stems* ſmooth, gloſſy, marked with dark ſpots; internodes three feet long, or more, unequal. *Leaves*, winged; leaflets, ſword-ſhaped, acuminate; armed as well as the petioles, with ſhort, recurved, prickles. *Flowers*, few, but rather crowded on the branches of the ſpadix. *Berry*, globular, of a moderate ſize, and a clear yellow colour. *Seed*, one, globular. It grows abundantly on both ſides of the ſtraits of Malacca, whence it is exported into China and Europe; and on account of its long internodes and gloſſy ſurface, has been long preferred for walking canes. 4. C. *verus*, Lour. (Palmijuncus verus: Rumph. t. 54. rotang var. δ. Linn.) "Prickles of the ſtem horizontal: ſpadix erect; three of the leaflets of the calyx very long." Willd. *Stem*, ſingle, and not, as in other ſpecies, ſeveral from the ſame root; more than a hundred feet high, and about the thickneſs of a man's finger; very flexible, and of a yellowiſh brown colour; internodes very long, almoſt equal. *Leaves* long, winged; leaflets ovate lanceolate, three-nerved. *Spadixes* racemed. *Spathes* oblong, prickly. The three interior leaflets of the calyx whitiſh, having the appearance of petals. *Berry* rather large, brown; common in foreſts in the Eaſt Indies. Its ſtem cut into thongs, is uſed to make cables and other ropes, cane chairs, and many kinds of houſhold furniture. 5. C. *ſecundiflorus*. Beauvois, t. 9. 10. "Leaves, winged, flexible, reflexed, gibbous at the baſe, cultrate at the margin; leaflets prickly at the baſe." A ſhrub. *Leaves*, long, winged, without leaflets at their ſummits, but armed with ſeveral pairs of large prickles; oppoſite, almoſt triangular without, flat, or a little concave within; leaflets prickly at their edges. *Calyx*, with three ſhort exterior diviſions in the form of ſcales: the three inner ones longer. *Stigma*, capitate, almoſt trifid. *Berry*, nearly globular. A native of Africa, in the kingdom of Benin. By the means of the prickles on the edges of its leaflets, it firmly attaches itſelf to other plants; and its own leaves, which hang down to the ground, are ſo cloſely entangled together, that each ſhrub forms an impenetrable buſh, which affords a ſure defence to the ſmaller animals againſt their numerous enemies. M. Beauvois has ſeen the neſts of the termites, in the kingdom of Benin ſo compleatly covered by theſe ſhrubs, as ſcarcely to leave a paſſage for the ſmalleſt bird. 6. C. *amarus*, Lour. "Prickles crowded, ſhort: leaflets linear; ſpadixes remote; ſpathes partial." *Stems*, about the thickneſs of a finger, about 60 feet high, hardiſh, even, pale-coloured; internodes long, round, almoſt equal. A native of Cochinchina. It is uſed for the ſame purpoſes as the preceding, and is more durable. 7. C. *draco*, Willd. (rotang var. ϑ, Linn. Palmijuncus Draco, Rumph. t. 58. f. 1.) "Prickles of the ſtem preſſed cloſe to it; of the leaves ſpreading; ſpadix erect." Willd. *Internodes* from two to three feet long, of the thickneſs of a finger, unequal. *Leaflets* alternate, linear, acuminate, narrowed at their baſe, beſet with a few hairs. *Spadix* branched into ſmall ſhort racemes. *Berries* egg-ſhaped, about the ſize of a hazel nut, terminated by a blunt point. *Seed* one, ſmooth, oval. From this ſpecies is obtained the gum, commonly called Dragon's blood. 8. C. *niger*, Willd. (var. β, Linn. Palmijuncus niger, Rumph. t. 22.) "Prickles of the ſtem and of the leaves horizontal: ſpadix compact, pendulous," Willd. *Stems* thick, armed with prickles, which enter eaſily into the ſkin and then break off. *Leaves* very long, alternate, winged; leaflets alternate, ſtraight, narrowed almoſt into a petiole at their baſe, acuminate. *Spadixes* axillary, in tufted racemes. *Berries*, globular, ſcarcely the ſize of a ſmall pea. A native of the Eaſt Indies. Its ſtems do not eaſily ſplit, and are ſo irregular in their ſhape, that they are not of the ſame uſe as ſeveral of the other ſpecies. 9. C. *viminalis*, Willd. (rotang var. ε, Linn. Palmijuncus viminalis Rumph. t. 55.) "Prickles of the ſtem ſpreading; of the leaves, diſtant, reflexed: ſpadix nodding:" Willd. *Stems* about the thickneſs of a gooſe-quill; internodes, about a foot long on the lower part, ſhorter near the ſummit, where they are armed with ſtraight, horizontal, very fine prickles. *Leaves* alternate, diſtant, winged; petioles lengthened beyond the leaflets; leaflets ſtraight, long, acuminate, armed with reflexed prickles. *Spadixes* axillary, branched in rather ſpreading racemes. *Flowers* peduncled, almoſt oppoſite. *Berries* very ſmall. A native of moiſt foreſts in Java and the Celebes Iſlands. Its ſtems anſwer the purpoſes of ozier, and divided into ſhreds, make ſeveral kinds of houſhold furniture. 10. C. *equeſtris*, Willd. (rotang var. ζ Linn. Palmijuncus equeſtris, Rumph. t. 56. and t. 57. f. 1.) "Prickles of the ſtem erect, ſpreading; of the leaves hooked; leaflets elliptic; ſpadix erect." Willd. *Stems* ſlender, very ſupple; internodes ſhort, equal, ſmooth, furniſhed near their ſummit with alternate, winged leaves. *Leaflets*, alternate, from eight to ten inches long; petioles extended beyond the leaflets, but prickly to the end. *Berries* round, about the ſize of a pea. A native of humid, rocky places, in the iſland of Amboina. It is in general uſed in the Eaſt Indies as a riding cane. 11. C. *dioicus*, Lour. "Stem very ſlender; leaves and prickles ſhorter; flowers dioicous." Nearly allied to the two preceding. It may poſſibly be only a variety of one of them: or it perhaps is an intermediate ſpecies. *Stems* ſlender, ſcarcely the thickneſs of a gooſe-quil, twenty feet high, very flexible and regular, pale and gloſſy; internodes a foot long; leaves winged. *Calyx* with ſix unequal diviſions; the three inner ones reſembling petals, white, ovate-lanceolate, ſtriated. A native of Cochinchina, on the banks of rivers. 12. C. *zalacca*, Willd. Gært. Tab. 139. f. 1. Lam. Pl. 770. fig. 2. copied from Gærtner. (C. rotang. var. η, Linn; Zalacca, ſeu rotang zalak, Rumph. t. 57. f. 2. Fructus Baly inſulæ pyriformis, J. Bauh. Hiſt. p. 401, with a figure.) "Prickles ſpreading; ſpadix radical," Willd. *Stem*, none. *Leaves* in a tuft, from the crown of the root, from ten to twelve feet long, winged; leaflets long, acuminate; petioles ſtrong, ſtraight, ſpreading, prickly. *Spadixes* racemed, nearly radical. *Berries* rather large, top-ſhaped, of an irregular form from their preſſure againſt each other; rind thin, papery; ſcales ſomewhat cartilaginous; the upper ones erect, linear; the reſt preſſed cloſe, imbricated downward; marked with a raiſed line along the middle, and a little reflexed at the tip, ſo as to make the berry rough to the touch. *Seeds* three, fixed to the bottom of the berry, two generally abortive, nearly globular, with a ſmall umbilical fungous, thick, rather heart-ſhaped lobe affixed to them below. Gært. Fruit rather larger than a pear, of a pleaſant acid flavour, which has been compared to that of the pineapple. They are eaten either raw or pickled, and are a general ſea-ſtore. A native of Java, and other parts of the Eaſt Indies. This ſpecies has the habit of a palm, and connects the others with the ſago Palm. See SAGUS.

CALAMUS, in *Ancient Geography*, a place ſituated on the Thracian Boſphorus, which is ſaid to have taken its name from the quantity of roſes which grew there

CALAMUS *aromaticus*, in *Botany*. See ACORUS *Calamus*.

CALAMUS *aucupatorius*, or *calamus ſtructus*, among *Fowlers*, ſignifies a *bird*-CALL.

CALAMUS *indicus petrifactus*, in the *Natural Hiſtory of the Ancients*, a name given to a ſubſtance found often in the foſſile kingdom uſually of about three inches long, half an inch broad, and one third of an inch thick, and covered all over its ſurface with large round figures in form of radiated ſtars within. This very much reſembled in external appearance the root of our common *calamus aromaticus* of the ſhops turned into ſtone, and ſeems to have been vulgarly ſuppoſed to be that ſubſtance petrified. The more accurate among the early writers, however, have by no means countenanced ſo wild a conjecture; and Theophraſtus, though he records the ſubſtance under that name, as it had no other in his time, yet joins it to the corals, which, he ſays, grow in the ſea, and are vegetables; and adds, that thoſe and this ſubſtance are properly the ſubſtance of another treatiſe, not of a hiſtory of ſtones.

This author's placing it among the CORALS is perfectly right, ſince the ſpecimens of it now found are plainly no other than corals of the ſtellated kinds, which have been long buried in the earth.

CALAMUS *odoratus*, Mathioli, in *Botany*. See ANDROPOGON *nardus*.

CALAMUS *paſtoralis*, in *Muſic*, the ſhepherd's pipe; an ancient muſical inſtrument, the origin of the flute; at firſt, made of a ſtraw or reed: *avena* and *calamus*. It ſhould ſeem as if the μοναυλος, *monolos*, with holes to produce different tones, muſt have been ſuggeſted by the ſyrinx, or Pan's pipe, an inſtrument in which pipes of different lengths, of one tone each, without ventiges, produced the ſcale by moving them over the lips; but afterwards it was diſcovered, (as it is ſaid, by Minerva,) that one ſingle pipe, perforated, would furniſh as great a variety of ſounds, and more conveniently than all the pipes of the *fiſtula Panis*. Flutes were improved and multiplied almoſt to infinity. See Pl. of ancient muſical inſtruments, and Hiſt. vol. i. pp. 408, and 412. According to Horace, the flute had undergone various changes and improvements from its firſt invention:

Tibia non, ut nunc, orichalco vincta, tubæque
Æmula; ſed tenuis ſimplexque, foramine pauco,
Aſpirare.—— A. P. 202. See FLUTE.

CALAMUS *ſcriptorius*, properly denotes a reed or ruſh to write with, anſwering to the uſe of the ancient ſtylus and modern pen. The ancient Egyptian calamus was a ſort of *arundo aquatica* growing plentifully about Memphis, and on the banks of the Nile: whence it was alſo called *calamus Memphiticus*, *Niloticus*, &c.

CALAMUS *ſcriptorius*, in *Anatomy*, is a dilatation of the fourth ventricle of the brain; ſo called from its figure, which reſembles that of a quill. See BRAIN.

CALAMUS alſo denotes a ſort of meaſure otherwiſe called CANNA, CANE, or reed.

CALAMY, EDMUND, in *Biography*, an eminent divine among the Engliſh Nonconformiſts of the 17th century, was born in London in the year 1600, and educated at Pembroke Hall in the univerſity of Cambridge; where he took his degrees of bachelor of arts, and bachelor of divinity, but on account of his hoſtility to the Arminian party, he was prevented from obtaining a fellowſhip in that ſociety, to which his ſtanding, talents, and literary acquirements entitled him. His ſtudious diſpoſition and religious character, however recommended him to Dr. Felton, biſhop of Ely, who made him his domeſtic chaplain, and gave him the vicarage of Swaffham priory in his neighbourhood. In this ſituation, he ſtudied at the rate of 16 hours a day, and acquired that large fund of ſolid and uſeful learning, which enabled him to diſcharge, with great ability, the ſeveral offices which he afterwards occupied. After the death of the biſhop in 1626, he was choſen one of the lecturers at Bury St. Edmund's, and reſigned his vicarage. During his 10 years' reſidence in this place, he diſtinguiſhed himſelf for the moſt part as a ſtrict conformiſt; but when biſhop Wren's articles, and the reading of the book of Sports were enforced, he avowed his diſſent, made a public apology for his conduct from the pulpit, and, from this time, was regarded as an undiſguiſed and active nonconformiſt. Being much in favour with the earl of Eſſex, he was preſented by his lordſhip with the rectory of Rochford in Eſſex, which, though a valuable preferment, was, on account of the inſalubrity of its ſituation, the occaſion of permanent injury to his conſtitution. In 1639, he was choſen miniſter of St. Mary, Aldermanbury, and removed to London, where he took an active part in the controverſy concerning church government, which was then agitated. In 1640 he engaged with other writers in the compoſition of the famous book, entitled "Smectymnuus," from the initials of the names of thoſe that were concerned in it; viz. Stephen Marſhall, Edmund Calamy, Thomas Young, Matthew Newcomen, and William Spurſtow. This treatiſe, though written with a conſiderable degree of aſperity, has been conſidered, not only by the Nonconformiſts, but by Dr. Wilkins, biſhop of Cheſter, as a capital work againſt epiſcopacy. Calamy himſelf ſays of it, that it gave the firſt deadly blow to this ſyſtem of church government. In 1641, Mr. Calamy was appointed by the houſe of lords a member of the ſub-committee, which ineffectually attempted to accommodate the differences that ſubſiſted with regard to religion. And he afterwards diſtinguiſhed himſelf, by his learning and moderation, in the aſſembly of divines. He was alſo at this time one of the moſt eminent preachers in the city of London, and held in high eſtimation, particularly by the Preſbyterian party. With this party he concurred in oppoſition to the Independents and Sectaries, and in teſtifying his diſapprobation of the violent meaſures that brought on the king's death, an event which he ardently deprecated. During the uſurpation of Cromwell, he withdrew from all public concerns; but he boldly oppoſed the project of his ſingle government, which he undertook to prove to be both unlawful and impracticable. As ſoon as a favourable opportunity occurred, he was active in promoting the reſtoration of Charles II.: and he was one of the divines delegated to compliment the king in Holland on the occaſion. In 1660, he was appointed one of his majeſty's chaplains; and he was offered the biſhopric of Litchfield and Coventry, which after previous deliberation he declined accepting. As ſoon as the act of uniformity was paſſed, he conſcientiouſly diſcontinued his public ſermons in the church, and preached his farewell ſermon at Aldermanbury, Auguſt 15, 1662. He joined ſeveral of his brethren, however, in a petition to the king for liberty to retain their public functions, and on the occaſion made a long and moving ſpeech; but this laſt effort for toleration proved ineffectual. After he had ceaſed to officiate in the church, he attended its public ſervice; at one time, viz. December 28, 1662, when the appointed preacher did not appear, he was urged by ſome of the principal pariſhioners to take his place; but taking occaſion to ſpeak with freedom concerning the pariſh, and the ſituation to which he was then reduced, he was arreſted by the lord mayor's warrant, and committed to Newgate. Doubts, however, occurred as to the legality of his confinement, and the hardſhip of his caſe being duly conſidered, he was liberated in a few days by the king's order. After the fire of London, he was driven over its ruins in a coach on his way to Enfield; and the ſight ſo much affected him, that he died within two months afterwards, October 29, 1666.

Mr. Calamy was well acquainted with the ſubjects appropriate to his profeſſion; as a preacher, he was plain and practical; and he boldly avowed his ſentiments on all neceſſary occaſions. Several of his ſermons, delivered on particular occaſions, were printed ſeparately; and a ſet of five ſermons, entitled "the godly Man's Ark, or a City of refuge in the Day of Diſtreſs," was publiſhed in 1683, 12mo, and became a very popular book in thoſe times. Biog. Brit.

Calamy, Benjamin, a divine of the church of England, of the 17th century, was the ſon of the preceding by a ſecond wife, and having received the rudiments of education at St. Paul's ſchool, he completed his courſe at Catharine Hall Cambridge, of which he became a fellow, and an eminent tutor. In 1677, he was choſen miniſter of St. Mary, Aldermanbury, and ſoon after appointed one of his majeſty's chaplains in ordinary; and in 1680, he took his degree of doctor in divinity. The attention of the public was very much engaged by "A Diſcourſe about a ſcrupulous Conſcience," which he publiſhed in 1683. It was dedicated to ſir George Jefferies, afterwards the chancellor of notorious memory, whom he compliments as his friend and patron. This diſcourſe, which was deſigned to ſhew the crime and danger of ſeparating from the eſtabliſhed church on the pretext of a tender conſcience, and which inculcates the notion, that "ſuch wayward, ſkittiſh conſciences, as doubt of and ſuſpect the rights of the crown, ought to be well bridled and reſtrained," was much decried by one party, and extolled by the other. Mr. Thomas de Laune, a Nonconformiſt ſchool-maſter, publiſhed a warm reply to this diſcourſe, for which, and ſome other intemperate publications, he was committed to Newgate, and ſentenced to pay a fine, which he was unable to diſcharge; ſo that the event proved fatal to himſelf, his wife, and children. It is alledged, however, in vindication of Dr. Calamy, that he exerted himſelf in favour of this antagoniſt; and that though he avowed himſelf a ſtrenuous advocate for the principle of religious intolerance, and was unfortunate in the ſelection of his patron, he was far from poſſeſſing the ſpirit of a perſecutor: and it is further ſaid, that his opinions on this topic underwent ſome change before his death. In conſequence of the high eſtimation in which he was held by the beſt men of all parties in the city of London, he obtained in 1683 the vicarage of St. Lawrence, Jewry, and in 1685, a prebend in the cathedral church of St. Paul. Towards the cloſe of the year 1685, his health declined in conſequence, as it is ſaid, of the calamitous ſtate of public affairs, by which he was deeply impreſſed, and he died of a pleuritic complaint in January, 1686. He was diſtinguiſhed by his zealous attachment to the government and church of England; and at the ſame time reſpected and eſteemed for his piety and charity, by perſons of different denominations. As a preacher, he was much applauded: and ſome of his poſthumous ſermons, publiſhed by his brother, have been frequently reprinted, and are at this day read and admired. Biog. Brit.

Calamy, Edmund, an eminent diſſenting divine, was grand-ſon of the firſt Edmund Calamy, by a father of the ſame name, and born in London, in 1671. After a previous courſe of education in ſome private and public ſchools, he was placed under the tuition of Mr. Samuel Cradock, by whom he was inſtructed in logic, metaphyſics, and natural philoſophy. In 1688, he removed to the Univerſity of Utrecht, where he diſtinguiſhed himſelf by his proficiency in philoſophy and law, under De Vries, Vander Muyden, and Grævius, ſome of the moſt learned profeſſors in their reſpective departments at that period. In theſe ſeveral ſtages of education, Mr. Calamy recommended himſelf to his tutors by the diligence of his application, and to all his aſſociates by the ſweetneſs of his temper, and the urbanity of his manners. Having declined the offer of a profeſſorſhip in the college of Edinburgh, he returned from Holland to England, and ſpent ſome time at Oxford, without becoming a member of the univerſity, availing himſelf of the patronage and counſel of Dr. Pocock, and Dr. Edward Bernard, and alſo of the inſtructive converſation of Mr. Henry Dodwell. Determining to devote himſelf to the profeſſion of divinity, he directed his courſe of ſtudies to this object; and having deliberately inveſtigated the grounds of the controverſy between the eſtabliſhed church and the Separatiſts, he reſolved to connect himſelf which the latter; and in 1692, he commenced the regular exerciſe of his miniſtry at a meeting-houſe in Black-fryars, London. In 1694, he was ordained; and this was the firſt inſtance of the kind that was performed among the diſſenters, after the paſſing of the act of uniformity: and in 1703, he was choſen paſtor of a large and reſpectable congregation in Weſtminſter. To the diſſenters he performed an acceptable ſervice, by publiſhing "Baxter's Hiſtory of his Life and Times," which he afterwards abridged, annexing an account of many of the ejected miniſters, and an apology for their non conformity. Baxter's hiſtory terminated with the year 1684; but Calamy's continuation extended to the year 1691; and was publiſhed in 1702, 8vo. A new edition of this work was publiſhed in 1713, in 2 volumes 8vo; in which the hiſtory of the Nonconformiſts is continued through the reign of king William and queen Anne, to the time of paſſing the occaſional bill. The firſt edition of this work was, as we may reaſonably imagine, very differently received by perſons of different parties and opinions; and it occaſioned a controverſy of ſome extent and continuance, which, however, was carried on with a greater degree of candour and moderation than moſt controverſies of a ſimilar kind. In Scotland, which Mr. Calamy viſited in 1709, he was received with ſingular reſpect; and each of the three Univerſities of Aberdeen, Glaſgow, and Edinburgh, preſented him with the degree of doctor in divinity. In 1718, he wrote a vindication of his grandfather, and ſeveral other worthy perſons againſt the reflections of Archdeacon Eachard, in his Hiſtory of England. About this time the queſtion of ſubſcription to the firſt article of the Church of England, relating to the Trinity, began to be agitated among the diſſenters; Dr. Calamy, however, remained neutral, and he has incurred reproach among the preſent race of diſſenting clergy, for not having joined thoſe 73 miniſters who carried it againſt 69 for the Bible, in oppoſition to human formularies. As to the belief of the doctrine he was decidedly orthodox, which was alſo the caſe with ſeveral others; and he publiſhed a ſet of ſermons in defence of it, which was dedicated and preſented to the king, and for which he received from his majeſty a gratuity of 50l. and likewiſe the thanks of ſeveral dignitaries of the church. In 1727, he completed his great deſign of preſerving the hiſtory of miniſters, &c. ejected and ſilenced, after the reſtoration, in a work intitled, "A Continuation of the Account of the Miniſters, Lecturers, Maſters, and Fellows of Colleges, and Schoolmaſters who were ejected and ſilenced after the Reſtoration in 1660, by, or before the Act of Uniformity, &c." 2 vols. Lond. 1727. This is a work of laudable induſtry and labour, and contains a valuable collection of memoirs, which would have been otherwiſe loſt. In 1775, the rev. Mr. Samuel Palmer of Hackney publiſhed in two large volumes 8vo. under the title of "Nonconformiſts' Memorial," an abridgement, with corrections, additions, and new anecdotes, of Dr. Calamy's 4 volumes, concerning the ejected and ſilenced miniſters; and a new edition of this work, with improvements, has been lately reprinted. Dr. Calamy diſtinguiſhed himſelf by other learned and uſeful writings, conſiſting chiefly of ſermons and controverſial pamphlets. Of his publications, beſides thoſe already noticed, we may mention his "Inſpiration of the Holy Writings of the Old and New Teſtament, in 14 Sermons;" and "His Defence of moderate Nonconformity," in 3 parts. The introduction to one of theſe tracts, repreſenting the true ſtate of the controverſy between the Church and the Diſſenters, was ſo much approved by Mr. Locke, that he ſent a meſſage to our author informing him, that he thought it ſuch a defence of nonconformity as could not be anſwered; and that, in adhering to the principles thus laid down he had no occaſion to be afraid of any antagoniſt. After an honourable courſe of profeſſional ſervices for which he was much eſteemed, and after ſuſtaining a character which was much reſpected, not not only among diſſenters, but alſo among the moderate members of the eſtabliſhed church, both clergy and laity, with many of whom he lived in great intimacy; he cloſed his life June 3, 1732, in the 60th year of his age. In his funeral ſermon by Mr. Mayo, his character is very juſtly delineated, as "a perſon of ſound judgment, extenſive learning, ſincere piety, of a candid and benevolent temper, and very moderate with regard to differences in points of religion." Biog. Brit.

CALANDA, in *Geography*, a town of Spain in Arragon, on the river Guadaloupe; 3 leagues W.S.W. of Alkanitz.

CALANDRA, in *Ornithology*, a bird of the ALAUDA, or lark genus, called by ſome the calandre lark, and which appears to be a general inhabitant of Sardinia, Italy, the South of France, Syria, Ruſſia, and Tartary, and alſo of America. This is the calandra of old authors. Briſſon calls it alauda major f. calandra: it is the calandra of the arctic zoology, of Aldrovandus, Willughby, and Edwards, and groſſe alouette ou calandre of Buffon. The length of this bird is about ſeven inches and a quarter. It builds its neſt on the ground: ſings finely, and imitates the notes of other birds extremely well. It is ſpecifically diſtinguiſhed by having the firſt exterior tail feather on each ſide white on the outer web; ſecond and third tipt with white: pectoral band brown. Gmel. &c. *Obſ.* The bill and legs are pale grey: body above varied with brown and grey: chin white: throat with a white creſcent, and beneath that a whitiſh band ſpotted with black: belly white: quill feathers duſky, edged with white; the leſſer ones tipt with white: tail black.

CALANDRE, in *Natural Hiſtory*, a name given by the French writers to an inſect that does vaſt miſchief in granaries. It is properly of the ſcarab claſs.

The female lays a conſiderable number of eggs, and the increaſe of theſe creatures would be very great, but nature has ſo ordered it, that while in the egg ſtate, and even while in that of the worm, they are ſubject to be eaten by mites; theſe little vermin are always very plentiful in granaries, and they deſtroy the far greater number of the larger animals.

CALANDRO, in *Geography*, a town of Aſiatic Turkey, in the province of Caramania; 100 miles S. of Cogni.

CALANGAY, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of parrot very common there; it is all over white, and has a creſt of white feathers on its head; it is of the ſize of a pigeon, and is eaſily kept tame, and learnt to talk. It is called alſo in ſome of the Philippines *catatua* and *abacay*.

CALANNAS, in *Geography*, a town of Spain, in the county of Seville, near the river Odiel; 40 miles N.W. of Seville.

CALANTIGAS, an iſland of the Eaſt Indian ocean, not far from Lingen, which ſee.

CALANUS, in *Biography*, a brachman or Indian philoſopher, who followed Alexander the Great, in his expedition to India. Having paſſed 83 years without ſickneſs, a fit of the colic made him impatient of life, and he reſolved to render his exit as oſtentatious as poſſible. Accordingly, having obtained permiſſion of Alexander to burn himſelf, a funeral pile was erected and ſtrewed with perfumes; and the whole army was arranged round it in battle array: upon which, Calanus, magnificently dreſſed, aſcended the pile with a compoſed air, and ſaw the flame applied without emotion. When he was aſked if he had any meſſage to Alexander, he only replied, "I ſhall ſoon ſee him again at Babylon;" which declaration ſome have interpreted as preſignificative of his death in that city; and the laſt words he uttered were, "Happy hour of departure from life, in which, after the mortal body is conſumed, the ſoul ſhall go forth into light." This event took place on the frontiers of Suſiana, B.C. 325. See ALEXANDER.

CALAO, in *Ornithology*, ſynonymous with the modern Latin *Buceros*, and *Hornbill* of the Engliſh. Petiver called the Philippine hornbill (*Bicornis* Linn.) Calao, and ſince that period, the French have adopted the expreſſion as a generical name for the other ſpecies of the ſame tribe. Thus, Buffon has calao d'Abyſſinie, calao d'Afrique, calao de Malabar, calao à caſque rond, calao à bec rouge de Senegal, &c. all which refer to the correſponding ſynonyms, Abyſſinian hornbill, African hornbill, Malabar hornbill, Helmet hornbill, red-billed hornbill, &c.

CALAON, in *Ancient Geography*, a river of Aſia Minor, in Ionia, near the town of Colophon.

CALAPADA, in *Geography*, a cape on the north ſide of the iſle of Candia, to the eaſt of cape Meleche, and about one-fourth part of the length of the iſland from the weſt end.

CALAPIS, in *Ancient Geography*, a colony of Aſia Minor, in Bithynia; eſtabliſhed, according to Strabo, by the inhabitants of Heraclea.

CALAPIZZATI, in *Geography*, a town of Naples, in the province of Calabria Citra; eight miles N.W. of Cariati.

CALAPPA, in *Botany*, Rumph. See COCOS *nucifera*.

CALAPPA, in *Entomology*, a ſpecies of CANCER that inhabits America. The thorax is crenulated with the poſterior angles dilated, and very entire: hand-claws creſted. Fabricius.

CALASCIO, in *Geography*, a town of Naples, in the province of Abruzzo Ultra; eight miles E. of Aquila.

CALASCIONE, a muſical inſtrument much in uſe by ſtrolling and ſtreet muſicians thoughout the kingdom of Naples. It is a ſpecies of guitar, with only two ſtrings, tuned 5th to each other. It has a very long neck, which is fretted. See FRET. The Turks have an inſtrument of the like kind, with three ſtrings, called in Arabic, *dambura*. Sometimes the ſtrings are ſtruck with a plectrum, and ſometimes with a quill. See PLECTRUM. The tone is rough and coarſe; the neck is ſometimes ſix feet long. The frets amount to 15 or 16. But the Neapolitans have a ſmaller ſort called *calaſcioncina*. See *Muſ. Pl.* of mod. inſtr.

CALSH, or CALESH, a ſmall light kind of chariot, or chair, with very low wheels, uſed chiefly for taking the air in parks and gardens.

The word is French, *caleche*, which Menage derives from the Latin, *carrus*, *carri*, *cariſcus*, *carriſca*, *carreſca*, *caleſca*, *caleche*.

The calaſh is for the moſt part richly decorated, and open on all ſides, for the conveniency of the air, and proſpect; or at moſt incloſed with light mantlets of waxed cloth, to be opened or ſhut at pleaſure.

In the Philoſophical Tranſactions, we have a deſcription of a new ſort of calaſh going on two wheels, not hung on traces, yet eaſier than the common coaches; having this farther advantage, that whereas a common coach will overturn if one wheel goes on a ſurface a foot and a half higher than that of the other, this will admit of a difference of three feet and one third, without danger of overturning. Add that it would turn over and over, that is, after being turned ſo as that the ſpokes are parallel to the horizon, and one wheel flat over the head of him that rides in it, and the other flat under him, it will turn once more, by which the wheels are placed in *ſtatu quo*, without any diſorder to the horſe or rider. N° 172. p. 1028.

CALASIO, Marius de, in *Biography*, a Franciſcan profeſſor of Hebrew at Rome, and author of a "Concordance of the Hebrew Words in the Bible," in four volumes folio, printed at Rome in 1621, and at London in 1747. This Concordance has been highly approved both by proteſtants and papiſts; and contains, beſides the Hebrew words occurring in the Bible, the Latin verſion, and, in the margin, the variations between the LXX verſion, and the Vulgate. Beſides, at the beginning of every article, there is a kind of dictionary, which gives the ſignification of each Hebrew word, and it furniſhes an opportunity of comparing it with other oriental languages, *viz.* the Syriac, Arabic, and Chaldee.

CALASIRII, in *Ancient Geography*, the denomination of a people, who, according to Herodotus, formed a claſs of Egyptians, amounting in number to 250,000 perſons, devoted, from father to ſon, to the profeſſion of arms, without being attached to agriculture, or to any art. The kings of Egypt had always one thouſand of them among their guards.

CALASIRIS, or Calassis, in *Antiquity*, a linen tunic worn by the Phœnician, Egyptian, Roman, and other prieſts. We alſo find mention of the calaſiris as worn by the ſoldiers and by women. In which laſt ſenſe, it ſeems to have been a knot in the woman's gown, whereby it was drawn about the neck.

CALASTRI, in *Geography*, a town of Hindooſtan, in the Carnatic; 15 geographical miles E.N.E. from Tripetty, and 61 from Arcot: but Major Rennell has ſome doubts concerning the accuracy of its poſition.

CALATABELLOTA, formerly the *Crimiſus*, a river of Sicily, with the waters of which the inhabitants overflow their beautiful rice grounds; and alſo a town of Sicily in the valley of Mazara; ſix miles S.E. of Sciacca.

CALATA-FIMI, a town of Sicily, in the valley of Mazara; 19 miles E.S.E. of Trapani. It is built on a ridge between two valleys, and its inhabitants are eſtimated at 10,000.

Calata-girone, or Calagirone, a royal city of Sicily, in the Val di Noto, ſituate about 20 miles from the ſea on the ſummit of a very high inſulated hill, emboſomed in thick groves of cypreſſes, and containing about 17,000 inhabitants, who live by agriculture and the manufacture of potters-ware. The road to it, though paved, is very ſteep and difficult of paſſage for any animal except a mule or an aſs. The inhabitants of this city are deemed the politeſt people in the iſland, and many of them live in a very elegant ſtyle. The natives have an idea that this city is very ancient, and that it figured as are public among the Sicilians during the zenith of Grecian glory, under the name of inland Gela or Gelone. The Saracens fortified it, but the Genoeſe wreſted it from them; however, their force was dwindled into a ſhadow when the Normans arrived. Earl Roger availed himſelf, on many occaſions, of the truſty valour of the Calatageroneſe, and rewarded them liberally with eſtates, which are ſtill in their poſſeſſion, and render the corporation one of the richeſt in Sicily. De Non ſays, this city, in which ancient coins are ſtill found, muſt have been the "Hybla-hærea" of antiquity. Swinburne's Travels in the Two Sicilies, vol. iv. De Non's Travels in Africa, &c. p. 292.

Calata-misseta, a town of Sicily, in the valley of Mazara; 27 miles E.N.E. of Girgenti.

Calata-scibelta, a mean town of Sicily, in the Val di Noto, built on the point of a rock, about three miles from Caſtro-Giovani.

CALATAIUD, a city of Spain, in Arragon, ſituated at the foot of a hill, at the conflux of the Xalon and Xiloca, defended by a caſtle placed upon a rock. It contains 13 pariſhes, and 15 convents; 37 miles S.W. of Saragoſſa. N. lat. 41° 22′. W. long. 2° 9′.

CALATHE, in *Ancient Geography*, *Galata*, an iſland of the Mediterranean, on the coaſt of Africa. See Galata.

CALATHIAN Violet. See Gentiana *Pneumonanthe*.

CALATHIFORMIS, a term in *Botany*, denoting bowl-ſhaped, or hemiſpherical and concave.

CALATHION, in *Ancient Geography*, a mountain of Peloponneſus, in Meſſenia, ſituate to the eaſt of Gerenia; on which was a temple dedicated to Calathea, with a grotto having a very narrow entrance.

CALATHUA, or Calathusa, a town of Arabia Deſerta. Ptolemy.

CALATHUS, in *Antiquity*, a kind of hand-baſket made of light wood, or ruſhes; uſed by the women ſometimes to gather flowers, but chiefly after the example of Minerva, to put their work in. The figure of the calathus, as repreſented on ancient monuments, is narrow at the bottom, and widening upwards like that of a top. Pliny compares it to that of a lily. Hiſt. Nat. lib. xxi. cap. 5. The calathus, or work baſket of Minerva, is no leſs celebrated among the poets than her diſtaff.

Calathus is alſo uſed to denote a drinking cup. Pliny ſeems likewiſe to uſe it for the calyx of a flower. Hiſt. Nat. lib. xxv. cap. 7.

CALATHUSA, in *Geography*, a town of Pontus. Steph. Byz.

CALATIA, a town of Italy, ſituate in Campania Felix. In the war of Hannibal, it ſubmitted after Capua; and in that of the allies, Sylla aſſigned it to the colony of Capua. Julius Cæſar eſtabliſhed in it a colony of veterans.

CALATIS, or Callatis, a town of Lower Myſia, in Europe, where, according to Strabo, was a colony of the inhabitants of Heraclea. It is mentioned by Salluſt, who places it on the weſtern part of the Euxine ſea, between Iſtropolis and Byzone. In the Periplus of Scylax, it is called Callabis.

CALATOR, in *Antiquity*, a cryer, or officer appointed to publiſh ſomething aloud, or call the people together. The word is formed from καλεω, *I call.* Such miniſters the pontifices had, whom they uſed to ſend before them when they went to ſacrifice on *feriæ* or holidays to advertiſe the people to leave off work. The magiſtrates alſo uſed calatores, to call the people to the comitia, both *curiata* and *centuriata*. The officers in the army alſo had *calatores*; as had likewiſe many private families to invite their gueſts to entertainments.

CALATRAVA, in *Geography*, a town of Spain in New Caſtile, and province of La Mancha, ſituate near the Morena mountains, on the river Guadiana; 50 miles S.E. of Toledo. N. lat. 39°. W. long. 4° 20′.

CALATRAVA, *Knights of*, in *Hiſtory*, a military order inſtituted in 1158, by Sancho III. king of Caſtile, on the following occaſion. When the Moors propoſed to attack the little city Calatrava, the Templars, who held it, ſurrendered it up to the king, on a ſuſpicion of their inability to defend it; upon this Diego Velaſquez, a Ciſtercian monk, but a man of quality, perſuaded Raymond, abbot of Fitero, a monaſtery of Ciſtercians, to beg Calatrava of the king. He obtained it; and Raymond and Diego put themſelves in it; being followed by a great number of people who joined them out of zeal, for the defence of Calatrava. The Moors abandoning the enterpriſe, many of thoſe who came to the defence of the city, entered the order of the Ciſtercians; and that under a habit more fit for military than monaſtic exerciſe. Accordingly, they began to make excurſions on the Moors; and this was the riſe of the order of Calatrava.

The firſt grand maſter was Gracias; under whoſe government the order was approved by Alexander III. in 1164, and confirmed by Innocent III. in 1198. In 1489, Ferdinand and Iſabella, with the conſent of pope Innocent VIII. reunited the grand maſterſhip of Calatrava to the Spaniſh crown: ſo that the kings of Spain are now become perpetual adminiſtrators, or grand maſters of this order. The badge of the order is a croſs fleury gules, which is worn at the ſtomach pendant to a ribbon.

Their rule and habit were originally thoſe of the Ciſtercians, but their dreſs was a little ſhortened, on account of their exerciſes; and in proceſs of time they were permitted a ſecular habit. The preſent habit of ceremony of the order is a mantle of white ſilk tied with a cordon and taſſels, like thoſe of the garter; and on the left arm, a croſs fleury embroidered gules. Mariana obſerves, that this noble inſtitution has gradually degenerated: the commanderies, which were formerly the reward of military merit, being frequently beſtowed on minions and favourites. The order is ſaid to have at preſent 34 commanderies, and eight priories, which produce an annual revenue of 120,000 ducats.

As the order of St. James is diſtinguiſhed by the epithet of the rich, and that of Alcantara is ſtyled the noble, this of Calatrava is entitled the gallant.

Alphonſus IX., having recovered Alcantara from the Moors in the year 1212, committed the cuſtody and defence thereof, firſt to the knights of Calatrava; and two years afterwards to the knights of the Pear-tree, or of St. Julian, another military order inſtituted at Pereiro, in 1156, under the protection of Ferdinand II. king of Leon, and ratified as a religious order under the title of St. Benedict, by pope Alexander III. in 1177, at the requeſt of Gomez Fernandez, the firſt prior or grand maſter; upon which they changed their name, and aſſumed the denomination of the knights of Alcantara. The king of Spain is ſovereign of this order, which is in high eſtimation in that kingdom: the mantle worn by the knights of this order is of red ſilk, with a ſtar of five points embroidered in ſilver on the left breaſt. The badge is a croſs fleury of gold, enamelled vert, and worn at the ſtomach with a broad ribbon.

The religious order of Calatrava for ladies was inſtituted by Don Gonzales Yannes in 1219. The badge of the order is the ſame as that worn by the knights of Calatrava, only embroidered on the front of the ladies' habits.

CALATUM, in *Ancient Geography*, a town of Britain, in the country of the Brigantes, according to Ptolemy. It is placed by Horſley at Appleby, and by Baxter at Kirkbythore in Weſtmoreland. But both the name, and the relative ſituation aſſigned to it by Ptolemy, might incline us to place it in or near the Galaterium Nemus, now the foreſt of Galters in Yorkſhire. In the Itinerary of Antonine it is denominated Galacum, and placed 47 miles from Bremetonacis.

CALAU, in *Geography*, a town of Luſatia, which carries on a large trade in wool; 15 miles N.W. of Cotbus.

CALAU-CENE, a town of Egypt; 12 miles S. of Abu Girgé.

CALAVON, a river of France, which runs into the Durance, about 8 miles W. of Cavaillon.

CALAURES, in *Ancient Geography*, a river of Aſia Minor, in Phrygia, which ran, according to Livy, between Cibyra and Mandropolis.

CALAURIA, one of the Greek iſlands in the Argolic bay, ſituate, according to Strabo, in the bay of Hermione, over-againſt Troezen, a maritime city of Argia, from which it was diſtant four furlongs, being itſelf thirty in compaſs. It was famous for a temple conſecrated to Neptune, and an aſylum. Demoſthenes was an exile in this iſland, and was buried in the temple, after having poiſoned himſelf, becauſe he would not ſurrender to the order of Antipater. In the time of Pauſanias, the inhabitants and ſtrangers paid great reſpect to the memory of this illuſtrious orator. This iſland was alſo denominated Irene, Anthedonia, Hypereia, and Poſſidonia; however, Pliny diſtinguiſhes Irene from Calauria. Ancient tradition reports, that Latona gave this iſland to Neptune in exchange for that of Delos, whence the proverb, "Pro Delio Calauria." A ſort of litharge, denominated "Calauritis," was brought to the Greeks from this iſland, and applied by them to medical purpoſes.

CALAURIA, a town of Sicily, mentioned by Plutarch.

CALAUWE, in *Geography*, an inhabited iſland of the Indian Ocean, near Saleyer, (which ſee,) and belonging to it. It is chiefly inhabited, as well as Bonarette in its vicinity, by Bouginеſe.

CALBARI, or CALABAR, the name of two rivers, as well as of a diſtrict in Africa, eaſt of Cape Formoſa. See CALABAR.

CALBARIA, a province of Africa, adjoining to Rio Real, or Royal River, called alſo *Galabar*; deriving its name from that river, which, though broad, is too ſhallow to be navigated by ſhips of burden. Near the coaſt, on the weſt bank of it, is a town called by the Dutch Wyndorp, and by the negroes, from the great quantity of wine, Toke; two branches ſpread to the eaſt and weſt from the river, whoſe courſe runs conſtantly north. In the weſt branch is a road, three or four leagues long, for trading veſſels; and the town Calbaria is ſituated on the north ſide of this arm, and it is a place of great trade with the Dutch, encloſed with palliſadoes, watered on the ſouth by the river, and defended on the north by a boggy wood. On the ſouth of this rivulet is an iſland of an oval figure, at a diſtance from the continent, from which it is divided only by a ſhallow canal, the land low and covered with woods. About 12 leagues weſtward of Calbaria, lies Belli, governed by one captain: and 20 leagues above the mouth is an arm of Rio Real, running eaſt-north-eaſt, and many other rivers are near the banks. The province of Krike, bordering on the weſt of Moco, lies about 20 miles from the coaſt; on the back of Rio Real, ſouthward of Moco, towards the coaſt, is the province of Bani, whoſe chief town is Culeba, the principal of this country, which extends weſtward from the river Calbaria, as far as Sangma, and has ten under officers. The cannibal negroes, inhabitants of the eaſtern banks of Calbaria, circumciſe the women that are marriageable, eat only the ſlain, and ſell the priſoners of war at Calbaria. The canoes uſed by the Calbarian negroes are pointed at both ends, 60 feet long and ſix broad, with a fire-place in the centre for dreſſing victuals, and planks acroſs for rowers. Near each rower hangs a quiver of arrows, in caſe of an attack; theſe nations living in continual war. The canoes carry 80 perſons; the ſlaves only are expoſed to the damps of the air, the maſters being ſheltered in the night by reed mats ſpread upon poles, and fixed in the form of tents. At the eaſt end of Loitomba river, called by the Portugueſe Rio do Santo Domingo, which is three leagues from the mouth of Rio Real, is a large town inhabited by negro traders, who traffic in ſlaves, which they bring from diſtant countries. Next to Loitomba is Old Calbaria, or Calborg river. The interjacent country is unprovided with water: the coaſt from Rio Real to ancient Calborg is 24 leagues in extent, north-north-eaſt. See Calabar.

CALBE, a town of Germany, in the circle of Lower Saxony, and duchy of Magdeburg, on the Saal; 20 miles S. of Magdeburg.

Calbe, or **Kalbe**, a town of Germany, in the circle of Upper Saxony, and old mark of Brandenburg; 8 miles from Gardeleben.

CALBERGA, a town of Hindooſtan, in the country of Hydrabad, formerly a large city, and the ſtated reſidence of the kings of the Deccan; but now leſs populous, ſince it ceaſed to be the ſeat of royalty; 85 miles W. of Hydrabad, and 110 E. of Viſiapour. N. lat. 17° 25′. E. long. 77° 25′.

CALBIS, a town of Egypt, 3 miles N. of Roſetta.

Calbis, in *Ancient Geography*, a river of Aſia Minor, in the Doride, according to Ptolemy, and in Caria, according to Pomponius Mela. Pliny calls it Indus, and ſays that it ſprung from the mountains of Cibyra, and that it received in its courſe 60 rivers, and more than 100 torrents. Its mouth was in the north-weſt part of the gulf of Glaucus, W. of the promontory of Pedalium.

CALBONGAS, in *Geography*, the inhabitants of a country in Africa, which lies near the ſource of the river Rio do Rey, or the King's River, and borders on Biafra, at a diſtance from the coaſt. They are deſcribed as a wicked, deceitful, and filthy people, who are naked, except that they cover their private parts, and who bedaub their bodies with various colours, and figures traced on their foreheads. They are repreſented as deſtitute of natural affection, as well as ſincerity, inſomuch that parents ſell their children, huſbands their wives, and brothers their ſiſters. In this country, thoſe criminals are declared innocent, who make an inciſion and ſuck the blood out of their arms. See Rio do Rey.

CALBUCO, a town of South America, in the kingdom of Chili, and military government of Chiloe, on the coaſt of the South Pacific Ocean, inhabited by Spaniards, Meſtizos, and Indians, with one pariſh church, a convent of Franciſcans, another of the Fathers of Mercy, and a college of Jeſuits. In this town reſides a Corregidor, who is nominated by the Preſident of Chili. It is ſituate 180 miles S. of Valdivia. S. lat. 42° 40′. W. long. 73° 37′.

C. ALBUM, in *Entomology*, a ſpecies of Curculio found in Europe, and deſcribed by Scopoli. This inſect is varied with copper and black, and is particularly diſtinguiſhed by having an incurvated line on the wing-caſes at the baſe, next to the external angle.

C. album, is alſo the ſpecific name of a well known ſpecies of the European Papiliones, called in England the comma butterfly. This inſect has the wings angulated, fulvous, ſpotted with black: poſterior wings beneath marked with a white curved line reſembling the letter C, whence its name.

CALCADA, in *Geography*. See Calzada.

CALCAGIUM, in *Middle Age Writers*, a tax or contribution paid by the neighbouring inhabitants towards the making or repairing of a common cauſeway.

CALCAGNINI, **Celio**, in *Biography*, a learned Italian, was probably the illegitimate ſon of the apoſtolical Prothonotary at Ferrara, and born in 1579. Having borne arms, after the completion of his ſtudies, under the emperor Maximilian, and pope Julius II., he was employed in various embaſſies, and honourable commiſſions. On his return from Hungary, whither he accompanied cardinal Hippolito d'Eſte in 1518, he was made profeſſor of belles-lettres in the univerſity of Ferrara, which office he held till his death in 1541. He was diſtinguiſhed by his promotion of the Academy, "Degli Elevati," in that city; and by the liberal donation of his valuable library, and collection of mathematical inſtruments to the Franciſcans of Ferrara, on condition of their preſerving them for public uſe. He wrote much both in proſe and verſe. His proſe works were collected by Frobenius at Baſil in 1544. Among thoſe that relate to antiquities are, the 3 books, "Quæſtionum Epiſtolicarum," and his treatiſes, "De Rebus Ægyptiacis," "De Re Nautica," and "De Talorum, Teſſerarum, et Calculorum Ludis." Others relate to philoſophy, morals, and politics. Before Copernicus publiſhed his ſyſtem, he wrote a book to prove, "Quod Cælum ſtat, Terra moveatur." Eraſmus highly applauds this author; though others condemn his ſtyle as laboured and overwhelmed with quotations. His poetical ſtyle was more eſteemed. Three books of his Latin poems were publiſhed at Venice in 1553, with thoſe of Pigna and Arioſto. Tiraboſchi.

CALCANEUM, or **Calcaneus**, in *Anatomy*, the ſame as calx, os calcis, calcar, or the heel bone.

It lies under the aſtragalus, to which it is articulated by ginglimus; behind it is a large protuberance, which makes the heel, and into which the tendo achillis is inſerted.

CALCANTHUM, in *Mineralogy*. See Vitriol.

CALCAR, in *Anatomy*, the ſame with calcaneum.

Calcar, or **Kelkar**, **John**, in *Biography*, a painter of hiſtory and portrait, was born at Calcar in 1499, and he excelled ſo much as a diſciple of Titian, that ſeveral of his deſigns and paintings have been aſcribed even by Goltzius to this eminent maſter. Sandrart affirms, that he alſo imitated the works of Raphael ſo exactly, that ſome of his productions have been eſteemed to be Raphael's own. His "Nativity," which was a much admired compoſition, and which exhibited the light proceeding from the infant, was in the poſſeſſion of Rubens; and after his death purchaſed by Sandrart, and ſold to the emperor Ferdinand, by whom it was very highly prized. Calcar deſigned all the heads for the works of Vaſari, and the anatomical figures in thoſe of Veſalius. He died in 1546. Pilkington's Dictionary by Fuſeli.

Calcar, in *Botany*, a conic projection from ſome part of a flower reſembling a cock's-ſpur. Tropæolum, the naſturtium or Indian creſs of the gardeners, is an inſtance of a calcarate or ſpurred calyx; delphinium, or larkſpur, of a calcarate corolla; and orchis of a calcarate nectary.

Calcar, in *Conchology*, a ſpecies of Turbo, the ſhell of which is ſomewhat imperforated and depreſſed; whorls ſcabrous: ſpines above compreſſed and hollow. Linn. &c. This is the Calcar of Rumpfius and Argenville. Chemnitz gives ſeveral diſtinct varieties of this ſhell from India, the South Seas, and the Mediterranean.

Calcar, a ſpecies of Nautilus, found in the Adriatic ſea, and deſcribed by Plancus among his microſcopic ſhells. It is diſtinguiſhed ſpecifically by the aperture being of a linear form, and having the joints of the whorls elevated. This is a minute ſhell of an opake white colour, and has been found on the ſhore of Sheppy iſland.

Calcar, in *Entomology*, a ſpecies of Curculio, the colour of which is black: thighs with a ſingle tooth: antennæ and feet teſtaceous. Fabricius. This is a ſmall inſect, and inhabits Germany.

Calcar, in *Geography*, a town of Germany, in the circle of Weſtphalia, and duchy of Cleves, about 5 miles from the Rhine. It contains two convents and two churches, one for Roman Catholics, and one for Proteſtants, and all other ſects are tolerated; 5 miles S. E. of Cleves. N. lat. 51° 47′. E. long. 5° 41′.

Calcar, in *Glaſs-making*, is the name of a ſmall oven, or reverberatory furnace, in which the firſt calcination of ſand and ſalt of pot-aſhes is made, for the turning them into what they call frit.

CALCARATA, in *Entomology*, a ſpecies of Bupreſtis that inhabits Germany. The wing-caſes are bidentated, and ſomewhat ſtriated: ſhanks of the middle pair of legs toothed: body coppery. Schall. Herbſt gives this the name of Bupreſtis æruginoſa.

Obſ. This is of a ſmall ſize, with four ſtriæ on the wing-caſes, and a ſingle black blue line on the thorax.

CALCARATUS, an European ſpecies of Cerambyx, of a violaceous-black colour, with rufous thighs, the poſterior ones dentated. Scop. Ann. Hiſt.

Calcaratus, a ſpecies of Cimex, of a fuſcous colour, with the abdomen ſanguineous above, and the poſterior thighs ſix-toothed. Fabricius. Inhabits Europe.

CALCAREOUS, ſomething that partakes of the nature and qualities of calx, or lime.

Calcareous *cæments*. See Cements *calcareous*.

Calcareous *earth*. See Lime.

Calcareous *earth*, in *Agriculture*, a ſort of earth in which calcareous matter abounds. Earths of this kind have the following properties in common:—They become friable when burnt in the fire, and afterwards fall into a fine white powder, which is promoted, if after being burnt they be thrown into water, by which a ſtrong heat ariſes, and a partial ſolution takes place. They cannot be melted by themſelves into glaſs in a cloſe fire; but when burnt, they augment the cauſticity of pot-aſhes, and they are diſſolved in acids with efferveſcence. This earth is found pure, in the form of a powder, in ſome places, and called by chemiſts *lac lunæ*. It is of a white colour, and is met with in ſome moory ſituations, at the bottoms of lakes, and in the fiſſures of free-ſtone quarries, in ſome of the midland diſtricts. In ſome countries, as Sweden, the colour varies to red and yellow. This is ſuppoſed to be lime-ſtone waſhed from the rocks, and pulverized by the motion of the water. It is, however, found in quantities too ſmall to admit of any applications to agricultural purpoſes. It is frequently met with in a friable or compact ſtate in the form of chalk. The white chalk is the pureſt, yet it contains, according to lord Dundonald, a little ſiliceous, and about two *per cent.* of argillaceous earth. There is more fixed air in chalk than in any other calcareous earth, generally about forty *per cent.* It is alſo ſeen in a hard or indurated ſtate in lime-ſtone; and united with the ſulphuric or vitriolic acid, in the form of gypſum, ſelenite, or what is generally termed plaſter of Paris. It is likewiſe combined with clay in the form of marl. See Lime-stone, Gypsum, and Marl.

It is maintained by lord Dundonald, in his treatiſe on the "Connection of Agriculture with Chemiſtry," "that it conſtitutes not only the ſurface, or ſoil, but likewiſe the underſtratum of many countries to a very great depth; and that under this general name of calcareous matter are included chalk, marble, lime-ſtone, coral, ſhells, &c. The three firſt mentioned are frequently mixed with iron, and with different proportions of the ſimple earths, but are conſidered as calcareous when the proportion of that earth predominates. This material is capable of abſorbing, and of retaining moiſture, though in a conſiderably leſs degree than clay. By the action of the fire it becomes lime, and returns again to the ſtate of chalk or calcareous matter, by expoſure to the air or atmoſphere." And it is ſtated by Dr. Fordyce, in his "Elements of Agriculture and Vegetation," "that when combined with gas or fixed air it is termed *mild*, but that when free from it, it is *cauſtic*; that calcareous earth, when mixed with clay, gives a greater friability to it than ſand does; that it unites with ſulphur, forming *hepar ſulphuris*; and with animal and vegetable ſubſtances, forming a ſoap. It prevents putrefaction. It attracts acids more ſtrongly than volatile alkali or magneſia. If it be expoſed to the air, it attracts from it the fixable air, and reverts to the ſtate it was in before it was burnt. Mild calcareous earth forwards putrefaction. It is ſoluble in water, and when reduced to the ſtate of a powder, and applied to a ſoil, it is apt to be waſhed through it. Cauſtic volatile alkali will not precipitate calcareous earth, if diſſolved in an acid; but fixed vegetable alkali will. This diſtinguiſhes it from the other earths. Vitriolic acid will not diſſolve it ſo as to form a clear ſolution; and if this acid be added to a ſolution of it in any other, it will make a precipitation.

It is ſuggeſted by the author of Phytologia, that one great uſe of calcareous earth conſiſts "in its uniting with the carbon of the ſoil in its pure or cauſtic ſtate, or with that of the vegetable or animal recrements, during ſome part of the proceſs of putrefaction; and thus rendering it ſoluble in water, by forming an *hepar carbonis*, ſomewhat like an *hepar ſulphuris* produced by lime and ſulphur, by which proceſs, it is ſuppoſed, the carbon is rendered capable of being abſorbed by the lacteal veſſels of vegetable roots. The black liquor which flows from dunghills is, it is thought, probably a fluid of this kind; but the author ſpeaks hypothetically, as he has not verified it by experiment; and the carbon may be ſimply ſupported in the water by mucilage, like the coffee drank at our tea tables; or may be converted into an *hepar carbonis* by its union with the fixed alkali of the decaying vegetable matter, or by the volatile alkali which accompanies ſome ſtages of putrefaction." And a ſecond mode by which it is believed to aſſiſt the purpoſe of vegetation "is by its union with carbonic acid, and rendering it thus ſoluble in water in its fluid ſtate, inſtead of its being expanded into a gas; and thus a great quantity of carbon may be drank up by vegetable abſorbent veſſels. In the practice newly invented of watering lands by driving ſtreams over them for many weeks together, it has been ſaid, that water from ſprings is generally more effectual, in promoting vegetation, than that from rivers; which, though it may in part be owing to the azotic gas, or nitrogen, contained in ſome ſprings, as thoſe of Buxton and of Bath, according to the analyſis of Dr. Prieſtley, and of Dr. Pearſon, yet it is ſuppoſed to be principally owing to the calcareous earth, which abounds in all ſprings, which paſs over marly ſoils, or through calcareous ſtrata; and which does not exiſt in rivers, as the ſalts waſhed into rivers from the ſoil all ſeem to decompoſe each other except the marine ſalt, and ſome magneſian ſalt which are carried down into the ocean. The calcareous earth likewiſe, which is waſhed into rivers, enters into new combinations, as into gypſum, or perhaps into ſiliceous ſand, and ſubſides." And a ſtill farther mode in which calcareous earth may promote vegetation is, it is conceived, " by its containing phoſphorus, which by its union with it may be converted into an *hepar*, and thus rendered ſoluble in water without its becoming an acid, by the addition of oxygen. Phoſphorus, it is ſuppoſed, is probably as neceſſary an ingredient in vegetable as in animal bodies; which appears by the phoſphoric light viſible on rotten wood during ſome ſtages of putrefaction; in which, it is ſuppoſed, the phoſphorus is ſet at liberty from the calcareous earth, or from the fixed alkali, or from the carbon of the decompoſing wood, and acquires oxygen from the atmoſphere; and both warmth and light are emitted during their union. But phoſphorus may, perhaps, more frequently exiſt in the form of phoſphoric acid in vegetables, and may thus be readily united with their calcareous earth, and may be ſeparated from its acid, by the carbon of the vegetable during calcination, and alſo during putrefaction, which may be conſidered as a ſlow combuſtion. The exiſtence of a ſolution of phoſphoric acid and calcareous earth in the veſſels of animals is proved by the annual renovation of the ſhells of crab fiſh, and by the fabrication of the egg-ſhells in female birds; and is occaſionally ſecreted, where it cements the wounds made on ſnail ſhells; or where it joins the preſent year's growth of a ſnail ſhell to the part where a membranous cover had been attached for the protection of the animal during its ſtate of hybernation; and laſtly, it is further evident from the growth of the bones of quadrupeds, and from the depoſition of callus to join them when they have been broken." It is therefore contended, that " many arguments may be adduced to ſhow, that calcareous earth, either alone, or in ſome of the ſtates of combination, mentioned above, may contribute to the nouriſhment and ſupport of both animals and vegetables. Firſt, becauſe calcareous earth conſtitutes a conſiderable part of them, and muſt of courſe be either received from without, or formed by them, or both; and ſecondly, becauſe from the analogy of all organic life, whatever has compoſed a part of a vegetable or animal, may again, after its chemical ſolution, become a part of another vegetable or animal; ſuch, it is obſerved, is the tranſmigration of matter. See Lime and Manure.

Calcareous *manures*, are all ſuch as abound in calcareous matter. Chalk, pounded lime-ſtone, lime, calcareous marl, ſhells, and various other ſubſtances of a ſimilar kind, are of this deſcription. They are found particularly beneficial on all the ſtiffer ſorts of ſoil when made uſe of in due proportions.

Calcareous *ſoils*, ſuch as are conſtituted of this ſort of material in a large proportion. From their dry and friable nature, ſoils of this nature are in general well ſuited to the growth of moſt ſorts of grain, as well as ſome plants of the artificial graſs kind, ſuch as clover, ſaint-foin, &c. See Soil.

Calcareous *ſpar*. See Lime-stone.

CALCARIA, in *Ancient Geography*, thought by ſome to be *Caliſſane*, a city of Gallia Narbonnenſis, upon the Aurelian way, weſt of Aquæ Sextiæ.

Calcaria, a town of Ancient Britain, 9 miles from Eburacum, and 20 miles from Cambodunum, according to the Itinerary of Antonine, placed by ſome at Tadcaſter, by others at Newton-kyme.

CALCAYLARES, in *Geography*, a juriſdiction of South America, in the country of Peru, ſituate between Cuſco and the ſea, and commencing 4 leagues weſt of the city of Cuſco. The air in this juriſdiction excels that of all the other provinces, and accordingly it produces an exuberance of all kinds of grain and fruits. In the hotteſt parts called " Lares" were formerly very large plantations of ſugar canes, but for want of hands to cultivate them, they are now ſo diminiſhed, that inſtead of 60 or 80.000 arobas which they annually produced, they are now reduced to leſs than 30; but the ſugar is of ſuch an excellent kind, that without any other preparation than that of the country, it is equal both in colour and hardneſs to the refined ſugar of Europe. This diminution of its ſugar has greatly leſſened the principal branch of its commerce.

CALCEARIUM, or Calciarium, in *Antiquity*, a donative, or largeſs beſtowed on the Roman ſoldiers for buying ſhoes. In the monaſteries, *calcearium* denoted the daily ſervice of cleaning the ſhoes of the religious.

CALCEDONIANS, a denomination given by Copt writers to the Melchites, on account of their adherence to the council of Calcedon. See Cophti, Monophysites, &c.

CALCEDONIUS is a term uſed by the jewellers for a defect in ſome precious ſtones, when, in turning them, they find white ſpots, or ſtains, like thoſe of the *calcedony*, or chalcedony. This defect is frequent in granates and rubies. The lapidaries uſually remedy it by hollowing the bottom of the ſtone.

CALCEDONY. See Chalcedony.

CALCENA, in *Geography*, a town of Spain, in Arragon; 14 miles S. of Tarraçona.

Calcena, a term uſed by ſome medicinal writers to denote a morbid tartareous humour in the body.

CALCEOLARIA, in *Botany*, (from Calceolus, a little ſlipper.) Slipperwort. Linn. Mant. 171. Reich. 32. Schreb. 39. Willd. 51. Gært. 374. La Marck Illuſ. 36. Juſſ. p. 120. Vent. vol. ii. p. 297. Claſs and order, *diandria monogynia*. Nat. Ord. *Corydales*; Linn.? *Scrophulariæ*, Juſſ. *Rhinanthoides*, Vent.

Gen. Ch. *Cal.* one-leafed, with four, equal, ſpreading diviſions; permanent. *Cor.* monopetalous, bilabiate, inverted: upper lip very ſmall, contractedly globular; lower lip large, inflated, concave, ſlipper-ſhaped, gaping before. *Stam.* filaments two, very ſhort, within the upper lip; anthers incumbent, two-lobed. *Piſt.* germ ſuperior, roundiſh; ſtyle very ſhort; ſtigma rather obtuſe. *Peric.* capſule ſomewhat conic, two-furrowed, two-celled, two-valved. *Seeds* numerous, egg-ſhaped.

Eſſ. Ch. *Calyx* with four equal diviſions. *Corolla* ringent; lower lip inflated, concave. *Capſule* two-celled.

Sp. 1. C. *pinnata*. Linn. Mant. 171. Act. Stock. 1770. t. 8. Feuil. Peruv. 3. 12. t. 7. Curt. Mag. t. 41. Gært. tab. 62. f. 4. Lam. Illuſt. Pl. 15. f. 2. " Leaves winged." Annual. *Stem* erect, two feet high, round, branched, pubeſcent, ſlightly ſwelling at the knots. *Leaves* oppoſite, without ſtipules, brittle, pubeſcent, ſoft, ſpreading, longer than the internodes, unequally winged, of a delicate green colour; leaflets nearly oppoſite or alternate, ſometimes, as repreſented in Curtis's figure, ſo united as to make the leaf only pinnatifid; ſometimes, as in a ſpecimen now before us, from a plant raiſed by R. A. Saliſbury, eſq. completely ſeparate, bluntly ſerrated, narrowed at their baſe, and frequently decurrent on the common petiole. *Flowers* yellow, axillary and terminating. *Capſule* thin, ſwelled at the baſe, and diminiſhing to a pyramidal top, deeply furrowed; mature valves bifid at the tip; partition contrary to the valves. *Seeds* ſmall, pale, marked with about ſix longitudinal, crenulated furrows. A native of Peru: introduced into England in 1773 by ſir Joſeph Banks, Bart. 2. C. *integrifolia*, Willd. Smith icon. ined. 1. p. 3. C. ſalviæ folio, Feuill. Peru. 3. t. 7. C. ſerrata, Lam. " Leaves lanceolate, wrinkled, ſerrated; flowers in terminal panicles." Smith. *Root* fibrous. *Stem* branched, round, two or three feet high. *Leaves* oppoſite, ſeſſile, bright green above, pubeſcent and pale beneath.

neath. *Flowers* yellow, peduncled. A native of Peru and Chili. 3. C. *ovata*, Smith icon. ined. 1. t. 3. C. dichotoma. La Marck. C. integrifolia, Linn. Supp.? "Stem branched; leaves egg-ſhaped, ſcolloped." Smith. Pubeſcent in all its parts. *Root* annual, fibrous. *Stem* ſlender, round, dichotomous, ſeven or eight inches high. *Leaves* ſmall, oppoſite; upper ones ſeſſile, acuminate; lower ones petioled and rather obtuſe. *Flowers* ſmall, yellow, on ſimple peduncles, axillary and terminating. Found in Peru by Dombey. It flowered in the royal garden at Paris in 1781. 4. C. *perfoliata*, Linn. Sup. Mutis. Amer. v. 1. t. 3. Smith icon. ined. 1. t. 4. "Leaves perfoliate, arrow-ſhaped, downy on both ſides." Smith. A handſome plant, very different in its appearance from all the other ſpecies. *Stem* about a foot and a half high, round, pubeſcent, branched. *Leaves* oppoſite, triangular, or almoſt arrow-ſhaped, irregularly toothed, woolly and white beneath. *Flowers* yellow, large, in bundles at the tops of the branches, on ſimple or branched peduncles. *Calyx* large. *Bractes* reſembling the leaves, but egg-ſhaped and ſeſſile, not perfoliate. Found in New Granada by Mutis, and in Peru by Joſeph Juſſieu. 5. C. *crenata*, Willd. La Marck. "Leaves ſeſſile, oblong, acute, ſcolloped; flowers in cymes terminating the ſtems and branches." *Stem* about two feet high, downy. *Leaves* oppoſite, almoſt embracing the ſtem, reſembling thoſe of Rhinanthus criſta galli, green above, downy and pale beneath. Found in Peru by Joſeph Juſſieu. 6. C. *roſmarinifolia*, Willd. La Marck. "Leaves linear, very entire, reflexed at the margin, downy beneath; ſtem ſmooth." *Stem* about a foot and a half high, round, more or leſs branched. *Leaves* oppoſite, ſmooth and viſcous above, eſpecially when young. *Flowers* yellow; in terminating cymes on ſmooth, viſcous peduncles. Found in Peru by Joſeph Juſſieu. 7. C. *plantaginea*, Willd. Smith icon. ined. 1. t. 2. La Marck. "Scapes with few flowers; leaves rhomb-ſhaped, ſerrated." *Leaves* only from the root, veined, ſmooth, fringed with jointed hairs, narrowed at their baſe into petioles, about two inches long. *Scapes* two or three, as long again as the leaves, with two yellow flowers. Found by Commerſon at the Straits of Magellan. 8. C. *nana*, Willd. Smith icon. ined. 1. t. 1. C. uniflora, La Marck. Pl. 15. f. 3. "Scapes one-flowered; leaves egg-ſhaped, very entire." Smith. *Leaves* all radical, ſcarcely an inch long, ſmooth, narrowed into a petiole at their baſe. *Scapes* as long again as the leaves. *Flowers* large, yellow, ſpotted with red; upper lip very ſhort, vaulted; lower lip elongated, pendulous, and ſwelling; edge membranous, folded back, angular. Found at the Straits of Magellan by Commerſon. 9. C. *Fothergillii*, Willd. Aiton. Kew. 1. t. 1. La Marck. Pl. 15. f. 1. copied from Hortus Kewenſis. "Leaves ſpatulate, very entire: peduncles in the form of ſcapes, one-flowered." Biennial. *Stems* ſcarcely an inch high, ſubdivided near the root. *Leaves* ſcarcely an inch long, oppoſite, many-nerved, obtuſe, hairy above, narrowed into petioles. *Peduncles* ſolitary or in pairs, twice the length of the leaves. Diviſions of the *calyx* acute, bent in at the end, hairy without. Upper lip of the *corolla* yellow, erect, vaulted, a little ſhorter than the calyx; lower lip deſcending, four times as long as the upper, dilated in front, inflated, pale yellow underneath, above red at the ſides, in front yellow with red ſpots, near the palate yellow; aperture large, open; filaments inſerted into the ſides of the corolla at the baſe of the aperture; anthers roundiſh, large; ſtyle thick, the length of the ſtamens; ſtigma thickened, flat. A native of Falkland iſlands, introduced by Dr. Fothergill in 1777.

Propagation and Culture.—The firſt and the laſt are the only ones hitherto cultivated in England. The firſt may be eaſily raiſed from ſeeds ſown on a gentle hot-bed in the ſpring: the ſeedlings, when of a proper ſize, may be tranſplanted into the borders of the flower garden, where they will flower, ripen, and ſcatter their ſeeds; but being a delicate plant, it appears to moſt advantage in a tan-ſtove, in which, as it will grow from cuttings, it may be had in flower all the year, by planting them in ſucceſſion. Curtis.

CALCEOLARIA (Lœf.). See VIOLA *Calceolaria*, and *Oppoſitifolia*.

CALCEOLUS, a genus formed by Tournefort correſponding with cypripedium of Linnæus. Tournefort's name is that of nearly all the old authors.

CALCEOLUS *Lapponum* (Scheff Lap.). See ACONITUM *Lycoctonum*.

CALCEOLUS *Philippenſis* (Petiv.). See KÆMPFERIA *Galanga*.

CALCHAS, in *Fabulous Hiſtory*, a famous diviner, who followed the Greek army to Troy. He is ſaid to have predicted, that the ſiege of Troy would laſt ten years, and that the fleet, which was detained in the port of Aulis by contrary winds, would not ſet ſail till Agamemnon's daughter had been ſacrificed to Diana. After the capture of Troy, he is ſaid to have retired to Colophon, and to have died there with grief, becauſe he could not divine what another man of his own profeſſion, called Mopſus, diſcovered; thus fulfilling a prediction mentioned by Sophocles, according to which, Calchas was to die as ſoon as he ſhould meet with his maſter in the art of divining. If Suidas is to be credited, one of the Sibyls was Chalcas's daughter; her name was Lampaſa; he calls her the Colophonian; and aſcribes to her ſome oracles in verſe. Gen. Dict.

CALCHOPHONOS *lapis*, among the ancients, a name given to a ſtone of a black colour and conſiderable hardneſs, which, when cut into thin plates, and ſtruck againſt by any other hard body, gave a ſound like that of braſs; it ſeems to have been one of the hard black marbles.

CALCIANA, in *Geography*, a town of Naples, in the province of Baſilicata; 16 miles S.E. of Acerenza.

CALCIFRAGA, in *Botany*, (Lobel.) See CRITHMUM *maritimum*.

CALCIFRAGUS, *ſtone-breaking*, an appellation given by ſome to the *ſcolopendrium*; by others to pimpernel, on account of their lithontriptic quality.

CALCIMURITE, in *Mineralogy*, a ſpecies of earth or ſtone, in which magneſia is mixed with a notable proportion of calcareous earth and ſome iron. The colour is blue or olive-green, of the conſiſtency of clay: the latter contains no argil, but merely calcareous earth and magneſia tinged with iron: the former contains a larger proportion of calcareous earth. Both are found near Thionville: the former is uſed by potters. Kirwan's El. Min. vol. i. p. 146.

CALCINARA, in *Geography*, a town of Italy, in the duchy of Tuſcany; 12 miles E. of Piſa.

CALCINATION. In general, a ſubſtance is ſaid to be calcined when it has been expoſed to heat of a ſufficient intenſity to drive off every thing volatile, but ſhort of that requiſite for its fuſion. A calx, therefore, was underſtood by the ancient chemiſts to be a pulverulent ſubſtance no longer combuſtible or capable of further alteration by fire than that of vitrifaction.

As moſt of the metals were found to be reducible to ſuch a form by a continuance of a melting heat, the term *calces of metals* was long particularly appropriated to them, and is ſtill partially retained, though it has been chiefly ſupplanted by the more characteriſtic appellation of *oxyd*, which expreſſes the peculiar change that occurs in calcining metallic bodies by the abſorption of oxygen. *Calcination*, therefore, expreſſes the *mode* (or at leaſt one mode), by which, in metals, this change is produced, and oxidation the *circumſtance* of change. It is, however, obviouſly improper to conſider the term calcination as ſynonymous with oxidation, even in ſpeaking of metals, ſince the true original ſenſe of the former term implies the agency of fire; whereas, oxidation may be produced as well by the action of acids, as by heat and air. Of the calces, or calcined bodies, in which the change is totally independent of the abſorption of oxygen, *calcined flints*, *calcined plaſter of Paris*, and *calcined hartſhorn*, are common examples.

CALCINATION *of gold and ſilver by electricity*, was effected by Mr. Canton, who, by the heat of electrical exploſions, produced numberleſs beautiful globules of tranſparent glaſs, and alſo others tinged with all the varieties of colour from thoſe metals. He made it alſo probable that the black duſt diſcharged from the braſs chain, and other pieces of metal in ſuch experiments, is the calx or glaſs of the metal reduced to ſmaller particles than the laws of optics require to produce colour. Hiſt. of Elect. edit. 1775, vol. ii. p. 292. See ELECTRICAL *Battery*.

CALCINATO, in *Geography*, a town of Italy, in the Bergamaſco; 7 miles S.E. of Bergamo.

CALCINATO, a town of Italy, belonging to the ſtate of Venice, in the Breſſan, where the Imperial troops were defeated by the duke of Vendôme, in 1706; eight miles S.E. of Breſcia. N. lat. 45° 25′. E. long. 9° 55′.

CALCINELLA, in *Conchology*, the name given by Adanſon to the Mactra piperata of Poiret. See PIPERATA.

CALCINELLE of Adanſon, the Gmelinian VENUS DEALBATA.

CALCIS *Os*, in *Anatomy*. See OS *calcis*.

CALCITRAPA, in *Botany*. (Hal. Helvet. p. 193, 194.) See CENTAUREA *ſolſtitialis* and *calcitrapa*.

CALCITRAPA *lutea*. (Vail. act. 1718, p. 212.) See CENTAUREA *eriophora*.

CALCITRAPOIDES, (Iſn. Paris, 1719, 9.) See CENTAUREA *Iſnardi*. The calcitrapæ form a ſection in the genus centaurea of Linnæus, which conſiſts of ſuch ſpecies as have the ſpines of the calyx compound. Juſſieu has formed a diſtinct genus for them, in which he has been followed by Gærtner, Ventenat, and Boſc. The name is a hybrid production from the Latin calx, the ſole of the foot, and the Greek τρεπω, which ſignifies to turn, and was ſuggeſted by the reſemblance of the calyx, in theſe plants, to a machine uſed in war, conſiſting of ſharp ſpikes, which turn on an axle when touched with the foot. It is called by the French *chauſſe-trape*. See CENTAUREA.

CALCUA, or NALCUA, in *Ancient Geography*, a town of the Atrebatii, in Ancient Britain, generally agreed to have been the ſame with the *Calleva*, in the Itinerary of Antonine, placed 22 miles from Venta Belgarum, or Wincheſter. Antiquaries are much divided about the preciſe ſituation of this place. See ATREBATII.

CALCULARII, in *Antiquity*, a ſort of jugglers who practiſed ſlight of hand. Their art conſiſted in laying ſeveral calculi, or counters on the table, then covering them with cups, and ſhifting and changing them with dexterity, like what is practiſed by our jugglers.

CALCULARY *of a pear*, a congeries of little ſtony knots diſperſed through the whole parenchyma of the fruit.

The calculary is no vital or eſſential part of the fruit; the ſeveral knots whereof it conſiſts being only ſo many concretions or precipitations out of the ſap, as we ſee in urines, wines, and other liquors.

CALCULATION, the act of computing ſeveral ſums, by adding, ſubtracting, multiplying, or dividing. See ARITHMETIC. An error in calculation is never protected, or ſecured, by any ſentence, decree, &c. In ſtating accounts, there is always underſtood, *ſalvo errore calculi*.

The word calculus is uſed in this ſenſe, in alluſion to the practice of the ancients, who uſed *calculi*, or little ſtones, in making computations, in taking ſuffrages, and in keeping accounts, &c. as we now uſe counters, figures, &c.

A merchant or trader is ſaid to have been miſtaken in his calculation, or accounts, when he has happened to take falſe meaſures, and has not ſucceeded in his undertakings ſo well as he expected.

CALCULATION is more particularly uſed to ſignify the computations in aſtronomy and geometry, for making tables of logarithms, ephemerides, finding the times of eclipſes, &c.

CALCULATION *of clock and watch work*. See CLOCK and WATCH-WORK.

CALCULATION, *in Muſic*. D'Alembert, and many other theoriſts, and eminent mathematicians, are of opinion, that the *calculation* of ratios is of no uſe in practical muſic: ſuppoſing that a good ear and ſtrong hand on inſtruments, where the tone depends on the performer, are a muſician's beſt guides for true intonation. In the prelim. diſc. to his Elem. de Muſ. 2d edit. the great mathematician cautions theoretical muſicians againſt the admiſſion of mathematical or metaphyſical principles in muſic. On this ſubject, he ſays: "it would be abſurd to expect what is called *demonſtration*: it is an achievement of no ſmall importance, to have reduced the principal facts to a ſyſtem conſiſtent with itſelf and firmly connected with its parts; to have deduced them from one ſingle experiment (the harmonics of a ſingle ſtring or ſounding body), and to have eſtabliſhed on that foundation, the moſt common and eſſential rules of the art. In digeſting and compreſſing M. Rameau's principles, I had no deſire to multiply his calculations: I rather wiſhed to ſuppreſs them as much as poſſible; ſo much was it to be feared that the generality of readers would be led into a belief, that all this arithmetic was neceſſary to form a practical muſician. Calculation may, indeed, facilitate the intelligence of certain points in theory, ſuch as the relation between the tones of the gammut and temperament; but the calculation neceſſary for treating theſe two points is ſo ſimple and trifling, that it merits no diſplay. Let us not, therefore, imitate thoſe muſicians who believe themſelves geometricians, or thoſe geometricians who fancy themſelves muſicians, and, in their writings, heap figures on figures, imagining, perhaps, that this diſplay is neceſſary to the art. The ambition of giving to their productions a ſcientific appearance, impoſes only on the ignorant, and has no other effect than to render their treatiſes more obſcure and leſs inſtructive."

CALCULATOR, a machine contrived and conſtructed by Mr. Ferguſon, in the ſhape of an orrery, for exhibiting the motions of the earth and moon, and reſolving a variety of aſtronomical problems. See an account of the conſtruction, figure, and uſe of this machine, in Ferguſon's Aſtronomy, 4to. p. 283, &c.

CALCULATORES, in *Antiquity*, accomptants who reckoned their ſums by *calculi*. There were ſeveral ſervants under this denomination in great families. Children alſo at ſchool were taught to practiſe the ſame. In the ancient canons we find a ſort of diviners or enchanters, cenſured under the denomination of *calculatores*.

CALCULUS, primarily denotes a little ſtone, pebble, or counter, anciently uſed in making computations, taking of ſuffrages, playing at tables, and the like. Hence the phraſe *ponere calculos*, to denote a ſeries of reaſons, and a multitude of others alluding to the uſe of theſe caculi in accounts.

Computiſts were by the lawyers called *calculones*, when they were either ſlaves, or newly freed men; thoſe of a better condition were denominated *calculatores*, or *numerarii*: ordinarily there was one of theſe maſters in each family of diſtinction; the title of whoſe office was *a calculis*, or *a rationibus*.

The Roman judges anciently gave their opinions by *calculi*, which were white for abſolution, and black for condemnation. Hence *calculus albus*, in ancient writers, denotes a favourable vote, either in behalf of a perſon to be abſolved and acquitted of a charge, or elected to ſome dignity or poſt; as *calculus niger* did the contrary. This uſage is ſaid to have been borrowed from the Thracians, who marked their happy or proſperous days by white, and their unhappy by black pebbles, put each night into an urn. Hence alſo the phraſes, *ſignare, notare aliquid albo, nigrove lapillo ſeu calculo.*

Beſides the diverſity of colour, there were ſome alſo which had figures or characters painted or engraven on them; as thoſe which were in uſe in taking the ſuffrages both in the ſenate and at aſſemblies of the people. The letters marked upon theſe *calculi* were U. R. for *uti rogas*, and A. for *antiquo;* the firſt of which expreſſed an approbation of the law, the latter a rejection of it. Afterwards the judges, who ſat in capital cauſes, uſed calculi marked with the letter A. for *abſolvo*, C. for *condemno*, and N. L. for *non liquet;* ſignifying a more full information was required.

We may alſo mention another ſpecies of *calculi* uſed at the public games, whereby the rank and order in which the athletæ were to fight were determined. If for inſtance they were twenty, then twenty of theſe pieces were caſt into an urn; each ten were marked with numbers from one to ten, and the law was, that each of thoſe who drew, ſhould fight him who had drawn the ſame number. Theſe were called *calculi athletici*.

CALCULUS is alſo uſed in *Ancient Grammatic Writers* for a kind of weight equal to two grains of cicer. Some make it equivalent to the *ſiliqua*, which is equal to three grains of barley. Two calculi made the *ceratium*.

CALCULUS alſo denotes a certain method of performing mathematical inveſtigations and reſolutions. Thus, we ſay the antecedental calculus, the arithmetical or numeral calculus, the algebraical calculus, the calculus of derivations, the differential calculus, the exponential calculus, the fluxional calculus, the integral calculus, the literal or ſymbolical calculus, &c. See the following articles.

CALCULUS, *Antecedental.* This is a geometrical method of reaſoning without any conſideration of motion or velocity, applicable to every purpoſe, to which fluxions have been or can be applied. It was invented by James Glenie, eſq. A. M. and fellow of the Royal Societies of London and Edinburgh, as early as 1774, but not publiſhed till the year 1793, when it was printed in London for G. G. I. and I. Robinſons, Paternoſter-Row. As he derived it from an examination of the antecedents of ratios, having given conſequents and a given ſtandard of compariſon in the various degrees of augmentation and diminution, which they undergo by compoſition and decompoſition, he denominated it the Antecedental Calculus. It is certainly founded on principles admitted into the very firſt elements of geometry, and repeatedly made uſe of by Euclid himſelf. The inventor of this calculus does not in imitation of modern mathematicians talk of the powers of magnitudes and quantities, but conſiders every expreſſion in it as truly and ſtrictly geometrical, or rather as univerſally metrical in a geometrical form. For although the general formulæ in his univerſal compariſon, from which it is derived in an eaſy, ſimple direct, and conciſe manner, are eſtabliſhed on the ſame principles with thoſe of Euclid's elements of geometry, and are deduced in a demonſtrative way from an application of ſome of the truths contained in thoſe elements to the doctrine of ratios or proportion, they are, ſtrictly ſpeaking, generally metrical, and extend not only to geometry, but alſo to algebra and arithmetic, when the ſtandard of compariſon is ſuppoſed to become 1 or arithmetical unity. The tranſitions from them in their geometrical forms to their algebraic and numerical ones are, as Mr. Glenie has obſerved, ſo natural, ſo ſcientific, and ſo beautiful, that they cannot fail to furniſh the mind with the higheſt pleaſure and ſatisfaction, in pointing out, as it were, at one general view, the connection between theſe different ſciences, and unfolding the reaſons of their various operations, from the ſame indiſputable and mathematical principles. He has not, like other mathematicians, in conſidering ratio, confined himſelf to any particular modification of it; but he has regarded it as a magnitude poſſeſſing all the meaſurable affections of any other magnitude, viz. addition, ſubtraction, multiplication, diviſion, and ratio or proportion, or, as admitting, like other magnitudes, of augmentation or diminution, of increaſe or decreaſe. He is the firſt perſon, that we know of, who has roundly and expreſsly conſidered ratio or proportion as an affection of ratio, which it moſt unqueſtionably is. And by applying the elements of geometry to this conſideration of it, he has extended the geometrical analyſis indefinitely farther than any one before him, either among the ancients or moderns, as far as we are able to diſcover, has carried it. That he formed the deſign of applying geometry to ratios under this conception of them, as magnitudes *ſui generis*, capable of all the poſſible degrees of increaſe and decreaſe, though they know no diverſity of dimenſion in reſpect of kind, being homogeneous, and differing not in kind, but only in degree, and actually made ſuch an application of it when he could not have been above eighteen or twenty years of age, is evident from his own performances. For in a ſhort introduction to a paper read before the Royal Society of London, the 6th of March, 1777, and publiſhed in their tranſactions, which is entitled, " The general Mathematical Laws, that regulate and extend Proportion univerſally; or a Method of comparing Magnitudes of any kind together, in all the poſſible Degrees of Increaſe and Decreaſe," he makes uſe of the following words:

" The doctrine of proportion laid down by *Euclid* and the application of it given by him in his elements, form the baſis of almoſt all the geometrical reaſoning made uſe of by mathematicians both ancient and modern. But the reaſonings of geometers with regard to proportional magnitudes have ſeldom been carried beyond the triplicate *ratio*, which is the proportion that ſimilar ſolids have to one another, when referred to their homologous linear dimenſions. This boundary, however, comprehends but a very limited proportion of univerſal compariſon, and almoſt vaniſhes into nothing when referred to that endleſs variety of relations, which muſt neceſſarily take place between geometrical magnitudes in the infinite poſſible degrees of increaſe and decreaſe. The firſt of theſe takes in but a very contracted field of geometrical compariſon; whereas the laſt extends it indefinitely. Within the narrow compaſs of the firſt, the ancient geometers performed wonders; and their labours have been puſhed ſtill farther by the ingenuity and indefatigable induſtry of the moderns. But no author, that I have been able to meet with, gives the leaſt hint or information with regard to any general method of expreſſing geometrically, when any two magnitudes of the ſame kind are given, what degree of augmentation or diminution any one of theſe magnitudes muſt undergo, in order to have to the other any multiplicate or ſubmultiplicate *ratio* of theſe magnitudes in their given ſtate; or any ſuch ratio of them, as is denoted by fractions or ſurds; or (to ſpeak ſtill more generally) a *ratio*, which has to the *ratio* of the firſt-mentioned of theſe magnitudes, to the other the *ratio* of any two magnitudes whatever, of the ſame but of any kind. Neither have I been able to find, that any other author has ſhewn geometrically, in a general way, when any number of *ratios* are to be compounded or decompounded with a given *ratio*, how much either of the magnitudes in the given *ratio* is to be augmented or diminiſhed, in order to have to the other a *ratio*, which is equal to the given *ratio*, compounded or decompounded with the other *ratios*. To inveſtigate all theſe geometrically, and to fix general laws in relation to them, is the object of this paper: which, as it treats of a ſubject as new as it is general, I flatter myſelf will not prove unacceptable to this learned ſociety. It would be altogether ſuperfluous for me to mention the great advantages that muſt neceſſarily accrue to mathematics in general, from an accurate inveſtigation of this ſubject, ſince its influence extends more or leſs to every branch of abſtract ſcience, when any *data* can be aſcertained for reaſoning from. I ſhall in a ſubſequent paper take an opportunity of ſhewing, how from the theorems afterwards delivered in this, a method of reaſoning with finite magnitudes geometrically may be derived without any conſideration of motion or velocity, applicable to every purpoſe, to which fluxions have been applied." He then defines magnitude to be "that which admits of increaſe or decreaſe," and quantity to be "the degree of magnitude," obſerving, that "by magnitude he means, beſide extenſion, every thing which admits of more or leſs, or what can be increaſed or diminiſhed, ſuch as *ratios*, velocities, powers, &c."

In a ſhort performance of his, printed in Latin, in 1776, entitled "Leges Metaphyſicæ, ſeu Principia Mathematica, quæ Omnia fere ad Magnitudinum Rationes, Rationumque Relationes ſpectantia univerſaliter gubernant et indefinitè proferunt," he gives the ſame metaphyſical definitions of magnitude and quantity, with a declaration of what he means by magnitude, *viz.*

"Magnitudo eſt id, quod augeri vel diminui poteſt."

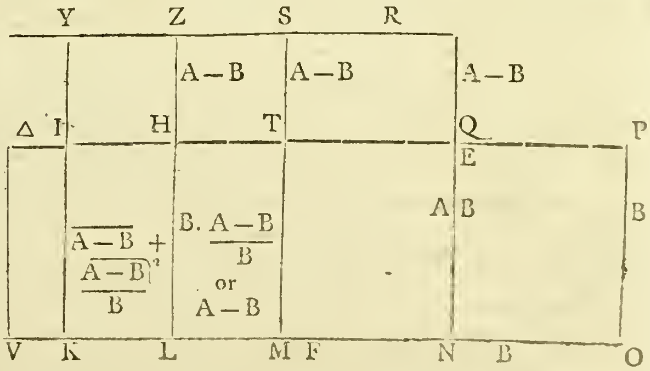
"Quantitas eſt gradus magnitudinis."

"Per magnitudinem, præter extenſionem, omnia, quæ augeri vel diminui poſſunt, ſicut rationes, velocitates, vires, &c. intelligo."

And in his Univerſal Compariſon itſelf he ſays, "When I ſpeak of magnitude, I mean to be underſtood as taking it in its general, abſtracted, unlimited, and metaphyſical acceptation, *viz.* to be whatever admits of more or leſs, of increaſe or decreaſe; and by quantity I mean the degree of magnitude." And to prevent any miſconception of his meaning or intention, in regard to his mode of expreſſing magnitudes geometrically, and connecting them together by means of the cuſtomary ſigns, he makes uſe of the following words: —"When I mention the ſum of magnitudes, or ſpeak of them as additive or ſubtractive, I only mean that they are to be taken with or from other magnitudes of the ſame kind. The ſigns plus and minus are only intended to denote ſuch aggregates and differences, or to connect magnitudes together in theſe relations, and by no means to convey any numerical ideas in the following theorems or formulæ, or to imply in themſelves any ſort of myſtery, or even meaning, independent of the magnitudes thus connected. By $A \cdot \frac{C-D}{D}$, $A \cdot \frac{A-B}{B}$, $A \cdot \left.\frac{\overline{A-B}}{B}\right|^{2}$ &c. I mean a fourth proportional to D, C−D, and A; a fourth proportional to B, A−B, and A; a fourth proportional to B, A−B, and $A \cdot \frac{A-B}{B}$, &c. reſpectively. I am obliged to have recourſe to ſuch expreſſions in the formulæ, which ought not on any account to be conſidered as algebraic, as it is impoſſible to expreſs them by means of geometrical ſchemes or figures in ſuch a way, as to be ſufficiently or clearly underſtood."

As both the differential and fluxionary calculi are immediately, and with the greateſt facility derivable from this calculus when the expreſſions in it are ſuppoſed to become numerical, or the ſtandard of compariſon to be 1, or arithmetical unity, and in forms too altogether unexceptionable, and as it is itſelf chiefly derived from the 1ſt and 5th formulæ in theorem 3 of the univerſal compariſon, it is perhaps neceſſary to prove the truth of theſe formulæ, by means of what is delivered in the paper firſt herein above-mentioned, that was read before the Royal Society of London in 1777, in which, among other things, it is demonſtrated geometrically, that if *n* be any whole or integral number whatſoever, and A and B be any two homogeneous magnitudes, $A + \frac{n-1}{1} \cdot A \cdot \frac{A-B}{B} + \frac{n-1}{1} \cdot \frac{n-2}{2} \cdot A \cdot \left.\frac{\overline{A-B}}{B}\right|^{2} + \text{\&c. to } A \cdot \left.\frac{\overline{A-B}}{B}\right|^{n-1}$ has to B, ſuch a multiplicate *ratio* of A to B, as is expreſſed by the number *n*. Now if in this geometrical expreſſion for A, we ſubſtitute its equal $B + \overline{A-B}$ we get the following expreſſion: $B + \frac{n}{1} \cdot \overline{A-B} + \frac{n}{1} \cdot \frac{n-1}{2} \cdot \left.\frac{\overline{A-B}}{B}\right|^{2} + \frac{n}{1} \cdot \frac{n-1}{2} \cdot \frac{n-2}{3} \cdot \left.\frac{\overline{A-B}}{B^2}\right|^{3} + \text{\&c. to } \left.\frac{\overline{A-B}}{B^{n-1}}\right|^{n}$, having alſo to B ſuch a multiplicate ratio of A to B as is expreſſed by the number *n*. This expreſſion may alſo be eaſily derived geometrically by means of Euclid's elements, in the manner purſued by Mr. Glenie in that paper. For let MN, NO, and OP be each equal to, or repreſent B, and let NR repreſent A. Let OP, NR be drawn perpendicularly to VO, or otherwiſe, if in the ſame angle; and let the rectangles or parallelograms MR, NP be completed. Let LM be a fourth proportional to OP, MN, and NR−OP, and let the rectangle or parallelogram LQ be completed.

Then (14. E. 6.) LT is equal to TR, and ſince MT is equal to TQ by conſtruction, LM is equal to QR, or A−B, and LN to A or $B + \overline{A-B}$. And ſince by (23. E. 6.) MR has to NP the *ratio* compounded of the *ratios*


Y
Z
S
R
A−B
A−B
A−B
Δ
I
H
T
Q
P
E
A
B
B
$\overline{A-B} + \left.\frac{\overline{A-B}}{B}\right|^{2}$
$B.\ \frac{A-B}{B}$
or
A−B
V
K
L
M
F
N
B
O

of MN to NO and NR to OP, the magnitude LN, which has to B the ratio compounded of the ratio of A to B, and the ratio of equality B to B is expreſſed by $B+\overline{A-B}$. In like manner if PI, RY be parallel to VO and KY to NR, and KL be a fourth proportional to OP, QR, and LN, or to B, $A-B$, and $B+\overline{A-B}$, it will be equal to $\overline{A-B}+\frac{\overline{A-B}^2}{B}$ and KN will be equal to $B+\frac{2}{1}\cdot\overline{A-B}+\frac{2}{1}\cdot\frac{2-1}{2}\cdot\frac{\overline{A-B}^2}{B}$.

Again, if VK be a fourth proportional to OP, QR, and KN, or to B, $A-B$, and $B+\frac{2}{1}\cdot\overline{A-B}+\frac{2}{1}\cdot\frac{2-1}{2}\cdot\frac{\overline{A-B}^2}{B}$, it will be equal to $\overline{A-B}+2\cdot\frac{\overline{A-B}^2}{B}+\frac{\overline{A-B}^3}{B^2}$ and VN will of courſe be equal to $B+3\cdot\overline{A-B}+3\cdot\frac{\overline{A-B}^2}{B}+\frac{\overline{A-B}^3}{B^2}$, or to $B+\frac{3}{1}\cdot\overline{A-B}+\frac{3}{1}\cdot\frac{3-1}{2}\cdot\frac{\overline{A-B}^2}{B}+\frac{3}{1}\cdot\frac{3-1}{2}\cdot\frac{3-2}{2}\cdot\frac{\overline{A-B}^3}{B^2}$. Wherefore the magnitude of the ſame kind with A and B, which has to B the triplicate ratio of A to B, or, which comes to the ſame thing, the ratio, that ariſes by compounding the triplicate ratio of A to B, with the ratio of equality B to B, is geometrically expreſſed by $B+\frac{3}{1}\cdot\overline{A-B}+\frac{3}{1}\cdot\frac{3-1}{2}\cdot\frac{\overline{A-B}^2}{B}+\frac{3}{1}\cdot\frac{3-1}{2}\cdot\frac{3-2}{3}\cdot\frac{\overline{A-B}^3}{B^2}$. And univerſally by the ſame geometrical reaſoning it is found that $B+\frac{n}{1}\cdot\overline{A-B}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{\overline{A-B}^2}{B}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}\cdot\frac{\overline{A-B}^3}{B^2}+$ &c. to $\frac{\overline{A-B}^n}{B^{n-1}}$ has to B ſuch a multiplicate ratio of A to B, or of $B+\overline{A-B}$ to B, as is expreſſed by the number n. And as $A-B$ may be equal to any magnitude C of the ſame kind with A and B the expreſſion $B+\frac{n}{1}\cdot C+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{C^2}{B}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}\cdot\frac{C^3}{B^2}+$ &c. &c. . . to $\frac{C^n}{B^{n-1}}$ is a magnitude of the ſame kind with C and B, that has to B ſuch a multiplicate ratio of $B+C$ to B as is expreſſed by the number n.

The foregoing expreſſions are obtained geometrically when A is greater than B. But if A be leſs than B, and be repreſented by EN or FN, we have FM equal to $B-A$, and by proceeding in an exactly ſimilar manner we get the geometrical expreſſion $B-\frac{n}{1}\cdot\overline{B-A}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{\overline{B-A}^2}{B}-\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}\cdot\frac{\overline{B-A}^3}{B^2}+$ &c. . . . to $\pm\frac{\overline{B-A}^n}{B^{n-1}}$, for the magnitude of the ſame kind with A and B, that has to B ſuch a multiplicate ratio of A to B, or of $B-\overline{B-A}$ to B, as is expreſſed by the number n. And, as $\overline{B-A}$ may be equal to any magnitude C, of the ſame kind with A and B, $B-\frac{n}{1}\cdot C+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{C^2}{B}-\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{2}\cdot\frac{C^3}{B^2}+-$ &c. . . to $\pm\frac{C^n}{B^{n-1}}$ has to B ſuch a multiplicate ratio of $B-C$ to B as is expreſſed by the number n.

That $B+\frac{nr}{q}\cdot\overline{A-B}+\frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}^2}{B}+$ &c. &c. has to B ſuch a multiplicate ratio of $B+\frac{r}{q}\cdot\overline{A-B}+\frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{A-B}^2}{B}+$ &c. &c. to B as is expreſſed by the number n is thus ſhewn. Let $B+D$ be equal to $B+\frac{r}{q}\cdot\overline{A-B}+\frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{A-B}^2}{B}+$ &c. &c. (r and q having to each other the ratio of any two homogeneous magnitudes whatever). Then $B+\frac{n}{1}\cdot D+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{D^2}{B}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}\cdot\frac{D^3}{B^2}+$ &c. to $\frac{D^n}{B^{n-1}}$ has to B (by what is above demonſtrated) ſuch a multiplicate ratio of $B+D$ to B, as is expreſſed by the number n. Now if the term, in which $A-B$ is found in the value of D, be multiplied by $\frac{n}{1}$, the co-efficient of D we get $\frac{nr}{q}\cdot\overline{A-B}$ for the ſecond term of the expreſſion, (in terms of n, r, q, and $A-B$). And if the term, in which $\frac{\overline{A-B}^2}{B}$ is found in the value of D, be multiplied by $\frac{n}{1}$, the co-efficient of D, and the term, in which $\frac{\overline{A-B}^2}{B}$ is found in the value of $\frac{D^2}{B}$, be multiplied by $\frac{n}{1}\cdot\frac{n-1}{2}$ the co-efficient of $\frac{D^2}{B}$, theſe taken together will give us $\frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}^2}{B}$ for the third term. And by thus proceeding we get $B+\frac{n}{1}\cdot D+\frac{n}{1}\cdot\frac{n-1}{2}\frac{D^2}{B}+\frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}\cdot\frac{D^3}{B^2}+$ &c. . . . to $\frac{D^n}{B^{n-1}}$ equal to $B+\frac{nr}{q}\cdot\overline{A-B}+\frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}^2}{B}+$ &c. &c. whatever be the ratio of r to q.

Preciſely in the ſame manner is it proved that the ratio $B-\frac{nr}{q}\cdot\overline{B-A}+\frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{B-A}^2}{B}-+$ &c. : B is a multiple by n of the ratio $B-\frac{r}{q}\cdot\overline{B-A}+\frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{B-A}^2}{B}-+$ &c. : B.

This then being premiſed, it can be generally, and at the ſame time very briefly proved, that $B+\frac{r}{q}\cdot\overline{A-B}+\frac{r}{q}\cdot\frac{r-q}{2q}$

$\frac{r-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{r-2q}{3q}\cdot\frac{\overline{A-B}|^{3}}{B^{2}} + \&c.$ has to B ſuch a *ratio*, as has to the *ratio* of $B+\overline{A-B}$ to B, or of A to B, the ratio of r to q, be the ratio of r to q what it may, by taking any multiples whatſoever of theſe ratios and the ſame multiples of r and q. For the ſake of perſpicuity let theſe magnitudes, and their multiples, ſtand in the following manner:

The magnitudes.	Their multiples.
1ſt. . . . . r	Of the 1ſt. . . . . . nr
2d. . . . . q	Of the 2d. . . . . . mq
3d. $B + \frac{r}{q}\cdot\overline{B-B} + \frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{A-B}\|^{2}}{B} + \&c. : B$	3d. $B \quad \frac{nr}{q}\cdot\overline{A-B} + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}\|^{2}}{B} + \&c. : B$
4th. . . $B + \overline{A-B} : B$	4th. $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}\|^{2}}{B} + \&c. : B$

Now it is evident, that if nr be equal to mq, by ſubſtituting mq for nr, the ratio $B + \frac{nr}{q}\cdot\overline{A-B} + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. : B$ is equal to, or becomes the ratio $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c.$ . . to $\frac{\overline{A-B}|^{m}}{B^{m-1}} :$ B.

It is equally evident, that if nr be greater than mq, the antecedent $B + \frac{nr}{q}\cdot\overline{A-B} + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c.$ is greater than $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c.$ to $\frac{\overline{A-B}|^{m}}{B^{m-1}}$ ſince . . .

$$\left.\begin{array}{rl} & \frac{nr}{q},\ \frac{nr}{q}\cdot\frac{nr-q}{2q},\ \&c. \\ \text{are then reſpectively greater than} & \frac{mq}{q},\ \frac{mq}{q}\cdot\frac{mq-q}{2q},\ \&c. \\ \text{or than} & \frac{m}{1},\ \frac{m}{1}\cdot\frac{mq-1}{2},\ \&c. \end{array}\right\}$$

and the ratio $B + \frac{nr}{q}\cdot\overline{A-B} + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. : B$ is, of courſe, a greater ratio of greater inequality than the ratio $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. : B$ is. And it is no leſs evident that, if nr be leſs than mq, the antecedent $B + \frac{nr}{q}\cdot A-B + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c.$ is leſs than the antecedent $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c.$ ſince . . .

$$\left.\begin{array}{rl} & \frac{nr}{q},\ \frac{nr}{q}\cdot\frac{nr-q}{2q},\ \&c. \\ \text{are then reſpectively leſs than . .} & \frac{mq}{q},\ \frac{mq}{q}\cdot\frac{mq-q}{2q},\ \&c. \\ \text{or than . . .} & \frac{m}{1},\ \frac{m}{1}\cdot\frac{m-1}{2},\ \&c. \end{array}\right\}$$

and the ratio $B + \frac{nr}{q}\cdot\overline{A-B} + \frac{nr}{q}\cdot\frac{nr-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. :$ B is then, of courſe, a leſs ratio of greater inequality than the ratio $B + \frac{m}{1}\cdot\overline{A-B} + \frac{m}{1}\cdot\frac{m-1}{2}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. :$ B is.

Here then are four magnitudes, and any equimultiples being taken of the 1ſt and 3d, and alſo any equimultiples being taken of the 2d and 4th, it is proved that, if the multiple of the 1ſt be equal to the multiple of the 2d, the multiple of the 3d is alſo equal to the multiple of the 4th; if greater, greater; and if leſs, leſs. Wherefore (5. Def. E. 5.) the magnitudes themſelves are proportional, or the ratio $B + \frac{r}{q}\cdot\overline{A-B} + \frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \&c. :$ B is to the ratio $B + \overline{A-B} :$ B as $r : q$ whatever be the *ratio* of r to q.

Having thus fully explained the doctrine of proportion, on which this calculus is grounded, we will briefly illuſtrate Mr. Glenie's derivation of it from the ſame, and then ſhew, with how much eaſe and facility both the differential and fluxionary calculi may be derived from the ſame ſource, and in a manner too altogether unexceptionable.

If for R and Q we ſubſtitute r and q in the 1ſt and 5th formulæ, in the 3d theorem of his Univerſal Compariſon, they become reſpectively $A + \frac{r-q}{q}\cdot A\cdot\frac{\overline{A-B}|}{B} + \frac{r-q}{q}\cdot\frac{r-2q}{2q}\cdot A\cdot\frac{\overline{A-B}|^{2}}{B^{2}} + \frac{r-q}{q}\cdot\frac{r-2q}{2q}\cdot\frac{r-3q}{3q}\cdot A\cdot\frac{\overline{A-B}|^{3}}{B^{3}} + \&c.$ and $B + \frac{r}{q}\cdot\overline{A-B} + \frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{\overline{A-B}|^{2}}{B} + \frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{r-2q}{3q}\cdot\frac{\overline{A-B}|^{3}}{B^{2}} + \&c.$ the laſt of which is immediately derived from the firſt, by ſubſtituting for A in it, where it ſtands unconnected with B by the ſign minus, $B + \overline{A-B}$, which is equal to A, and is the very magnitude which we have juſt proved to have to B a ratio, which has to the ratio of $B + \overline{A-B} :$ B or of A to B the ratio of $r : q$, even when r has to q the ratio of any two homogeneous magnitudes whatſoever.

Mr. Glenie, however, takes the 1ſt of theſe two formulæ, and ſuppoſes A+N to be in the firſt place ſubſtituted in it every where for A. By this ſubſtitution he gets $A + N + \overline{A+N}\cdot\frac{A-B+N}{B}$ for the magnitude, which has to B the duplicate ratio of A+N to B, exceeding the magnitude $A + A\cdot\frac{A-B}{B}$, which has to B the duplicate ratio of A to B, by $\frac{2AN+N^{2}}{B}$: In like manner he gets the exceſs of the magnitude, which has to B the triplicate ratio of A+N to B above the magnitude, which has to B the triplicate ratio of A to B, equal to the geometrical expreſſion $\frac{3A^2N+3AN^2+N^3}{B^2}$. And he thus finds, in general, that the exceſs of the magnitude, which has to B ſuch a ratio, as has to the ratio of A+N to B the ratio of r to q, (when r has to q any given ratio whatever,) above the magnitude, which has to B ſuch a ratio, as has to the ratio of A to B, the ſame ratio of r to q is geometrically expreſſed by

$$\frac{\frac{r}{q}\cdot A^{\frac{r-q}{q}}\cdot N+\frac{r}{q}\cdot\frac{r-q}{2q}\cdot A^{\frac{r-2q}{q}}\cdot N^2+}{B^{\frac{r-q}{q}}}$$

$$\frac{\frac{r}{q}\cdot\frac{r-q}{2q}\cdot\frac{r-2q}{3q}\cdot A^{\frac{r-3q}{q}}\cdot N^3+\text{\&c.}}{B^{\frac{r-q}{q}}}$$

Preciſely in the ſame manner he makes it appear, that the exceſs of the magnitude, which has to B ſuch a ratio, as has to the ratio of A to B the ratio of r to q, above the magnitude, which has to B ſuch a ratio, as has to the ratio of A−N to B the ratio of r to q is geometrically expreſſed by

$$\frac{\frac{r}{q}\cdot A^{\frac{r-q}{q}}\cdot N-\frac{r}{q}\cdot\frac{r-q}{2q}\cdot A^{\frac{r-2q}{q}}\cdot N^2+\frac{r}{q}\cdot}{B^{\frac{r-q}{q}}}$$

$$\frac{\frac{r-q}{2q}\cdot\frac{r-2q}{3q}\cdot A^{\frac{r-3q}{q}}\cdot N^3-+-\text{\&c.}}{B^{\frac{r-q}{q}}}$$

But if A+N and A−N ſtand to A in relations nearer to that of equality than by any given or aſſigned magnitudes of the ſame kind, each of theſe general expreſſions becomes $\frac{\frac{r}{q}\cdot A^{\frac{r-q}{q}}\cdot N}{B^{\frac{r-q}{q}}}$. Thus he calls the antecedental of the magnitude, which has to B ſuch a ratio, as has to the ratio of A to B the ratio of r to q.

Now if N, the antecedental of A, be denoted by $\overset{a}{A}$ or $\dot{A}$ (for the notation does not at all alter the caſe) the antecedental $\frac{\frac{r}{q}\cdot A^{\frac{r-q}{q}}\cdot N}{B^{\frac{r-q}{q}}}$ becomes $\frac{\frac{r}{q}\cdot A^{\frac{r-q}{q}}\cdot\overset{n}{A}}{B^{\frac{r-q}{q}}}$ or $\frac{r}{q}\cdot\frac{A^{\frac{r-q}{q}}}{B^{\frac{r-q}{q}}}\cdot\dot{A}$ and has to $\overset{a}{A}$ or $\dot{A}$ the ratio of $\frac{r}{q}\cdot\frac{A^{\frac{r-q}{q}}}{B^{\frac{r-q}{q}}}:B$. If $q=1$ and $r=2, 3, 4$, &c. it gives $\frac{2A\overset{a}{A}}{B}$, $\frac{3A^2\overset{a}{A}}{B^2}$, $\frac{4A^3\overset{a}{A}}{B^3}$, $\frac{5A^4\overset{a}{A}}{B^4}$, &c. reſpectively. If $r=1$ and $q=2, 3, 4$, &c. it gives $\frac{A^{-\frac{1}{2}}\overset{a}{A}}{2B^{-\frac{1}{2}}}$, $\frac{A^{-\frac{2}{3}}\overset{a}{A}}{3B^{-\frac{2}{3}}}$, $\frac{A^{-\frac{3}{4}}\overset{a}{A}}{B^{-\frac{3}{4}}}$, &c. reſpectively. And if $q=1$ and $r=\sqrt{2}$, $\sqrt[4]{3}$, $\sqrt[3]{4}$, $\sqrt[4]{5}$, &c. it gives $\sqrt{2}\cdot\frac{A^{\sqrt{2}-1}\overset{a}{A}}{B^{\sqrt{2}-1}}$, $\frac{\sqrt[4]{3}\cdot A^{\sqrt[4]{3}-1}\overset{a}{A}}{B^{\sqrt[4]{3}-1}}$, $\frac{\sqrt[3]{4}\cdot A^{\sqrt[3]{4}-1}\overset{a}{A}}{B^{\sqrt[3]{4}-1}}$, &c. reſpectively, and ſo on.

Mr. Glenie then makes uſe of the laſt of theſe two formulæ, which is the 5th of theorem 3d, to come at the ſame concluſions. By it, when A ſtands to B in a relation nearer to that of equality than by any given or aſſigned magnitude of the ſame kind, the exceſs of the magnitude, (which has to B ſuch a ratio as has to the ratio of A to B the ratio of r to q), above B is generally expreſſed by $\frac{r}{q}\cdot\overline{A-B}$ or by $\frac{r}{q}\cdot\overset{a}{A}$ or by $\frac{r}{q}\cdot\dot{A}$, ſince in this relation of (A to B), A−B may be denoted by $\overset{a}{A}$ or $\dot{A}$; which expreſſion is always as the meaſure or quantity of the ratio, that the ſaid formula has to B, whatever be the relation of A to B. For in the ſimple, duplicate, triplicate ratios, &c. it gives $\dot{A}$, $2\dot{A}$, $3\dot{A}$, &c. and in the ſubduplicate, ſubtriplicate ratios, &c. $\frac{\dot{A}}{2}$, $\frac{\dot{A}}{3}$, &c. or $\frac{\overset{a}{A}}{2}$, $\frac{\overset{a}{A}}{3}$, &c. But if the ratio of $\frac{r}{q}\cdot\dot{A}$ to $\dot{A}$ or $\frac{r}{q}\cdot\overset{a}{A}$ to $\overset{a}{A}$, which denotes the relation between the quantities of the ratios, that the magnitude expreſſed by this formula and A have reſpectively to B, be compounded with the ratio of theſe magnitudes themſelves, when A has to B any ratio whatever, or with that of $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$ to A we get the ratio $\frac{r}{q}\cdot\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}\dot{A}$ to $A\cdot\dot{A}$, which is equal to the ratio of $\frac{r}{q}\cdot\frac{A^{q}}{B^{\frac{r-2q}{q}}}$ to B the ratio of the antecedentals of $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$ and A as found above.

It is certainly worthy of remark, that the antecedental of any ſuch magnitude as $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$ is a fourth proportional to B the ſtandard of compariſon, the magnitude itſelf, and the antecedental of the magnitude of the ratio, which it has to the ſtandard B. Thus a fourth proportional to B, A, and $\frac{\overline{B\cdot\dot{A}}}{A}$ is $\dot{A}$ or $\overset{a}{A}$ the antecedental of A; a fourth propor-

tional

portional to B, $\frac{A^2}{B}$, and $\frac{2B.\overset{a}{A}}{A}$ is $\frac{2A.\overset{a}{A}}{B}$; and a fourth proportional to B, $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$, and $\frac{r}{q}$. $\frac{B.\overset{a}{A}}{A}$ is $\frac{r}{q}$. $\frac{A^{\frac{r-q}{q}}.\overset{a}{A}}{B^{\frac{r-q}{q}}}$. Alſo 1 : A^2 : : $\frac{2\overset{a}{A}}{A}$: $2A . \overset{a}{A}$; and 1 : A^3 : : $\frac{3\overset{a}{A}}{A}$: $3A^2.\overset{a}{A}$.

By means of the firſt formula in theorem 1 of his Univerſal Compariſon, which expreſſes the magnitude, that has to B ſuch a ratio, as ariſes by compounding any number of ratios C to D, E to F, &c. with the ratio of A to B, he determines the antecedental of $\frac{A.C}{D}$ to be $\frac{A\overset{a}{C}+C\overset{a}{A}}{D}$ or $\frac{A\dot{C}+C\dot{A}}{D}$, and that of $\frac{A.C.E}{D.F}$ to be $\frac{AC.\overset{a}{E}}{DF}$ + $\frac{AE.\overset{a}{C}}{DF}$ + $\frac{CE.\overset{a}{A}}{DF}$ or $\frac{AC\dot{E}+AE\dot{C}+CE\dot{A}}{DF}$, and ſo on, ſuppoſing the conſequents D, F, &c. of the ratios to be invariable. And it is obſervable, that the antecedental of $\frac{AC}{D}$ is equal to a fourth proportional to B, the magnitude $\frac{AC}{D}$ itſelf, and the antecedental of the magnitude of the ratio of A to B, together with a fourth proportional to D, the magnitude $\frac{AC}{D}$ and the antecedental of the magnitude of the ratio of C to D; that the antecedental of $\frac{ACE}{DF}$ is equal to a fourth proportional to B, $\frac{ACE}{DF}$ and the antecedental of the magnitude of the ratio of A to B, together with a fourth proportional to D, $\frac{ACE}{DF}$, and the antecedental of the magnitude of the ratio of C to D, together with a fourth proportional to F, $\frac{ACE}{DF}$, and the antecedental of the magnitude of the ratio of E to F; and ſo on.

He makes uſe of the firſt formula in Theorem 2, Univerſal Compariſon, which expreſſes the magnitude, that has to B ſuch a ratio, as ariſes by decompounding any number of ratios C to D, E to F, &c. with the ratio of A to B to determine the antecedental of $\frac{AD}{C}$, $\frac{ADF}{CE}$, and ſo on for any number of ratios.

And here it is alſo obſervable, that the antecedental of $\frac{AD}{C}$ or $\frac{CD\overset{a}{A}-AD\overset{a}{C}}{C^2}$ or $\frac{CD\dot{A}-AD\dot{C}}{C^2}$ is equal to the exceſs of a fourth proportional to B, $\frac{AD}{C}$, and the antecedental of the magnitude of the ratio of A to B above a fourth proportional to D, $\frac{AD}{C}$, and the antecedental of the magnitude of the ratio of C to D; and ſo on.

And it is eaſily ſhewn, from the principles he has laid down, that the antecedental of $\frac{A^{\frac{V}{B}}}{B^{\frac{V-B}{B}}}$ is $\frac{A^{\frac{V}{B}}}{B^{\frac{V\ B}{B}}}$ × $\left(\frac{V\overset{a}{M}+M\overset{a}{V}}{B^2}\right)$ or $\frac{A^{\frac{V}{B}}}{B^{\frac{V}{B}}}$ × $\left(\frac{V\overset{a}{M}+M\overset{a}{V}}{B}\right)$ or that the antecedental of $\frac{A^v}{B^{v-1}}$ is $\frac{A^v}{B^{v-1}}$ × $\left(\frac{v\overset{a}{M}+M\overset{a}{v}}{B}\right)$. For, if M denote the magnitude of the ratio A : B to the ſtandard of compariſon B, vM will be the magnitude of the ratio of $\frac{A^v}{B^{v-1}}$ to B. But $\frac{A^v}{B^{v-1}}$: B : : the antecedental of $\frac{A^v}{B^{v-1}}$: the antecedental of v M $(v\overset{a}{M}+M\overset{a}{v})$. Wherefore the antecedental of $\frac{A^v}{B^{v-1}}$ is $\frac{A^v}{B^{v-1}}$ × $\left(\frac{v\overset{a}{M}+M\overset{a}{v}}{B}\right)$ or $\frac{A^v}{B^{v-1}}$ × $\left(\frac{v\dot{M}+M\dot{v}}{B}\right)$.

The antecedents and their antecedentals will therefore ſtand thus, B being the ſtandard of compariſon.

Antecedent.	Antecedental.
A	$\overset{a}{A}$ or $\dot{A}$
$A\cdot\frac{A.}{B.}$	$\frac{2A\overset{a}{A}}{B}$ or $\frac{2A\dot{A}}{B}$ or $2\overset{a}{A}+\frac{2N\overset{a}{A}}{B}$ (putting N for A—B), or, &c.
A^2 or $A.\frac{A}{B}.B$	$2A\overset{a}{A}$ or $2B\overset{a}{A}+2N\overset{a}{A}$, or, &c.
$\frac{A^3}{B^2}$ or $A.\frac{A^2}{B^3}$	$\frac{3A^2\overset{a}{A}}{B^2}$ or $\frac{3A\overset{a}{A}}{B}+\frac{3AN\overset{a}{A}}{B^2}$ or $3\overset{a}{A}+\frac{6N\overset{a}{A}}{B}+\frac{3N^2\overset{a}{A}}{B^2}$, or, &c.
A^3 or $A.\frac{A^2}{B}B^2$	$3A^2\overset{a}{A}$, or $3BA\overset{a}{A}+3AN\overset{a}{A}$, or $3B^2\overset{a}{A}+6BN\overset{a}{A}+3N^2\overset{a}{A}$, or &c.
And in general $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$	$\frac{r.A^{\frac{r-q}{q}}.\overset{a}{A}}{q.B^{\frac{r-q}{q}}}$ or $\frac{rA\overset{a}{A}}{qB}+\frac{r}{q}.\frac{r-2q}{q}.\frac{AN\overset{a}{A}}{B^2}+\frac{r}{q}.\frac{r-2q}{q}.\frac{r-3q}{2q}.\frac{AN^2\overset{a}{A}}{B^3}+$ &c. or $\frac{r\overset{a}{A}}{q}+\frac{r}{q}.\frac{r-q}{q}.\frac{N\overset{a}{A}}{B}+\frac{r}{q}.\frac{r\ q}{q}.\frac{r-2q}{2q}.\frac{N^2\overset{a}{A}}{B^2}+$ &c. or &c. &c.

Antecedent.	Antecedental.
$\frac{AC}{D}$	$\frac{A\overset{a}{C}+C\overset{a}{A}}{D}$ or &c. &c.
AC	$A\overset{a}{C}+C\overset{a}{A}$, or &c.
$\frac{ACE}{DF}$	$\frac{AC\overset{a}{E}+AE\overset{a}{C}+CE\overset{a}{A}}{DF}$, or &c.
ACE	$AC\overset{a}{E}+AE\overset{a}{C}+CE\overset{a}{A}$, or &c.
And ſo on.	
$\frac{AD}{C}$	$\frac{CD\overset{a}{A}-AD\overset{a}{C}}{C^2}$, or &c.
BA	$B\overset{a}{A}$
$\frac{DA^n}{B^n}$	$\frac{nDA^{n-1}\overset{a}{A}}{B^n}$, or &c. &c.
$B+A+C$	$\overset{a}{A}+\overset{a}{C}$
$BA+\frac{DA^n}{B^n}$	$B\overset{a}{A}+\frac{nDA^{n-1}\overset{a}{A}}{B^n}$, or &c.
$\frac{Av}{B^{v-1}}$	$\frac{Av}{B^{v-1}} \times \left(\frac{v\overset{a}{M}+M\overset{a}{v}}{B}\right)$, or &c. calling M the magnitude of the ratio of A to B.
&c. &c.	&c. &c.

Mr. Glenie informs us that this calculus firſt occurred to him in 1774, and that, as it is purely geometrical and perfectly ſcientific, he has always ſince that time uſed it inſtead of the fluxionary and differential calculi. In a paper, which was written in a great meaſure at the requeſt of ſome of his friends, as he informs us, and is publiſhed in the fourth volume of the Tranſactions of the Royal Society of Edinburgh, explanatory of its principles, to prevent miſconceptions and erroneous opinions reſpecting them, he ſhews that they are the ſame with thoſe on which the geometrical formulæ in the Univerſal Compariſon itſelf are founded; that no indefinitely ſmall or infinitely little magnitudes are ſuppoſed in it, but only magnitudes leſs than any that may be given or aſſigned, and ratios nearer to that of equality than any that may be given or aſſigned, and proves it to be equally geometrical with the method of exhauſtions of the ancients, who never ſuppoſed lines, ſurfaces, or ſolids to be reſolved into infinitely ſmall or infinitely little elements. He ſays, indeed, that the expreſſion, *infinitely little magnitude* implies a contradiction, ſince what has magnitude cannot be infinitely little.

We ſhall now ſhew, with what facility both theſe other calculi may be derived from the ſame principles.

The general geometrical expreſſions, from which the antecedental of $\frac{A^{\frac{r}{q}}}{B^{\frac{r-q}{q}}}$ was derived,

$$\left.\begin{array}{l} \text{become } \frac{r}{q} \cdot A^{\frac{r-q}{q}} . N + \frac{r}{q} . \frac{r-q}{2q} . A^{\frac{r-2q}{q}} . N^2 + \&c. \\ \text{and } \frac{r}{q} . A^{\frac{r-q}{q}} N - \frac{r}{q} . \frac{r-q}{2q} . A^{\frac{r-2q}{q}} . N^2 + - + \&c. \end{array}\right\}$$

reſpectively when B, the ſtandard of compariſon, becomes 1, or arithmetical unity, and when A+N and A−N are to A in relations nearer to that of equality than by any given or aſſigned magnitude of the ſame kind they become each of them $\frac{r}{q} . A^{\frac{r-q}{r}} N$. Now if we denote the differential of A by dA, and ſubſtitute this for N, we get $\frac{r}{q} . A^{\frac{r-q}{q}} dA$ for the differential of $A^{\frac{r}{q}}$, and if we call $\dot{A}$ the fluxion of A and ſubſtitute it for N we get $\frac{r}{q} . A^{\frac{r-q}{q}} \dot{A}$ for the fluxion of $A^{\frac{r}{q}}$. And it is evident that $\frac{r}{q} . A^{\frac{r-q}{q}} dA$ is a fourth proportional to 1 (the arithmetical ſtandard of compariſon, to which the expreſſions both in the fluxionary and differential calculi have a reference), $A^{\frac{r}{q}}$, and $\frac{r}{q} . \frac{dA}{A}$ the differential of the magnitude of the ratio $A^{\frac{r}{q}}$: 1 to the ſaid ſtandard 1; and that $\frac{r}{q} . A^{\frac{r-q}{q}} \dot{A}$ is a fourth proportional to 1, $A^{\frac{r}{q}}$, and $\frac{r}{q} . \frac{\dot{A}}{A}$ the fluxion of the magnitude of the ratio $A^{\frac{r}{q}}$: 1 to the ſame ſtandard 1. If, therefore, we make uſe of x, y, z, &c. inſtead of the variable magnitudes A, C, E, &c. in the antecedental calculus as delivered by its inventor, the integrals and their differentials will ſtand as follows:

Integral.	Differential,
x	dx
x^2	$2xdx$
x^3	$3x^2dx$
x^r	$rx^{r-1}dx$
$x^{\frac{r}{q}}$	$\frac{r}{q} . x^{\frac{r-q}{q}} dx$
xy	$xdy+ydx$
$\frac{xy}{b}$	$\frac{xdy+ydx}{b}$
xyz	$xydz+xzdy+yzdx$
$\frac{x}{y}$	$\frac{ydx-xdy}{y^2}$
$a+x+y$	$dx+dy$
x^v	$x^v \times (vdm+mdv)$ putting m for the magnitude of the ratio of x to 1.
&c. &c. &c.	&c. &c. &c.

And the fluents and their fluxions will ſtand in the following manner.

Fluent	Fluxion.
x	$\dot{x}$
x^2	$2x\dot{x}$
x^3	$3x^2\dot{x}$
x^r	$rx^{r-1}\dot{x}$

Fluent.

Fluent.	Fluxion.
$x^{\frac{r}{q}}$	$\frac{r}{q} : x^{\frac{r-q}{q}} \dot{x}$
xy	$x\dot{y}+y\dot{x}$
$\frac{xy}{b}$	$\frac{x\dot{y}+y\dot{x}}{b}$
xyz	$xy\dot{z}+xz\dot{y}+yz\dot{x}$
$\frac{x}{y}$	$\frac{y\dot{x}-x\dot{y}}{y^2}$
$a+x+y$	$\dot{x}+\dot{y}$
x^v	$x^v \times (\dot{v}m+m\dot{v})$ putting m for the magnitude of the ratio of x to 1
&c. &c. &c.	&c. &c. &c.

Thus it is manifeſt that the fluxionary and differential calculi are legitimately derivable from one and the ſame ſource, *viz.* general arithmetical proportion, and are in fact a branch of it, differing only from each other in words and in the methods of notation. Sir Iſaac Newton has not determined the fluxion of $x^{\frac{r}{q}}$ when r has to q any ratio whatſoever. Neither has Mr. Leibnitz determined the differential of $x^{\frac{r}{q}}$ when r and q are not integers but have to each other the ratio of any two homogeneous magnitudes whatſoever. But they are obtained immediately by this method of deriving theſe calculi, and of courſe the fluxion and differential of $x^{\frac{r}{q}}$ in every poſſible relation, that r can ſtand in to q, whether it be that of two integers, two ſurds, two lines, two ſurfaces, or two ſolids, &c.

Calculus, *Arithmetical*, or *Numeral*, is the method of performing arithmetical computations by numbers. See Arithmetic.

Calculus, *Algebraical.* See Calculus *literalis* and Algebra.

Calculus *of derivations*, denotes a general method of conſidering quantities, deriving themſelves one from the other, particularly developed and illuſtrated by M. L. F. A. Arbogaſt, of the National Inſtitute of France, and profeſſor of mathematics at Straſburgh, in a treatiſe entitled "Du Calcul des Dérivations," &c. 4to. Straſburgh, 1800. "To form an idea (ſays the author) of theſe derivations, it is to be obſerved that quantities or functions, which are deduced the one from the other, by an uniform proceſs of operations, are derived quantities; ſuch are the ſucceſſive differentials. This idea may be extended, by conſidering quantities that are derived one from another, not in themſelves, but ſolely in the operations which collect and bind them together; the quantities themſelves being any whatſoever arbitrary and independent. Thus, on the ſuppoſition that, out of many different letters, the firſt enters ſolely into a function, while the two next enter into the derivative of that function; that the firſt three, by the ſame law, enter into the derivative of the derivative, and ſo on; we ſhall have the derivatives in the extended ſenſe which I have given to them. In my theory, the quantities deſignated by different letters are not derived one from another; and the derivatives which I conſider are leſs the derivatives of quantities than of operations; as algebra is leſs a calculus of quantities than of operations, arithmetical or geometrical, to be performed on quantities. Derivation is the operation by which a derivative is deduced from that which precedes it, or from the function. The method of derivations, in general, conſiſts in ſeizing the law that connects together the parcels of any quantities whatever; and in making uſe of this law as a method of calculation for paſſing from derivative to derivative."

In order to form the algorithm of derivations, the author has introduced new ſigns. Accordingly, as Leibnitz has appropriated the ſymbol d to denote the operation for obtaining the differential of a quantity, M. Arbogaſt employs the ſymbol D in the proceſs for obtaining the derivative of a quantity: thus, $D\ (xm) = m\ xm - 1$, $D\ (ax) = ax$; and the developement of a function, $F\ (\alpha + x)$, is therefore thus expreſſed:

$$F\alpha + \frac{DF\alpha}{1} x + \frac{D^2F\alpha}{1.2} x^2 +, \&c.$$

which, according to the notation in the differential calculus, is

$$F\alpha + \frac{dF\alpha}{d\alpha} x + \frac{d^2F\alpha}{1.2.2.d\alpha}{}^2 x^2 +, \&c.$$

To avoid writing the factors, 1.2.3, &c. in the denominators, let Dc_n generally repreſent $\frac{Dn}{1.2.3.-n}$; then,

$F\ (\alpha + x) = F\alpha + DF\alpha\ x + Dc^2F\alpha.x^2 + Dc^3F\alpha\ x^3 +, \&c.$ This is the known form for the developement of the function of a binomial; and the object of the primary articles of the preſent treatiſe is to find a form for the developement of the function of a polynomial; viz. $\alpha + \beta x + \gamma x^2 + \delta x^3 +, \&c.$ The method of obtaining it may be thus briefly explained:—When α is variable, and $D\alpha = \beta$. write $D.\phi\alpha$ for the derivative: when α is variable, and $D\alpha = 1$, write $D\phi\alpha$ for the derivative: therefore,

$$\phi F\ (\alpha + \beta x) = \phi\ (F\alpha + D.F\alpha.x + Dc^2.F\alpha.x^2 +, \&c.):$$

but $\underset{F}{\phi} F\ (\alpha + \beta x) = \underset{F}{\phi} F\alpha + D.\phi F\alpha.x + Dc^2.\phi F\alpha.x^2 +, \&c.$ put $F\alpha = a$, $DFa = D.\ a$, &c. and $\phi(a + D.\ a.x + Dc^2.a.x^2 +, \&c.) = \phi a. + D.\ \phi a.\ x + Dc^2.\ \phi a.\ x^2, \&c.$
Now, to determine $D\ \phi a$, $D^2.\ \phi a.$ &c. we have

$$D.\ \phi a = D\phi a.\ D.\ a$$
$$D^2.\ \phi a = D.\ (D.\ \phi a) = D\ (D\phi a.\ D.\ a) = D\phi a.\ D^2.a + D^2\phi a.\ (D.\ a)^2, \text{ and ſo on.}$$

To find $\phi\ (\alpha + \beta x + \gamma x^2 +, \&c.)$, put it $= \phi\alpha + D\ \phi\alpha.\ x + Dc^2.\ \phi\alpha.\ x^2 +, \&c$; develope $D.\ \phi\alpha$, $D^2.\ \phi\alpha$, &c; and after developement put $Dc.\ \alpha = \beta$, $Dc^2.\ \alpha = \gamma$, $Dc^3.\ \alpha = \delta$, &c. Hence it appears that $\phi\ (\alpha + \beta x + \gamma x^2 +, \&c.)$ may be converted into a ſeries of the form $A + Bx + Cx^2 + Dx^3 + \&c.$; and the firſt term A will $= \phi a$.
The coefficient of the ſecond term will $= D.\phi\alpha.$ or $D\ A$.
The coefficient of the third term will $= D^2.\phi\alpha$, or $D^2\ A$.
The coefficient of the $\overline{n+1}$ will $= D^n.\ \phi\alpha$, or $D^n.A$; provided that, after the derivations have been made, we put in the reſults β for $D.\ \alpha$, γ for $Dc^2.\ a$, &c. B for D A. C for Dc^2. A, &c.

The coefficient of xn or An in the ſeries $A + Bx +, \&c.$ equals $Dcn.\phi\alpha$, which is $= D\phi\alpha.\ Dc^{n-1}.\ \beta + D^2\ \phi\alpha.\ Dc^{n-2}.\ \beta^2 +, \&c.$——$Dcn\ \phi\alpha.\ \beta^n$.

The method of proof is this:—

put $\pi = \beta + \gamma x + \delta x^2 +, \&c.$
then $\phi\ (\alpha + \beta x + \gamma x^2 +, \&c.) = \phi\ (\alpha + \pi x)$
$= \phi\alpha + D\phi\alpha.\pi x + Dc^2\ \phi\alpha.\ \pi^2\ x^2 +, \&c.$
but π, π^2, π^3——π^n are functions of the polynomial, $\alpha + \beta x + \gamma x^2$, &c.
$\therefore$ generally $\pi n = \beta n + D.\ \beta n.x + Dc^2.\ \beta^n.x^2 +, \&c (2.)$

Write, therefore, in ſeries (1), for π, π^2, π^3—πn, the values reſulting from (2); collect the terms affected with the ſame power of x; and it will eaſily appear that the coefficient of x^n, or A^n, is ſuch as we have ſtated it to be.

In this method is comprehended, as is evident, the form for the developement of a polynomial raiſed to any power which was firſt given, but without ſatisfactory demonſtration, by De Moivre, in the Tranſactions of the Royal Society, and in his "Miſcellanea Analytica," p. 87. The above form of M. Arbogaſt has many advantages; it exhibits compendiouſly the law of the coefficients by means of the ſymbol D; and, when the operations indicated are to be actually performed, the coefficients eaſily reſult in terms of the polynomial quantities.

The formula for the function, being general, manifeſtly ſerves for the developement of expreſſions, ſuch as

$\alpha + \beta x + \gamma x^2 +$, &c., ſin. $(\alpha + \beta n + \gamma x^2 +$, &c.) &c.

After having exhibited the general form for $\phi\,(\alpha + \beta x + \gamma x^2 +$, &c.) M. Arbogaſt ſhews how from one term to deduce the next ſucceeding, and likewiſe how to calculate any term whatever of the developement, independently of all the others. The length and intricacy of the calculations render it impoſſible for us to give details of theſe methods.

In the latter part of the firſt article, the author applies his method of derivation to aſſign the ſum of the powers of the roots of an equation, in terms of the coefficients of the equation; and the formula which he deduces is remarkable for the ſimplicity of the law by which the coefficients are expreſſed. Vandermonde (Memoirs of the Academy, 1771, p. 373.), Euler (Comms. Pat. 15 vol.), La Grange (Memoirs of Berlin, 1768), and Waring (Meditationes Algebraicæ, p. 1.), having given general formulæ for the ſum of the powers of the roots of an equation, M. Arbogaſt compares his own with the demonſtration of thoſe, and ſhews how they follow from it. Whoever will take the trouble of examining thoſe ſeveral formulæ will find them not only leſs ſimply expreſſed than that of the preſent author, but leſs evidently and leſs rigorouſly demonſtrated.

The author proceeds to the developement of functions of two or more polynomials, arranged according to the powers of the ſame letter. Suppoſe the ſeries $a + bx + cx^2 +$, &c. and $\alpha + \beta x + \gamma x^2 +$, &c. &c, are to be multiplied together; then the product is $\left.\begin{matrix}\alpha\alpha + \alpha\beta \\ + b\alpha\end{matrix}\right\} x +$, &c. or making $b = D.\,a$, $c = Dc^2.\,a$, &c. $\beta = D.\,\alpha$, $\gamma = Dc^2.\,\alpha$, &c. the coefficients of the terms affected with x, x^2, x^3, &c. will be $(a.\,D.\,\alpha + D.\,a.\,\alpha)$, $(a.\,Dc^2\alpha + D.\,a\,D.\,\alpha + Dc^2.\,a.\,\alpha)$, or $D\,(a.\,\alpha)$, $Dc^2\,(a\alpha)$, and the coefficient of the term affected with x^n will be Dc^n, $(a\alpha)$, which may eaſily be developed.

Hence the form for the product of any number of ſeries, arranged according to the powers of x, may be determined. In four ſeries, for inſtance, of which the firſt terms are a, a', a'', a''', the origin of the derivations will be aa', a'', a'''; and the coefficient of the term affected with x^n, will be $Dc^n\,(aa'\,a''\,a''')$.

In the developement of the product of any two functions whatever of polynomials, for inſtance, of $\phi\,(a + bx +$, &c.) and $\phi\,(\alpha + \beta x +$ &c.), the coefficient of the term affected with x^n will be $Dc^n.\,(\phi\alpha.\,\phi a)$; which, by foregoing methods, may be eaſily developed.—Since $\frac{1}{A}$ and A^{-1} are equivalent expreſſions, by the foregoing methods, fractions ſuch as $\frac{a + bx + cx^2 +, \&c.}{\alpha + \beta x + \gamma x^2 +, \&c.}$, $\frac{1}{(\alpha - x)^r\,(a - x)^s.\,(A - x)^t, \&c.}$ may be converted into ſeries of the form $A + Bx + Cx^2 + Dx^3 +$ &c.

M. Arbogaſt, having applied his method to ſuch fractions as have been already mentioned, ſhews how to deduce the form for the developement of $\phi\,(a + bx + cx^2 +$, &c., $\alpha + \beta x + \gamma x^2 +$, &c.) and aſſigns the form for the coefficient of the term affected with x^n. The law by which theſe forms are regulated is ſimple, and eaſily comprehended.

This author's next object is the developement of functions of one or more polynomials, arranged relatively to the powers and to the products of two or more different letters, into ſeries arranged in the ſame manner. Accordingly he reduces it to the following general problem. "Any function whatever of one or more ſimple, double, or triple polynomials being given, to write immediately the ſeries of the developement of this function; and, moreover, to write immediately the developement of any term whatever of this ſeries, independently of the other terms." He then proceeds to various applications of derivations to recurring ſeries, as well ſimple as double, or triple, &c. of any order whatever.

The authors who have treated of recurring ſeries are De Moivre, in his "Miſcellanea Analytica, and Doctrine of Chances;" Euler, in his "Introductio in Analyſin Infinitorum;" La Grange, in "Melanges de Turin," in Memoirs preſented to the Academy of Paris, and in the Berlin Memoirs; and La Place, in Memoirs preſented to the Academy of Paris, and in the Memoirs of the Academy. To the ſubject of the reſearches of theſe great mathematicians, M. Arbogaſt applies his method of derivations; and he certainly obtains by it, in our opinion, expreſſions very admirable for their ſimplicity, and for the facility with which they can be expanded. In the methods of the authors above-mentioned, in order to find the general term, the denominator of the generating fraction is reſolved into its factors; which is done by finding the roots of the denominator put $= o$; conſequently, if the denominator exceeds an equation of the fourth degree, the general term cannot be found;—but, by the method of derivations, the general term is aſſigned in terms of the coefficients of the denominator of the generating fraction and other quantities; thus, if the generating fractions be $\frac{\alpha + \beta x + \gamma x^2}{a + bx + cx^2 + dx^3}$, the expreſſion for the general term of the reſulting recurring ſeries is $Dc^m\,(\alpha a^{-1})$, or $\alpha\,Dc^m.\,a^{-1} + \beta.\,Dc^{m-1}\,a^{-1} + \gamma.\,Dc^{m-2}.\,a^{-1}$, $(Dc^3.\,\alpha$, $Dc^4.\,\alpha$, &c. being $= o)$.

In the courſe of this article, M. Arbogaſt ſhews how to find at once a part of the general term of a recurring ſeries, proceeding from ſeveral equal factors in the denominator of the generating fraction; thus, let $\frac{P}{Q}$ be the generating fraction, and $N \times (a - x)^m = Q$; in $\frac{P}{N}$ put a for x, and ſuppoſe $\frac{P'}{N'}$ to be what this fraction becomes: then the required part of the general term will be $Dc^{m-1}\left[\frac{P'^{\,-n-1}}{N'a}\right]$, and $D\alpha = -1$ and $n + 1$ the index of the term.

M. Arbogaſt determines the ſine and coſine of any multiple angle in coſines of the ſimple angle E. His demonſtrations for the forms expreſſing the ſines, coſines, &c. are clear and rigorous. He alſo directly diſcuſſes the difficult and complicated ſubject of double and triple recurring ſeries. The next article of his treatiſe contains applications of the calculus of derivations to the general reverſion of ſeries; and this part of his work is executed with ſingular ability. His next object is the uſe of derivations in the differential calculus, which he conſiders as a particular caſe of the calculus of derivations. The 7th article of the author's work conſiſts of three diviſions: the firſt containing the application of the formulæ of derivation, to the developement of the functions of polynomials, containing ſines, coſines, &c.: the ſecond gives the application of the derivative calculus to the product of factors in arithmetical progreſſion; and the third ſhews the application of the ſeparation of the ſcales of operations to the direct and inverſe method of differences. For a further account of this ſubject, we muſt refer to the author's elaborate treatiſe. See, alſo, an analyſis of it in the Monthly Review (New Series), vol. xxxvi. p. 524—532.

CALCULUS *differentialis* is a method of differencing quantities, or of finding an infinitely ſmall quantity, which, being taken infinite times, ſhall be equal to a given quantity: or, it is the arithmetic of the infinitely ſmall differences of variable quantities.

The foundation of this calculus is an infinitely ſmall quantity, or an infiniteſimal, which is a portion of a quantity incomparable to that quantity, or that is leſs than any aſſignable one, and therefore accounted as nothing; the error accruing by omitting it being leſs than any aſſignable one. Hence two quantities only differing by an infiniteſimal, are reputed equal.

Thus, in *Aſtronomy*, the diameter of the earth is an infiniteſimal, in reſpect of the diſtance of the fixed ſtars; and the ſame holds in abſtract quantities. The term infiniteſimal, therefore is merely reſpective, and involves a relation to another quantity; and does not denote any real ens, or being.

Now infiniteſimals are called differentials, or differential quantities, when they are conſidered as the differences of two quantities. Sir Iſaac Newton calls them *moments*; conſidering them as the momentary increments of quantities; v. g. of a line generated by the flux of a point; or of a ſurface by the flux of a line. The differential calculus, therefore, and the doctrine of fluxions, are the ſame thing, under different names; the former given by M. Leibnitz, and the latter by ſir Iſaac Newton; each of whom lay claim to the diſcovery.

There is, indeed, a difference in the manner of expreſſing the quantities reſulting from the different views wherein the two authors conſider the infiniteſimals; the one as moments, the other as differences: Leibnitz, and moſt foreigners, expreſs the differentials of quantities by the ſame letters as variable ones, only prefixing the letter d: thus the differential of x is called dx: and that of y, dy: now dx is a poſitive quantity, if x continually increaſe; negative, if it decreaſe.

The Engliſh, with ſir Iſaac Newton, inſtead of dx, write $\dot{x}$ (with a dot over it); for dy, $\dot{y}$, &c. which foreigners and others object againſt, on account of that confuſion of points, which they imagine ariſes, when differentials are again differenced; on account of the ambiguity of the fluxionary expreſſions, owing to the poſition of the index; becauſe the fluxionary expreſſion cannot be ſo readily extended as the differential notation; and, beſide, the printers are more apt to overlook a point than a letter.

Stable quantities are always expreſſed by the firſt letters of the alphabet $da=o$, $db=o$, $dc=o$; wherefore $d(x+y-a)=dx+dy$, and $d(x-y+a)=dx-dy$. So that the differencing of quantities is eaſily performed, by the addition or ſubtraction of their compounds.

To difference quantities that multiply each other; the rule is, firſt, multiply the differential of one factor into the other factor, the ſum of the two factors is the differential ſought: thus, the quantity being xy, the differential will be $xdy+ydx$, i. e. $d(xy)=xdy+ydx$. Secondly, if there be three quantities mutually multiplying each other, the factum of the two muſt then be multiplied into the differential of the third: thus, ſuppoſe vxy, let $vx=t$, then $vzy=ty$; conſequently $d(vxy)=tdy+ydt$; but $dt=vdx+xdv$. Theſe values, therefore, being ſubſtituted in the antecedent differential, $tdy+ydt$, the reſult is, $d(vxy)=vxdy+vydx+xydv$. Hence it is eaſy to apprehend how to proceed, where the quantities are more than three.

If one variable quantity increaſe, while the other y decreaſes, it is evident $ydx-xdy$ will be the differential of xy.

To difference quantities that mutually divide each other; the rule is, firſt, multiply the differential of the diviſor into the dividend; and, on the contrary, the differential of the dividend into the diviſor; ſubtract the laſt product from the firſt, and divide the remainder by the ſquare of the diviſor; the quotient is the differential of the quantities mutually dividing each other. See FLUXIONS and FUNCTION, under which article will be ſtated La Grange's method of diveſting the principles of the differential calculus of all reference to infinitely ſmall or evaneſcent quantities.

M. La Croix in his "Treatiſe on the Differential and Integral Calculus," conſiders the differential calculus in preciſely the ſame point of view in which M. La Grange regarded it in the Berlin Acts for 1772, and ſubſequently in an expreſs and formal treatiſe on the ſubject. An ingenious anonymous writer has given the ſubſtance and ſpirit of M. La Croix's reaſoning, without adhering cloſely to his notation and method.

Let $u=fx$ be any function of x; then, if for x we ſubſtitute $x+h$, the developement of $f(x+h)$ will be of this form:

$$f(x+h)=fx+f'xh+\frac{f''xh^2}{1\,.\,2}+,\ \&c.$$

the coefficients $f'x$, $f''x$, &c. being derived from the primitive function fx, and independent of h.

$$\text{Hence } f(x+h)-fx=f'xh+\frac{f''xh^2}{1\,.\,2}+,\ \&c.$$

which quantity repreſents the difference between fx and what fx becomes when x is increaſed to $x+h$. Let the firſt term of this difference be called the differential, and be denoted by the expreſſion dfx; hence we have $dfx=f'xh \therefore f'x=\frac{dfx}{h}$

Hence to have $f'x$, divide the difference between two ſucceſſive values of fx by the increment: but, ſince $f'x$ is independent of h, h muſt diſappear by this diviſion, and may be repreſented by any ſymbol at pleaſure. Hence, for the ſake of uniformity in the ſigns, let h be repreſented by $dx \therefore f'x=\frac{dfx}{dx}$. Hence to find dfx, or the differential of fx, writa in fx, $x+dx$, for x, develope $f(x+dx)$ as far as the terms affected with the firſt power of dx, and ſubtract fx.—

$$\begin{array}{c}
\text{Since } f(x+dx)-fx=f'xdx+,\ \&c. \\
f'(x+dx)-f'x=f''xdx+,\ \&c. \\
\&c. \quad = \quad \&c \\
f'xdx=dfx \qquad ,\ f''xdx=df'x \\
\text{therefore } f''x=\dfrac{df'x}{dx}=\dfrac{d\left(\dfrac{dfx}{dx}\right)}{dx}
\end{array}$$

But ſince dx is invariable,

$$\begin{array}{c}
f'(x+dx)\,dx-f'xdx=f''xdx^2 \\
\text{hence } df'xdx=f''xdx^2
\end{array}$$

but $df'xdx=ddfx=d^2fx$ (d^2 not meaning a ſymbol d ſquared, but denoting the ſecond differential of fx to be taken): hence it appears, ſince $f''x=\dfrac{d\left(\dfrac{dfx}{dx}\right)}{dx}$ and $=\frac{dfx}{dx^2}$: that $\dfrac{d\left(\dfrac{dfx}{dx}\right)}{dx}=$

$\frac{d^2fx}{dx^2}$; and thus the derived functions $f^{I}x$, $f^{II}x$, $f^{III}x$, &c. may be repreſented by the quantities $\frac{dfx}{dx}, \frac{d^2fx}{dx^2}, \frac{d^3fx}{dx^3}$, &c. ſo that the developement of $f(x+h)$ takes this form,

$$fx+\frac{dfx}{dx}h+\frac{d^2fx}{1.2.dx^2}h^2+, \&c.$$

the celebrated theorem of Taylor.

CALCULUS, *differentio differential*, is a method of differencing differential quantities. As the ſign of a differential is the letter *d* prefixed to the quantity, ſo that *dx* is the differential of *x*, that of a differential of *dx* is *ddx*, and the differential of *ddx* is *dddx*, &c.; ſimilar to firſt, ſecond, and third, &c. fluxions, $\dot{x}$, $\ddot{x}$, $\dddot{x}$, &c.: thus we have degrees of differentials. The differential of an ordinary quantity is a differential of the firſt order or degree, as *dx*: that of the ſecond degree is *ddx*, &c. The rules for differentials are the ſame with thoſe for fluxions. See FLUXIONS.

CALCULUS *exponentialis*, is a method of differencing exponential quantities; or of finding and ſumming up the differentials or moments of exponential quantities; or at leaſt bringing them to geometrical conſtructions.

By exponential quantity, is here underſtood a power, whoſe exponent is variable; v. g. a^x, x^x, ay^y, x^y, &c. where the exponent *x* does not denote the ſame in all the points of a curve, but in ſome ſtands for 2, in others for 3, in others for 5, &c.

To difference an exponential quantity: there is nothing required but to reduce the exponential qualities to logarithmic ones; which done, the differencing is managed as in logarithmic quantities.—Thus, ſuppoſe the differential of the exponential quality x^y required, let

$$x^y=z$$

Then will $ylx=lz$

$$lxdy+\frac{ydx}{x}=\frac{dz}{z}$$

$$zlxdy+\frac{zydx}{x}=dz$$

That is, $x^y\,l\,xdy+xx^{y-1}dx=dz$. Bernouilli Opera, tom. i. p. 183. See EXPONENTIAL.

CALCULUS *fluxional*. See FLUXIONS.

CALCULUS *integralis*, or *ſummatorius*, is a method of integrating or ſumming up moments, or differential quantities; i. e. from a differential quantity given, to find the quantity from whoſe differencing the given differential reſults.

The integral calculus, therefore, is the inverſe of the differential one: whence the Engliſh, who uſually call the differential method, *fluxions*, give this calculus, which aſcends from the fluxions, to the flowing or variable quantities: or, as foreigners expreſs it, from the differences to the ſums; by the name of the *inverſe method of* FLUXIONS.

Hence the integration is known to be juſtly performed, if the quantity found, according to the rules of the differential calculus, being differenced, produce that propoſed to be ſummed.

Suppoſe $\int$ the ſign of the ſum, or integral quantity; then $\int ydx$ will denote the ſum, or integral of the differential ydx.

To integrate, or ſum up a differential quantity. It is demonſtrated, firſt, that $\int dx=x$: ſecondly, $\int(dx,+dy)=x+y$: thirdly, $\int(xdy+ydx)=xy$: fourthly, $\int(mx^{m-1}dx=x^m$: fifthly, $\int(n:m)\,x^{\frac{n-m}{m}}dx=x^{\frac{n}{m}}$: ſixthly $\int(ydx-xdy):y^2=x:y$. Of theſe, the fourth and fifth caſes are the moſt frequent; wherein the differential quantity is integrated, by adding a variable unity to the exponent, and dividing the ſum by the new exponent multiplied into the differential of the root; v. g. the fourth caſe, by $m-(1+1)\,dx$, i. e. by mdx.

If the differential quantity to be integrated, doth not come under any of theſe formulas, it muſt either be reduced to an integral finite, or an infinite ſeries, each of whoſe terms may be ſummed.

It may be here obſerved, that, as in the analyſis of finites, any quantity may be raiſed to any degree of power; but *vice verſa*, the root cannot be extracted out of any number required: ſo in the analyſis of infinites, any variable or flowing quantity may be differenced; but, *vice verſa*, any differential cannot be integrated. And as, in the analyſis of finites, we are not yet arrived at a method of extracting the roots of all equations; ſo neither has the integral calculus arrived at its perfection: and as in the former, we are obliged to have recourſe to approximation; ſo in the latter we have recourſe to infinite ſeries, where we cannot attain to a perfect integration.

The firſt traces of the integral calculus are to be found in the arithmetic of infinites of Dr. Wallis. The author, by ſumming up ſeries of rational ordinates, was enabled to aſſign the quadratures of the curves to which they belonged. Newton, the inventor of the fluxionary method, advanced far beyond Wallis, and aſſigned the quadrature of curves to which the ordinates were irrational. What this great man performed with regard to the doctrine of fluents, or the integral calculus, is to be found in his treatiſe, "De Quadratura Curvarum." In his "Principia" he concealed his analyſis, and adhered to the manner of the ancients. It does not appear by what method he ſolved the 34th propoſition of the ſecond book of the "Principia" concerning the ſolid of leaſt reſiſtance; whether he effected it by a particular artifice, or whether he really poſſeſſed the calculus of variations, of which Leibnitz and the Bernouillis are now eſteemed the inventors. The mathematicians to whom the integral calculus is chiefly indebted for its improvement, are John Bernouilli, who integrated rational fractions; James Bernouilli, who integrated the fluxionary equation, $\dot{y}+Py\dot{x}=Q\dot{x}$; Cotes, who publiſhed in 1714, "Theoremata tum Logometrica tum Trigonometrica"; Ricati, who integrated the fluxionary equation $\dot{y}+ay^2\dot{x}=Q\dot{x}$; Maclaurin, author of a treatiſe in 2 volumes, 4to.; Simpſon, Fontaine, Clairaut, D'Alembert, and Euler, whoſe reſearches on the integral calculus occur in the volumes of the academies of Paris, Berlin, Turin, and Peterſburgh. The laſt author publiſhed in 1768 his "Inſtitutiones Calculi Integralis," highly enriched with original inventions; and in the ſame year Le Seur and Jacquier publiſhed a work in two volumes, 4to. which ſuperſeded a work of M. Bougainville, publiſhed in 1754. intended as a ſupplement to the "Analyſe des Infinitement Petits of the Marquis de L'Hoſpital. Condorcet, La Grange, La Place, Monge, and Le Gendre, have alſo made conſiderable additions to the integral calculus. M. La Croix has likewiſe publiſhed a comprehenſive and valuable treatiſe on the differential and integral calculus (Traité du Calcul Differentiel, &c. 2 vols. 4to. Paris). In the plan of this work it is propoſed to comprehend and ſyſtematize all that has been written on the differential and integral calculus. It commences with a hiſtory of the ſubject which properly originates with the times of Euclid and Archimedes; becauſe the methods of exhauſtions and limits reſt on the ſame foundation. The queſtions that led to its diſcovery have been diſcuſſed ſince the earlieſt era of geometry. The 12th propoſition of the 12th book of Euclid's Elements is a problem of this kind, and the firſt that has come down to us. Archimedes, by ſimilar methods, advanced to the ſolution of more difficult problems, than that which inveſtigated the relation of circles to one another; ſuch as the relations between the ſurfaces and ſolid contents of the cylinder and ſphere, the quadrature of the parabola, and the proportion of ſpirals. M. La Croix then proceeds in his hiſtory of the differential calculus, as connected with the ſeveral diſcoveries made by Cavalleri, Roberval, Deſcartes, Fermat, Huygens, Gregory de St. Vincent, Paſcal, Wallis, Barrow, Leibnitz, and Newton. See FLUXIONS

M. la Croix's treatiſe conſiſts of two parts: the firſt part gives an account of the differential calculus; and the ſubject of the ſecond part is the integral calculus. This part begins with the integration of functions of one variable quantity; and the author has furniſhed various formulæ for integrating rational and irrational functions, logarithmic and exponential functions, circular functions, &c. and he then applies the integral calculus to the quadrature and rectification of curves, to the quadrature of curve ſurfaces, and to the content of the ſolids comprehended by them. He ſubjoins an expoſition of the methods which Euler employed in his reſearches concerning curves that are quadrable, rectifiable, &c. His next object is the integration of differential equations of two variable quantities; and in reference to this he has collected all that has been written on this intricate ſubject. Accordingly this chapter of his work contains methods for ſeparating the variable quantities in differential equations of the firſt order; for inveſtigating a factor proper to render a differential equation of the firſt order integrable; for integrating differential equations of the firſt order; in which the differential quantities paſs the firſt degree; for obtaining particular ſolutions of differential equations of the firſt order; for reſolving by approximation, differential equations of the firſt order; for conſtructing, geometrically, differential equations of the firſt order; for integrating differential equations of the ſecond order by means of transformations; for inveſtigating a factor proper to render differential equations of the ſecond order integrable; for reſolving, by approximation, differential equations of the ſecond order; and for integrating differential equations of orders ſuperior to the ſecond. The ſubject of the next chapter is the integration of fractions containing two, or a greater number of variable quantities. The fifth and laſt chapter treats of the method of variations.

The calculus of variations originated from certain problems concerning the maxima and minima of quantities having been propoſed by John Bernouilli, to the mathematicians of Europe. Such a problem was that in which it was required to find, of all curves paſſing though two fixed points, and ſituated in the ſame vertical plane, that one down which a body would deſcend from the higheſt to the loweſt point in the leaſt time poſſible. The firſt geometricians, remarking that nothing was obtained by putting the differential of the time, $\sqrt{\frac{dz}{x}} = o$, found that they could obtain a ſolution by making the time a minimum for two ſucceſſive elements of the curve; thus, if x, $x^{\prime}$, $x^{\prime\prime}$ were three vertical abſciſſas, and y, $y^{\prime}$, $y^{\prime\prime}$ the correſponding ordinates, the time would be expreſſed by

$$\frac{\sqrt{(x^{\prime}-x) + (y^{\prime}-y)^2}}{\sqrt{x}} + \frac{\sqrt{(x^{\prime\prime}\ \ x^{\prime})^2 + (y^{\prime\prime}-y^{\prime})^2}}{\sqrt{x}},$$

the differential of which being taken, and put $= o$, gave a reſulting equation $\frac{dy}{\sqrt{x}\sqrt{dx^2+dy^2}} = b$ a conſtant quantity; and conſequently proved the curve to be a cycloid.—Euler, with far greater analytical knowledge than John Bernouilli, next treated theſe problems in a general manner, in his tract intitled, "Methodus inveniendi lineas curvas maximi minimive proprietate gaudentes; ſive ſolutio problematis iſoperimetrici latiſſimo ſenſu accepti." M. La Grange afterward gave greater generality to this calculus, by making variable not only y, dy, d^2y, &c. but x.

The explanation of M. La Croix affords a clear idea of the calculus of variations:

"Suppoſe (ſays he) the variable quantities at firſt connected together by an equation, or by any other dependence, to change by reaſon of the form of the equation, or of the relation that reſults from the dependence eſtabliſhed between them ceaſing to be the ſame; this circumſtance cannot be expreſſed in a more general manner, than by regarding the increments of x and y, as abſolutely independent of each other; ſince, in effect, this hypotheſis, not deſignating any particular relation between x and y, comprehends all. It follows thence, that the calculus of variations can only be employed for expreſſions, to which the differential calculus has already been applied; and it differs from the laſt only by the independence which it ſuppoſes between the variable quantities, which before were conſidered as connected by conſtant relations. The following example will illuſtrate this notion. The expreſſion $\frac{ydx}{dy}$, which belongs to the ſubtangent of a curve, repreſents a determinate function of x, when y is conſidered as a function whoſe compoſition in terms of x is known: and if this laſt changes, the firſt changes alſo. There will be, perhaps, ſome difficulty in conceiving how we can ſubmit to calculation the variability of a function which is only the abſtract dependence in which ſeveral quantities are with regard to each other: but this difficulty is removed, by conſidering that the connection between the quantities y and x changes, if the firſt be made to vary independently of the ſecond. Thus, in the example before us, if we ſuppoſe x to remain the ſame, and y and $\frac{dy}{dx}$ to change, the relation between x and y muſt neceſſarily have changed alſo, ſince theſe quantities are the immediate conſequences of that relation: $\frac{dy}{dx}$, in the form $\frac{ydx}{dy}$, may alone be made to vary, ſince it depends only on one value of y: but, if an expreſſion affected by the ſign $\int$ be conſidered, y and $\frac{dy}{dx}$ muſt be made to vary at the ſame time; for it follows from the theory for the formation of integrals, that the value of a like function depends on the conſecutive values of y which are deduced from thoſe of $\frac{dy}{dx}$.

"It is evident that, to take under this point of view the differential of any expreſſion whatever, it is ſufficient to make y, dy, d^2y, &c. vary without altering x: but, in treating this latter quantity, as variable as the firſt, we arrive at reſults more general and ſymmetrical than what are otherwiſe obtained, and which lead to very intereſting remarks on the nature of the differential forms. For theſe reaſons, we ſhall adopt in this chapter the method of making x, dy, dy^2 vary. That the ſymbols of this new ſpecies of *differentiation*, in which x and y are conſidered as independent, may not be confounded with the ſymbols of the firſt, in which one of the variable quantities is regarded as a function of the other, we ſhall employ, after the manner of La Grange, the characteriſtic δ; and we ſhall ſuppoſe, with him, that, when y changes only by virtue of the change of x which becomes $x+dx$, its differential is dy: but that, when the relation of y and x varies, theſe two quantities become reſpectively $x+\delta x$, $y+\delta y$; and we note by the name of variations, the increments δx and δy.

"Hence it follows that, as $du=\frac{du}{dx}dx+\frac{du}{dy}\,dy$,

u being a function of x and y,

ſo, $\delta u=\frac{\delta u}{\delta x}\delta x+\frac{\delta u}{\delta y}\delta y$.

"In applying this to the example $\frac{ydx}{dy}$, we muſt regard $\frac{dx}{dy}$ as a function of x and y; whence it reſults that

$$\delta\frac{ydx}{dy}=\frac{dx\delta y}{dy}+y\delta\left(\frac{dx}{dy}\right)$$

$$\text{and } \delta\left(\frac{dx}{dy}\right)=\frac{dy\delta dx-dx\delta dy}{dy^2}=\frac{dyd\delta x-dxd\delta y}{dy^2}$$

for $\delta dx=d\delta x$. $\delta dy=d\delta y$.—."

M. La Croix then proves $\delta dx=d\delta x$, &c. After the methods for finding the variations of any function whatever, is given the applications of the calculus to the problems of maxima and minima.

Calculus *literalis*, or *literal* Calculus, is the ſame with ſpecious arithmetic, or algebra, ſo called, from its uſing the letters of the alphabet: in contradiſtinction to numeral arithmetic, which uſes figures.

In the literal calculus, given quantities are expreſſed by the firſt letters, a, b, c, d; and quantities ſought by the laſt z, y, x, &c. Equal quantities are denoted by the ſame letters. See Algebra.

Calculus, in *Medicine*, the diſeaſe of the ſtone in the bladder or kidneys. The calculus in the bladder is called *lithiaſis*; and in the kidneys, *nephritis*. See Stone.

Calculus, *Biliary*. Small, hard, roundiſh, concrete ſubſtances are often found in the gall bladder, or in the ducts leading from the liver and gall-bladder to the inteſtine, which occaſion in their paſſage moſt acute pain to man, and probably other animals, and have attracted ſome attention from chemiſts.

Biliary calculi (or *gall-ſtones*, as they are alſo termed) vary both in external appearance, and in chemical properties. The colour is generally green or yellowiſh brown, ſometimes, though rarely, white; in ſhape they are moſtly oblong, often tuberculated. When cut through, they moſt frequently conſiſt of a radiated ſemi-cryſtalline maſs, internally often reſembling ſpermaceti, coated with ſeveral concentric laminæ. The radiated part is moſtly white and taſteleſs; the laminated is ſometimes bitter.

Gall-ſtones are diſtinguiſhed for their lightneſs and inflammability, few of them being ſo heavy as to ſink in water; and when put to a lighted candle, moſt of them melt like wax, and burn with a very bright flame, and very little ammoniacal ſmell. From the infinite minute varieties in gall-ſtones, no natural arrangement is indicated, but the moſt important differences, ſhewn by chemical analyſis, reſt upon the proportion of the radiated cryſtallized, central part, and the general lightneſs and inflammability.

The radiated gall-ſtones are largely ſoluble in oil of turpentine, and in all the eſſential oils by heat. Alcohol when cold has but little action, but when boiling it diſſolves almoſt all the inflammable part of the calculus, leaving an earthy reſidue behind. On cooling, this ſolution depoſits very copious ſpecular cryſtals, ſtrongly reſembling thoſe of ſpermaceti treated in this way, and this ſingular ſubſtance forms by far the moſt curious part of theſe morbid concretions. Pouletier and Fourcroy have both attended minutely to this matter. The former diſcovered ſimilar cryſtalline concretions in a piece of liver long hung up in a dry air.

When the hot alcoholic ſolution of this concrete is dropped into a large quantity of water, a white flacculent precipitate is formed, which when dried is found to be of a reſinous nature. The ſupernatant liquor by ſaturation with muriatic acid and evaporation gives muriat of ſoda, by which it is evident that the ſoda of the bile remains in union with its reſin during its converſion into biliary calculus; but the chemical nature of this converſion is very obſcure.

Ether diſſolves the ſpermaceti-like concrete as well as oil of turpentine, and depoſits the greater part on cooling. Hot nitrid acid is decompoſed on it, and nitrous gas is given out, and when cool, a white oil is found concreted on the ſurface of the acid, now no longer of a cryſtalline texture, but altered in its properties, being brittle and friable like a reſin, and when re-diſſolved in alcohol it has loſt its power of cryſtallizing by cooling. It is ſtill, however, inſoluble in water. Ether diſſolves this altered concrete as it did when in its natural ſtate, but water now ſeparates it in the form of drops of oil. Saunders on the Bile. Fourcroy. Boſtock in Phil. Journ. vol. vi.

Calculus *Minervæ*, among the *Ancient Lawyers*, denoted the deciſion of a cauſe, wherein the judges were equally divided. The expreſſion is taken from the hiſtory of Oreſtes repreſented by Æſchylus and Euripides; at whoſe trial, before the Areopagites for the murder of his mother, the votes being equally divided for and againſt him, Minerva interpoſed, and gave the caſting vote, or calculus, in his behalf.

M. Cramer, profeſſor at Marpurg, has a diſcourſe expreſs, "De Calculo Minervæ," wherein he maintains, that all the effect an entire equality of voices can have, is to leave the cauſe *in ſtatu quo*.

Calculus *Tiburtinus*, a ſort of figured ſtone, formed in great plenty about the cataracts of the Anio, and other rivers in Italy; of a white colour, and in ſhape oblong, round, or echinated. They are a ſpecies of the *ſtiriæ lapideæ*, and generated like them; and ſo like ſugar-plums in the whole, that it is a common jeſt at Rome to deceive the unexperienced by ſerving them up at deſerts.

Calculus, *urinary*. See Urinary *calculi*.

CALCUTTA, in *Geography*, a city of Hindooſtan, and capital of Bengal, and of all the Britiſh poſſeſſions in India, is ſituated on the river Hoogly, the weſtern arm of the Ganges, at the diſtance of about 100 miles from the ſea; and the river is navigable up to the town, for the largeſt ſhips that viſit India. Its citadel is placed in N. lat. 22° 33′. E. long. 88° 27′ 45″. It is comparatively a modern city, having been built towards the cloſe of the 17th century on the ſite of the village called Govindpour. The Engliſh factory obtained leave to remove hither from Hoogly in the year 1689 (See Bengal), when Mr. Channock was agent in Bengal; and who fixed upon this ſpot for the Britiſh emporium, though from ſeveral circumſtances it was at that time the moſt unhealthy he could have choſen. For 3 miles to the north-eaſt there was a ſalt-water lake, that overflowed in the months of September and October; and in the two following months, when thoſe floods withdrew, prodigious quantities of fiſh were left dry, the putrefaction of which was ſuppoſed to affect the air; and this, together with the fetid putrid exhalations from the ooze and ſlime, conveyed by the north-eaſt wind to Fort William, occaſioned a yearly mortality.

lity. During the rapid increaſe of this town, diſeaſes were fatal to thouſands, and particularly, according to the teſtimony of Dr. Lind, among ſuch as had lately arrived from Europe. Hamilton mentions an inſtance, from his own knowledge, of 400 burials in ſix months, at a period when all the Engliſh reſident here did not exceed 1200. Beſides, when this ſpot was choſen, every man was allowed to build as beſt ſuited his convenience and taſte, without regard to the diſpoſition of the whole; and, therefore, the different houſes bore no reſemblance to one another either in their poſition or architecture. From this ſmall and unpromiſing beginning, Calcutta is now become a large, populous, and in many reſpects, an elegant city. The quarter inhabited by the Engliſh is compoſed entirely of brick buildings, many of which appear more like palaces than private houſes; and though they add much to the beauty of the place, they would have a much better effect if the ſtreets were laid out with greater ſymmetry and order: but the reſt of the city, and, indeed, much the greater part of it, conſiſts of houſes like thoſe of the other Indian cities; all of which are conſtructed on the ſame plan, with very narrow, confined, and crooked ſtreets, in which are interſperſed an incredible number of reſervoirs and ponds, and a great many gardens. Some few ſtreets are paved with brick. The houſes are variouſly built; ſome with brick, others with mud, and a ſtill greater proportion with bamboos and mats; and theſe different kinds of edifices, being intermixed with one another, form a motley appearance. Thoſe of the latter kind are invariably of one ſtory, and covered with thatch. The brick houſes ſeldom exceed two floors, and have flat terraced roofs. The two former claſſes far outnumber the laſt, which are often ſo thinly ſcattered, that fires, which frequently happen, do not ſometimes meet with the obſtruction of a ſingle brick houſe through a whole ſtreet. The ſtructure of the European houſes ſerves to ſecure them from fire; as only a ſmall portion of wood enters into the materials, for the partition-walls, as well as the flat roofs, are chiefly conſtructed of brick and mortar, which laſt article, under the denomination of "Chunam," the natives have brought to great perfection. The buildings of the place extend full 3 miles along the river, and about half as much in breadth from it. Within the laſt 30 or 40 years, Calcutta is wonderfully improved, both in appearance and in the ſalubrity of its air; for by draining the ſtreets and filling up the ponds, they have removed a vaſt ſurface of ſtagnant water, the exhalations of which were particularly injurious. The local ſituation of Calcutta, as we have already obſerved, is not fortunate; for it has ſome extenſive muddy lakes, and a vaſt foreſt cloſe to it. More ſtill remains to be done before Calcutta can merit the character of a healthy town. In the middle of the city a large open place has been left, in which there is a ſpacious tank or reſervoir, covering upwards of 25 acres of ground. It was dug by order of the government, to provide the inhabitants of Calcutta with water; as in the dry ſeaſon the water of the Ganges becomes brackiſh by the influx of the tide, while that in the tank is very ſweet and pleaſant. The number of ſprings which it contains preſerves the water always nearly at the ſame level. It is railed round, nor is any perſon ſuffered to waſh in it; but all are at liberty to take as much water from it as they like. Near this tank is a handſome obeliſk, erected by Mr. Holwell, one of the few ſurvivors in the tragic ſcene of the black hole, of which we ſhall ſubjoin an account; it is about 50 feet high, inſcribed with the names of the perſons who died on this execrable occaſion, and whoſe bodies were promiſcuouſly thrown, the next morning, into the ditch of the fort. A little farther is the court-houſe, over which are two handſome aſſembly-rooms. Cloſe to the court-houſe is a theatre, where plays are ſometimes performed. Beyond this is an Armenian church, which is a large and noble building, with a handſome ſteeple. There is alſo an Engliſh church of modern conſtruction. The citadel, called "Fort William," is ſituated about a quarter of an hour's walk from the city, by the ſide of the Ganges, in an extenſive plain. This citadel is ſuperior in every point, as it regards ſtrength and correctneſs of deſign, to any fortreſs in India; but it is formed on too extenſive a ſcale to anſwer the uſeful purpoſe intended, that of holding a poſt in caſe of extremity; ſince the number of troops required properly to garriſon it, could keep the field. It was begun in the year 1757, immediately after the victory at Plaſſey, which inſured to the Britiſh an unlimited influence in Bengal; and it was the intention of lord Clive to render it as permanent as poſſible, by providing for all times a tenable poſt. However, he had no foreſight of the vaſt expence attending it, which may perhaps have been equal to two millions ſterling. It is a regular pentagon, with ſeveral outworks. The ramparts are built of brick, half-way up, finiſhed with clay, and faced with gazons. Both the body of the fortreſs and the out-works are ſurrounded by a wet ditch, which has a ſmall cunette, 6 or 7 feet deep, in the middle. The water from the Ganges may be let into the moat, to the height of 8 feet, by means of flood-gates, of which there are two to each out-work, conſtructed in ſuch a manner, that if an enemy be maſter of one, he cannot prevent both the main ditch, and thoſe of the other out-works, from retaining their water. If all the works were mounted with cannon, there would be room for 600 pieces of artillery. Within the fort are bomb-proof barracks for 10,000 men. All the works are guarded by mines and countermines. No ſhip can paſs up or down the Ganges without being expoſed to the fire of this fort; nor can any enemy approach by land without being diſcerned at the diſtance of 3 or 4 leagues. The population of Calcutta is ſuppoſed to amount at preſent to more than half a million of inhabitants; and their different aſpect and manners preſent a very pictureſque and intereſting ſcene. The black Hindoo, the olive-coloured Moor or Mahometan, contraſt with the fair and florid countenances of the Engliſh; and the charms of the European damſel receive a foil from the dark Hindoo beauties. "The mixture of European and Aſiatic manners," ſays a traveller in India, "which may be obſerved in Calcutta, is curious; coaches, phaetons, ſingle-horſe chaiſes, with the palankeens and hackeries of the natives, the paſſing ceremonies of the Hindoos, the different appearances of the Fakirs, form a ſight more novel and extraordinary than any city in the world can preſent to a ſtranger." "To the luxuries of the Aſiatic (ſays Mr. Pinkerton) are added the elegance and ſcience of the Engliſh life. Even the newſpapers are drawn up with care, and printed with elegance;" and the Aſiatic Society, inſtituted by the late admirable ſir William Jones (in January 1784), may perhaps rival the Academy of Inſcriptions at Paris, if the papers of the latter were adopted as a model. "The Aſiatic Reſearches, which are the productions of this ſociety, form a noble monument of Britiſh ſcience in a diſtant country."

Calcutta is eminently diſtinguiſhed as the emporium of Bengal, and the reſidence of the govenor-general of India. It is alſo the ſeat of juſtice, under four judges, who diſpenſe judgment according to the laws of England. Its flouriſhing ſtate may be aſcribed, partly, among other cauſes and circumſtances that have contributed to it, to the unlimited toleration which it affords to all forms of religion; the Pagans being ſuffered to carry their idols in proceſſion, the Mahometans not being diſcountenanced, and the Roman Catholics being allowed a church.

The police of the city is chiefly committed to a ſuperintendant of police, and ſeveral inferior juſtices of the peace, with certain ſtated ſalaries. Before theſe all petty delinquencies are tried, and by them they are puniſhed. "Tannahs," or guard-houſes, are erected in the different diſtricts of the town; and the peace is maintained by a few companies of native ſoldiers who patrole the ſtreets, and prevent diſturbance from quarrels, robbery, or theft. Offences of a higher nature, committed by either Europeans or natives, are cognizable by the ſupreme court of judicature, which, about 25 years ago, was ſubſtituted in place of the mayor's court, with ſuperior authority, and more extenſive juriſdiction. The powers of this court extend not only to the company's territories in this part of India, but alſo to every caſe civil or criminal, that may occur between the Coromandel and Malacca coaſts. Its juriſdiction, however, does not extend to the higher ſtations; nevertheleſs in theſe all the European ſettlers enter into an engagement to be amenable to its authority.

The commerce of Calcutta is very conſiderable in ſalt, ſugar, opium, yielded by the poppy particularly cultivated in the province of Bahar, ſilks, muſlins, &c. Muſk, borax, and other commodities, uſed to be imported from Thibet, in exchange for European cloths, and hardware; but this trade is probably interrupted ſince Thibet became ſubject to the jealous Chineſe. On the Ganges are tranſported to Aſam cargoes of ſalt, in exchange for gold, ſilver, ivory, muſk, and a particular kind of ſilky cotton. The cowry ſhells, uſed as a ſmall coin, are imported from the Maldives in exchange for rice. The fine muſlins are chiefly fabricated in the rainy ſeaſon, from May to September, and with callicoes form a great part of the exports to Europe.

The merchants and agents of this capital are by no means confined to tranſactions with their conſtituents employed in different branches of the ſervice: they engage largely in foreign commerce to every port of note either in Aſia or in Europe. In ſome houſes, the extent of their dealings has been eſtimated, probably by an account ſomewhat exaggerated, at two crores of rupees annually, or above two millions ſterling. Nevertheleſs, no mercantile houſe has accumulated ſums equal to the fortunes acquired by many individuals in the ſervice. The charges of clerks, freight, inſurances, and other circumſtances, particularly houſe-rent, muſt deeply affect the profits ariſing from every concern not uncommonly lucrative. The extent of the private trade of Calcutta cannot be eſtimated juſtly, either from the number or the burden of the ſhips belonging to that port. In a period not very remote, there were only 60 that properly belonged to the Britiſh merchants here, and their burden was about 27,000 tons. But their concern in foreign ſhips is very conſiderable. The Dutch, Daniſh, and French ſettlements on the river afford opportunities for indirect trade to any extent; nor are they negligent in availing themſelves of this advantage. The company affords conſiderable employment to the country-built ſhips, independently of the merchants. It poſſeſſes a marine eſtabliſhment, under the direction of a board inſtituted for that purpoſe. During war, cruizers are frequently employed; as well as tranſports, and ſtore-ſhips, for its own troops. Theſe tranſactions fall under the direction of the marine board, conſiſting of five members, and a number of ſubordinate officers and clerks. It alſo ſuperintends the pilot-ſervice, which is an important part of the marine eſtabliſhment in a river of ſuch dangerous navigation as the Hoogly, in which ſand banks formed by the ſand and mud waſhed down this branch of the Ganges during the rains, are continually fluctuating in their ſize and poſition. Conſtant attention is, therefore, neceſſary to place the different buoys ſo that they ſhall not miſlead the mariner. Freight in this climate is high; and yet commerce appears to be as adventurous as in any part of the world. The freight of boats in the inland trade upon the river is far from being low; and this is owing to the time neceſſary for performing a moderate voyage on that winding ſtream. The larger boats upon the Ganges carry from 300 to 600 mauns; and their hire per month amounts to 20, 30, or even 60 rupees, according to their different ſizes. Budgerows (ſee BUDGE-ROW), for the accommodation of gentlemen and their families, are to be had of all ſizes from 8 to 24 oars; the rate of hire for the firſt is 60 rupees per month; for the largeſt, 230. The pinnace is another kind of travelling boat, ſtill more expenſive than the budge-row. It has ſuperior accommodation, and from its reſembling European craft in its ſtructure, both in its hull and rigging, it is better fitted for encountering a gale in the great river. Beſides the high rate of freight charged in the inland, and maritime trade, the merchants in Calcutta pay a conſiderable commiſſion on the purchaſe of goods by their agents; and this on moſt articles is 5 per cent. The maſters of the country-built ſhips, or the ſupercargoes, are the immediate agents by whom the trade of this part of the world is conducted; and they are an enterpriſing body of men, and in general better informed than thoſe of the ſame profeſſion in Europe. With the common Malays, and a mixture of Chineſe, and Bengaleſe ſeamen, who never become very expert and intelligent in their profeſſion, the country ſhipmaſters perform voyages in thoſe dangerous ſeas with aſtoniſhing ſecurity. Theſe veſſels are termed "Donies"; and their enterpriſes at ſea are chiefly to be aſcribed to the example of Europeans; for, before their appearance, the Hindoos were hardly known as navigators. In Calcutta there are ſix different aſſurance-companies; which cover the property of individuals from the riſks of the ſea, perhaps at as low a rate of inſurance as it can be done in Europe. Of the ſhips already mentioned belonging to Calcutta, there is not a ſingle one commanded by a native. The internal navigation is, indeed, conducted by the natives. See GANGES.

The Armenians are the moſt reſpectable, and perhaps the moſt numerous body of foreign merchants in this capital. They carry on an extenſive trade from China, and moſt of the ſea ports to the eaſtward, and alſo to the weſt, as far as the Perſian gulf. Their information from all the different quarters is deemed the moſt accurate and minute of any body of men in their profeſſion. They are attentive, regular, and diligent in buſineſs; their houſes are of old ſtanding; and many of them are poſſeſſed of large capitals. As members of ſociety, they are peaceable and loyal, polite and inoffenſive. Some few prieſts of their perſuaſion are maintained by them, not only in affluence, but in ſome degree of ſplendour. In their fondneſs for ſhew and elegance, the Armenians approach nearer to the Engliſh than any merchants at Calcutta; but they are more guarded in their expenditure.

The Mogul merchants are the next body of ſtrangers, who have indeed long reſided in this country; they have 13 different mercantile houſes of conſiderable note, beſides many other counting houſes of inferior importance. Some individuals among the Moguls are very wealthy, and are inferior in riches only to ſome of the native rajahs, banians, and ſhroffs: of theſe ſome are more opulent than the firſt noblemen in England. A million ſterling, or even half of that ſum, which ſeveral of them are ſaid to poſſeſs, yields a revenue of three times the amount of any capital in Britain, from the exorbitant rate of intereſt at which theſe people lend their money. In the dreſs and table of the Hindoo, little is devoted to the purpoſes either of elegance or magnificence.

nificence. The greateſt drains upon his income are his pious contributions, and the expences of his Zenana. The notches, marriages, and religious feſtivals furniſh occaſions of profuſion; but theſe ceremonies are under the direction of the Bramins; and, according to the ideas which theſe ſpiritual guides have formed of his wealth, muſt be the otto, roſe-water, and other perfumes, and ſweetmeats ſerved in veſſels of gold, under a large canopy illuminated with beautiful luſtres, to many hundreds of gueſts of all ranks and denominations. On ſuch occaſions the Hindoo is gratified by the appearence of a large company; and deems himſelf particularly honoured by the attendance of Europeans. Although the notches are intended to do honour to ſome deity, who is ſuppoſed to preſide over the feſtival; yet they ſeem of all inſtitutions leaſt calculated to excite religious ideas. Part of the ceremony conſiſts in liſtening to the muſic of the ſinging girls, who drawl out their monotonous ditties with a non-chalance and dulneſs which can only be equalled by the ſluggiſh dance, and inanimate geſtures with which they are accompanied. Of all entertainments an Hindoſtanee notch is probably the moſt inſipid; and they are ſometimes accompanied with pantomimical performances of no delicate nature.

The number of Greek merchants in Calcutta is not conſiderable; they, however, maintain one clergyman, who performs religious worſhip according to the rites of that church. Portugueſe houſes of agency are, with reſpect to number, next to thoſe of the Engliſh. A very conſiderable number of the deſcendants of that nation by native women, reſide at Calcutta. No people in Europe ſeem to have aſſimilated themſelves ſo cloſely to the manners of the country. Many of this claſs are held in low eſtimation. With a complexion darker than that of the Hindoos, with habits ſo ſimilar, and with full poſſeſſion of the language, it is ſtrange that none of theſe have been able to make converts from the Heathen to the Roman Catholic faith. This circumſtance evinces the compleat dominion, which the Bramin ſuperſtition poſſeſſes over the minds of the common people; for no denomination of Chriſtians can be more devoted to the work of converſion than the church of Rome.

The Britiſh merchants at Calcutta are a numerous and reſpectable body of men. Several of them have acquired large fortunes, and in the acquiſition of theſe fortunes they have diſplayed thoſe mercantile talents, and that enterpriſing ſpirit which diſtinguiſh their character in every part of the world. At Calcutta the peculiar habits of their profeſſion have in no degree encroached on the liberality of their minds or the elegance of their equipage and tables. They here diſplay an expence and ſplendour in their mode of living ſeldom aſpired after by the ſame order of men in any part of the world; and it redounds much to their honour, that their acts of charity and munificence to indigent perſons have perhaps, never been equalled by any ſimilar number of men of any rank whatever. Few of theſe gentlemen are engaged in the ſervice. The ſervice of the company attaches to itſelf certain ideas of rank and conſequence, which often produce ludicrous effects upon the intercourſe of ſociety. All perſons in civil and military departments affect a degree of ſuperiority over ſuch as are not in the ſervice, which is frequently ill ſupported by their talents, birth, or character.

Among the various claſſes of the mercantile part of the community, we have made no mention of the Jews. Few of that nation ever ſettle in India, and Calcutta is perhaps the only opulent town in which they are not to be found. The native Banians, Sarkars, and Writers, carry on the greateſt part of the retail trade of Calcutta. They go about hawking commodities from morning to night, or ſearching after cheap purchaſes. To this claſs of the Hindoos appertain that low cunning, ſtratagem, and deceit, which characteriſe the money-tranſactions of perſons of narrow intellects. With all their propenſity to cheat, the native ſhop-keepers generally ſell their goods on lower terms than thoſe on which they are to be obtained in the European ware-rooms; but they are commonly neither of the firſt faſhion nor beſt quality. Their houſe-rent is another cauſe of their under-ſelling the Europeans. The ſhops of the natives, though better than their houſes, are mean and diſagreeable; and from their ſituation in the common bazars, are much cheaper than the larger and more ſplendid rooms in which the Britiſh merchants expoſe their wares. Houſe-rent and ſervants' wages are the moſt expenſive parts of the charges of houſekeeping in Calcutta. The common articles of proviſion are much cheaper than in Europe; but houſe-rent till lately, has been a very exorbitant charge. Only a few years ago, a houſe ſufficient to accommodate a genteel family could not be procured under 600 or 800 pounds a-year; and many even let at a larger ſum. The number of ſervants neceſſary in a private family, to perſons reſident in this country, exceeds all belief. This in an evil which admits of no remedy as long as the ſuperſtition of the natives ſhall deter them from performing ſervice beyond one ſpecific kind of work. The wages vary according to the different ſtations they occupy, from 4 rupees per month to 20. The ſalary of ſervants, added to the houſe-rent, and the incidental charges of a family, will enhance its expenditure to 3, 4, and 5 thouſand rupees a-year, according to its number.

The maintenance and education of the children belonging to Europeans in India have, on account of their increaſing number, become objects of great importance. With a view to theſe objects, ſeveral perſons have done honour to themſelves and to their country, by eſtabliſhing ſchools for the relief of the orphan children of the military ſervants of the company. Two inſtitutions have been formed for this purpoſe: one for the children of officers, and the other for thoſe of private ſoldiers. Each is provided with teachers of both ſexes, qualified to inſtruct the children in ſuch branches of knowledge and induſtry as ſeem to be adapted to their rank and proſpects in ſociety. The fund for the ſupport of theſe inſtitutions is ſupplied by a fixed contribution raiſed from the military, or by the donations of the benevolent. Beſides the two inſtitutions already mentioned, there are ſeven or eight others for the education of boys; and nearly an equal number for girls. Beſides theſe foundations, there are ſome others of inferior note, equally laudable, eſtabliſhed by the munificence of the inhabitants of Calcutta. A free ſchool, which provides for the education of nearly 200 children under the management of the veſtry, is, in part, ſupported by voluntary contributions only. Two lacks of rupees were originally devoted to the education of the children of the poor. The intereſt of that ſum continues to be applied for that purpoſe. Another ſchool, equally numerous, has been added to this upon a fund raiſed merely by caſual benefactions. An oratorio has lately been performed annually to aid its funds, which promiſes a conſiderable ſupply of revenue. To theſe inſtitutions ſo creditable to the humanity and benevolence of the inhabitants of Calcutta, the native hoſpital muſt be added. This inſtitution is alſo ſupported by voluntary contribution, and was formed for the relief of natives, who, from accident or diſeaſe, might need medical aid. A very expenſive eſtabliſhment for the education of the junior ſervants of the company has lately been inſtituted; but as it is for buſineſs, and not for education, that theſe gentlemen are ſent to

India, the utility of this meaſure has been queſtioned, and the expence of it muſt have been enormous. Inſtruction, in the native dialect, is in general, the only requiſite to qualify them for the exerciſe of their duty, and this they have hitherto received from "Moonſhees" at the leiſure hours that are not employed in their different vocations. Accordingly the court of directors have aboliſhed this college; and they are at this time forming an eſtabliſhment at home which is likely, under proper conduct, to anſwer the purpoſe at a much leſs expence.

Notwithſtanding the perfection to which the medical art has arrived by long experience, and its happy effect in preſerving the lives of many Europeans; and the knowledge that has been acquired with reſpect to the fevers and the whole train of bilious complaints that are incidental to the country, and with reſpect to the moſt efficacious mode of treating them; the climate of India proves a ſevere trial to every European conſtitution. Many fall ſacrifices to its firſt attacks; many more linger on in a ſtate of increaſing debility, and painful diſeaſe; and others, who for years continue to combat its influence, apprehending that the conflict muſt terminate fatally, are glad to retreat to Europe, there to eke out, or to huſband the remains of life. A ſallow and livid complexion is ſo univerſal in Bengal, that when you behold a face of the roſeate hue, you may venture to pronounce that its owner is newly arrived. Even in the ordinary health of perſons not ſuppoſed to be materially injured by the climate, they are capable of little exertion or fatigue; and in the hot ſeaſon of hardly any at all. It is not uncommon to find, at that period, all the officers of a battalion, except perhaps one or two, incapable of doing duty; and this without any extraordinary or alarming complaint. The fair ſex are almoſt equally liable with the men to ſuffer by the climate. Their regularity is often more uniform, and their expoſure to the weather leſs frequent; yet there is hardly a ſingle female complexion in Bengal that retains the bloom of health. Formerly female adventurers in India were few; but highly ſucceſsful. Emboldened by their ſucceſs, and encouraged by their example, ſuch numbers have embarked in this ſpeculation, as threaten to defeat its purpoſe. The irregularities of our government, which formerly afforded an opportunity to ſome of rapidly accumulating wealth, and enabled them to marry, are now in a great meaſure done away. Few comparatively find themſelves in circumſtances that invite to matrimonial engagements; and on this account a number of unfortunate females are ſeen wandering for years in a ſingle and unconnected ſtate. Some are annually found to abandon the forlorn hope, and return to Europe, after the loſs of beauty, too frequently their only property.

Having mentioned the "black hole" at Calcutta, which is become proverbial among Engliſhmen for a place of inſufferable torment, we ſhall now recite ſome further particulars concerning the tragic event to which we have referred. When Surajah Dowlah in 1756 reduced Calcutta, the Engliſh priſoners to the number of 146, of whom Mr. Holwell was one, were confined in the black hole priſon. It was about eight o'clock when theſe 146 unhappy perſons, exhauſted by continual action and fatigue, were thus crammed together into a dungeon about eighteen feet ſquare, in a cloſe ſultry night in Bengal, ſhut up to the eaſt and ſouth, the only quarters from whence air could reach them, by dead walls, and by a wall and door to the north; open only to the weſt by two windows, ſtrongly barred with iron, from which they could receive ſcarce any circulation of freſh air.

They had been but few minutes confined before every one fell into a perſpiration ſo profuſe, that no idea can be formed of it. This brought on a raging thirſt, which increaſed in proportion as the body was drained of its moiſture. Various expedients were thought of to give more room and air. Every man was ſtripped, and every hat put in motion: they ſeveral times ſat down on their hams; but at each time ſeveral of the poor creatures fell, and were inſtantly ſuffocated or trod to death.

Before nine o'clook every man's thirſt grew intolerable, and reſpiration difficult. Efforts were again made to force the door: but ſtill in vain. Many inſults were uſed to the guards, to provoke them to fire in upon the priſoners, who grew outrageous, and many delirious. "Water, water," became the general cry. Some water was brought; but theſe ſupplies, like ſprinkling water on fire, only ſerved to raiſe and feed the flames. The confuſion became general, and horrid from the cries and ravings for water; and ſome were trampled to death. This ſcene of miſery proved entertainment to the brutal wretches without, who ſupplied them with water, that they might have the ſatiſfaction of ſeeing them fight for it, as they phraſed it; and held up lights to the bars, that they might loſe no part of the inhuman diverſion.

Before eleven o'clock, moſt of the gentlemen were dead, and one third of the whole. Thirſt grew intolerable: but Mr. Holwell kept his mouth moiſt by ſucking the perſpiration out of his ſhirt-ſleeves, and catching the drops as they fell, like heavy rain, from his head and face. By half an hour after eleven, moſt of the living were in an outrageous delirium. They found that water heightened their uneaſineſſes; and "Air, air" was the general cry. Every inſult that could be deviſed againſt the guard, all the opprobrious names that the viceroy and his officers could be loaded with, were repeated, to provoke the guard to fire upon them. Every man had eager hopes of meeting the firſt ſhot. Then a general prayer to heaven, to haſten the approach of the flames to the right and left of them, and put a period to their miſery. Some expired on others; while a ſteam aroſe as well from the living as the dead, which was very offenſive.

About two in the mornining, they crowded ſo much to the windows, that many died ſtanding, unable to fall by the throng and equal preſſure round. When the day broke, the ſtench ariſing from the dead bodies was inſufferable. At that juncture, the Soubah, who had received an account of the havoc death had made among them, ſent one of his officers to inquire if the chief ſurvived. Mr. Holwell was ſhewn to him, and near ſix, an order came for their releaſe.

Thus they had remained in this infernal priſon from eight at night until ſix in the morning, when the poor remains of 146 ſouls, being only 23, came out alive; but moſt of them in a high putrid fever. The dead bodies were dragged out of the hole by the ſoldiers, and thrown promiſcuouſly into the ditch of an unfiniſhed ravelin, which was afterwards filled with earth. See Bengal. Rennell's Memoirs, Pinkerton's Geog. vol. ii. Tennant's Indian Recreations, vol. i.

CALDA, or Caldum, in the *Ancient Diet*, denotes hot water, uſed much among the Romans, anciently, as a drink, partly for pleaſure, and partly for health.

The word is formed from *calidus, hot; aqua* being underſtood; *calda*, q. d. *calida aqua*.

Lipſius, Caſtalio, Mercurialis, Baccius, and Freinſhemius, have treated largely *de potu caldæ*, or *caldi*. Act. Erud. Lipſ.

CALDAO, in *Geography*, a river of Portugal, which runs into the ſea, at Setuval.

CALDARA, Antonio, in *Biography*, and *Muſical Hiſtory*, was a native of Venice, a great harmoniſt and compoſer of the old ſchool, and extremely voluminous both for the church and the ſtage. His firſt opera, *Argine*, was compoſed for his native city, in 1689, and after furniſhing different parts of Italy with 12 operas and oratorios, in 1714, he went to Vienna, where he was appointed ſecond M.eſtro di Capella, under Fouchs, to the Imperial court, and where his grave ſtyle of writing pleaſed the emperor Charles VI. ſo much, that he hardly ever employed any other compoſer of ſacred or ſecular muſic than Caldara, till after his deceaſe in 1736. So that he not only ſet moſt of Apoſtolo Zino's operas for the firſt time, but 13 of his oratorios; and was the firſt compoſer of Metaſtaſio's operas and oratorios, during the firſt ſix or ſeven years of his reſidence at Vienna.

The maſſes and motets that we have ſeen of his compoſition, are admirable; a gravity of ſtyle, a purity of harmony, learning, facility, and correctneſs in the texture of the parts, are manifeſt in them all; but with his ſecular muſic, we are little acquainted; Metaſtaſio, in his letters, ſeems to complain of his want of invention, taſte, and elegance, in ſetting his dramas; and he firſt ſet ſeven of his beſt productions for the Imperial theatre.

Metaſtaſio began his Imperial laureatſhip at Vienna in 1731, by writing an oratorio, *Sant'* "*Elsna in Calvario.*" His firſt opera there was "Adriano in Syria;" the ſecond, "Demetrio;" then "Olimpiade," "L'Aſilo d'Amore," "Le Grazie," "Demoteonte," "La Clemenza di Tito," "Ciro riconoſciuto," and "Zenobia." All theſe were ſet to muſic by Caldara; but there muſt have been ſome material deficiency of ſtyle or invention, which prevented this muſic from penetrating into the reſt of Europe; for theſe admirable dramas were never heard of till they had been ſet by other compoſers.

CALDARADI Caravaggio, Polidoro. See Polidoro.

CALDARIA *Judiciaria*, the method of trial, or *purgation* by boiling water. See Ordeal.

CALDARIUM, in the *Ancient Baths*, denoted a brazen veſſel or ciſtern, placed in the hypocauſtum, full of hot water, to be drawn thence into the *piſcina*, or bath, to give it the neceſſary degree of heat.

In this ſenſe, the *caldarium* ſtood contradiſtinguiſhed from the *tepidarium* and *frigidarium*.

Caldarium alſo denoted the ſtove, or ſudatory, being a cloſe vaulted room, wherein by hot dry fumes, without water, people were brought to a profuſe ſweat.

In which ſenſe, *caldarium* was the ſame with what was otherwiſe denominated *vaporarium*, *ſudatorium* and *laconium*; in the Greek baths, *hypocauſtum*, ὑποκαυϛον.

Caldarium *æs*, denotes Pot-*metal*.

CALDAS, in *Geography*, a ſmall town of Portugal, in the province of Eſtremadura, a league from Obidos, and 13 miles E. of Peniche; much frequented for its ſulphureous waters. The town is built in an irregular quadrangular form, and the houſes are ſmall, generally conſiſting merely of a ground floor, and only a few of them have windows. To this place the rich merchants and principal nobility of Liſbon reſort twice a year, *viz.* in May and September. Over the warm ſpring is a ſpacious and handſome bathing-houſe, and adjoining to it an hoſpital for poor patients. Beſides the ſprings uſed for drinking, three others ſupply four baths: and the united water from all the ſprings turns a mill near the bathing-houſe.

Caldas *de Rey*, a town of Spain, in Gallicia, 20 miles ſouth of Santiago.

CALDER, a town of Mid-lothian in Scotland, is ſituated in a pleaſant country, at the diſtance of 12 miles weſt of Edinburgh. Here are two annual fairs, and a weekly market; but as there are no manufactories, the population is but ſmall. In 1792, it amounted to 562 inhabitants. A ſhort diſtance weſt of the town is *Calder-houſe*, the ſeat of lord Torphichen. This manſion is memorable in the eccleſiaſtical hiſtory of Scotland, as the place where the ſacrament was firſt adminiſtered after the reformation. The ceremony was performed by John Knox, the celebrated reformer; a portrait of whom is preſerved in the houſe.

Calder, a river of England, which runs into the Aire, about two miles N. of Pontrefact in Yorkſhire. It is navigable to Halifax. Alſo a river, which runs into the Ribble, three miles S. of Clitheroe in Lancaſhire.

Calder *Water*, a river of Scotland, which runs into the Clyde, about five miles above Glaſgow.

CALDERA, a ſea-port of South America, in the country of Chili, on the coaſt of the Pacific Ocean, two leagues N.E. by E. from the lee of an iſland at the mouth of the river Copiapo. S. lat. 27°. W. long. 7°.

CALDERINI, Domitio, in *Biography*, an eminent philologiſt, was born about the year 1446, at Torri, in the territory of Verona, and at the age of 24 years, he was invited, in conſequence of the recommendation of cardinal Beſſarion, by pope Paul II. to the profeſſorſhip of belles lettres at Rome. In this office he continued, under Sixtus IV. and died in 1478, in the flower of his age. All his ſcholars attended him to his grave in mourning. He was much diſtinguiſhed by the aſſiduity of his literary labours, and printed commentaries upon Martial, Juvenal, Virgil, Ovid, Statius, and Propertius, and ſeveral others of the Latin poets: he alſo publiſhed a tranſlation of the two firſt books of Pauſanias, into Latin. He, moreover, cultivated juriſprudence, philoſophy, and mathematics, and exerciſed himſelf ſucceſsfully in Latin poetry. He is reckoned one of the literary wonders of his age. Tiraboſchi.

CALDERINO, in *Geography*, a place of Italy, in the Veroneſe, celebrated for its baths, called "the baths of Verona."

CALDERO, a remarkable mountain in the gulf of Venice, which is a guide at ſea for the harbour Rovigno, which ſee.

Caldero, *Cape*, lies on the north coaſt of South America, W. of Orchier bay, and about 12 leagues E. by S. from the Caracas fort, called the White Cape. It lies nearly S. or a little weſtward from the weſt end of Margarita Iſland, on the coaſt of the Spaniſh main.

CALDERON, de la Bana, Dom. Pedro, in *Biography*, a celebrated Spaniſh dramatic writer, flouriſhed about the year 1640, and after having borne arms, and ſuſtained the rank of a knight of the order of St. James, became an eccleſiaſtic, and a prieſt and canon of Toledo. Turning his attention to the theatre, he acquired the reputation of the moſt copious and eſteemed writer for the ſtage, in Spain, and was ſometimes denominated the Spaniſh Shakſpeare. The fertility of his invention, and the taſte of his age and country, rendered him incorrect in the obſervance of the rules of the drama, and very unequal in his ſtyle and compoſition. His characters are unnatural, and his diction inflated. His chief excellence conſiſted in the contrivance of plots, which are full of buſineſs, and abound in intricacies happily reſolved in the cataſtrophe. Moſt of his works were collected and publiſhed at Madrid, in nine vols. 4to. 1689; the three firſt containing his comedies, and the ſix laſt, a number of dramatic pieces on religious ſubjects, like the Old Myſteries, under the title of "Autos Sacramentales." His ſcanty knowledge of hiſtory has betrayed him into ſeveral blunders. Nouv. Dict. Hiſt.

Calderon, in *Geography*, lies on the coaſt of Coromandel, in India, ſix leagues N. from Tranquebar.

CALDERSBURGH, a townſhip of Orleans county, in the ſtate of Vermont, America, about 151 miles N.E. from Bennington, and 11 miles W. of Connecticut river.

CALDERWOOD, David, in *Biography*, a preſbyterian divine of the church of Scotland, was the deſcendant of a good family in that kingdom; and being early deſtined to the miniſtry, he acquired, in the courſe of his education, an extenſive acquaintance with thoſe ſubjects that were peculiarly appropriate to his profeſſion. About the year 1604, he was ſettled at Crelling near Jedburgh. Zealouſly attached to the Preſbyterian eſtabliſhment, he diſapproved the project formed by king James I. of Great Britain, for bringing the church of Scotland to a nearer conformity with that of England; and when Mr. James Law, the biſhop of Orkney, made a viſitation of the preſbyteries of Merſe and Tiviotdale, as a preliminary towards aſſuming epiſcopal powers, he declined his juriſdiction by a paper under his hand, dated May 5, 1608. Thus did he commence that reſiſtance to the meaſures of the king and epiſcopal party, which uniformly directed and influenced his future conduct. Accordingly, he did not aſſiſt at the general aſſembly held at Glaſgow, June 8, 1610, in which lord Dunbar, the high-treaſurer of Scotland, preſided as commiſſioner; and it appears from his writings, that he regarded all the tranſactions of this aſſembly as null and void. He alſo excepted againſt the proceedings of another general aſſembly held in 1616, at Aberdeen. When a parliament was held by the king in the following year at Edinburgh, and the clergy met, at the ſame time, in one of the churches, in order to confer with the biſhops, thus contriving an aſſembly which was intended to reſemble the Engliſh convocation; Mr. Calderwood, though he attended, publicly declared, that he did not conſider any ſuch meetings as reſembling a convocation: and when he was informed that a bill was depending to empower the king, with the advice of the archbiſhop, biſhops, and ſuch a number of the miniſtry as his majeſty might think proper, to conſider and conclude as to matters decent for the external policy of the church, not repugnant to the word of God; and that ſuch concluſions ſhould have the force of eccleſiaſtical laws; he concurred, with other miniſters, in a formal proteſt againſt the meaſure, for reaſons which were ſubjoined. This proteſt was preſented; and though the clerk-regiſter refuſed to read it before the ſtates in parliament, it had its effect; for although the bill had the conſent of parliament, yet the king thought fit to ſet it aſide, and ſoon after called a general aſſembly at St. Andrew's. In conſequence of this proteſt, Mr. Calderwood was ſummoned before the high commiſſion-court at St. Andrew's, on the charge of mutinous and ſeditious behaviour. The king was preſent, and examined him in perſon; but Calderwood defended himſelf with ſuch ſpirit and preſence of mind, perſiſting in his refuſal to acknowledge that he had been guilty of any crime, that he was firſt committed to priſon; and then ſentenced, by the privy council, to baniſh himſelf out of the king's dominions, and not to return without licence. All his efforts for mitigating this ſentence proving ineffectual, he retired to Holland, where he ſteadily maintained his former principles, and in 1623, publiſhed his famous book, entitled "Altare Damaſcenum, ſeu Eccleſiæ Anglicanæ Politia, Eccleſiæ Scoticanæ obtruſa, à Formaliſta quodam delineata, illuſtrata et examinata." This work contains a cloſe and rigorous examination of the polity of the Engliſh church, under various heads, in which the origin and authority of epiſcopacy, and all the other points of difference, between that and the Preſbyterian churches, are diſcuſſed. King James is ſaid to have expreſſed a high opinion of this work, though he was extremely diſpleaſed with it; and it is certain, that it made a great impreſſion in England, and was very much admired by all avowed Puritans, and by ſuch as were well-wiſhers to their opinions. The modern diſſenters, however, would not concur in many of the author's ſentiments; nor would they contend for the "Jus Divinum" of Preſbyterianiſm. Soon after the publication of this work, Mr. Calderwood returned to Scotland, and lived privately for ſeveral years. As his ſituation was unknown, and he had been afflicted in 1624, with a long and dangerous fit of ſickneſs, a perſon whoſe name was Patrick Scot, taking it for granted that he was dead, wrote a recantation in his name, purporting, that before his deceaſe, he had changed his ſentiments; but when this impoſture was detected, he went over to Holland, and made diligent ſearch for him, with a deſign, as Mr. Calderwood believed, to have diſpatched him. During his retirement, it is not unlikely, ſuch were his talents and temper, that he wrote ſeveral books againſt the proceedings of the clergy in Scotland. But it is more certain that he employed himſelf in diligently collecting all the memorials relative to the eccleſiaſtical affairs of that kingdom, from the commencement of the reformation to his own time. Theſe he digeſted and methodized with great care, and the whole is extant in MS. in the library of the Univerſity of Glaſgow, in ſix folio volumes. Of theſe, an extract has been publiſhed, under the title of "The true Hiſtory of the Church of Scotland," printed in 1618, which comes down to the death of king James. Although the peruſal of this work, on account both of its ſpirit and ſtyle, cannot be agreeable, and the repreſentations contained in it muſt have acquired a ſtrong tinge from party; it has, nevertheleſs, been always regarded as a ſource of much authentic information. How much longer the author ſurvived is not known; but it ſeems probable, from his mentioning the death of Robert Bruce, which happened in 1631, that he lived pretty far in the reign of Charles I.; and we find that he was miniſter of Pencaithland, near Edinburgh, in 1638. Biog. Brit.

CALDONAZZO, in *Geography*, a lake of Germany, in the county of Tyrol; 8 miles E.S.E. of Trent.

CALDRON, a large kitchen utenſil, commonly made of copper; having a moveable iron handle, whereby to hang it on the chimney-hook.

The word is formed from the French *chaudron*, or rather the Latin *caldarium*.

Caldrons, *boiling in*, *caldariis decoquere*, is a capital puniſhment ſpoken of in the middle age writers, decreed to divers ſorts of criminals, but chiefly to debaſers of the coin.

One of the torments inflicted on the ancient Chriſtian martyrs was boiling in caldrons of water, oil, &c.

CALDUBA, in *Ancient Geography*, a town of Spain, placed by Ptolemy in Bætica, in the territory of the Turdetani.

CALDUENDO, in *Geography*, a town of Spain in the province of Guipuſcoa; 8 leagues eaſt of Vittoria.

CALDWELL, a town of America, in New Jerſey, between Newark and Morriſtown.

CALDY, a ſmall iſland in the great bay of Carmarthen, in South Wales; on its weſt ſide, at S.S.E. from Tenby, forming an inner limit on that ſide to the bay, though it ſtretches out circuitouſly to St. Gouan's point. It is about 3 miles from Tenby, and five leages almoſt weſt from Wormſhead, and has upon it a white tower appearing at a diſtance like a white ſail, and ſerving to ſhew where the land lies. Ships may anchor on every ſide of this iſland, and be ſheltered from all winds. N. lat. 51° 33′ W. long. 5° 19′.

CALE, or Kale, in *Botany*. See Brassica, Borecole, and Crambe.

Cale, in *Scripture Geography*. See Calah.

CALEA, in *Botany*, Linn. gen. 941. Schreb. 1277. Willd. 1466. Juſſ. p. 185. Gært. 975. Claſs and order, *ſyngeneſia polygamia æqualis*. Nat. ord. *Compoſitæ oppoſitifoliæ*, Linn. *Corymbiferæ*, Juſſieu.

Gen. Ch. *Cal.* imbricated; ſcales oblong, rather looſe. *Cor.* uniform; florets hermaphrodite, numerous, equal, funnel-ſhaped; border five-cleft. *Stam.* filaments five, capillary, very ſhort; anthers forming a cylindric tube. *Piſt.* germ a little oblong; ſtyle thread-ſhaped, the length of the corolla; ſtigmas two, recurved, acute. *Peric.* the permanent calyx. *Seeds* ſolitary, oblong; down ſimple or none. *Receptacle* chaffy; ſcales a little longer than the calyx, ſtanding out conſpicuouſly among the florets.

Eſſ. Ch. *Calyx* imbricated. *Receptacle* chaffy. Sp. 1. C. *jamaicenſis*, Linn. (Santolina ſubhirſuta, &c. Brown. Jam. 315. 8. Conyza fruticoſa, &c. Sloane Jam. 124. hiſt. 1. p. 257. t. 151. f. 3.) "Flowers about three, peduncled; leaves ovate-oblong, ſomewhat ſerrated, petioled." Perennial. *Stems* ſix or ſeven feet high, ſhrubby, ſlender, round, ſlightly downy. *Leaves* oppoſite, hairy, rugged, three-nerved. *Flowers* terminating, yellow with a red tinge: calyx coloured: chaffy ſcales of the receptacle coloured, the length of the calyx; down rugged, as long as the flower. A native of Jamaica; in woods. Obſ. As ſeveral other ſpecies are natives of Jamaica, the trivial name is a bad one. 2. C. *aſpera*, Willd. Jacq. ic. rar. 3. t. 583. Collect. 2. p. 290. "Flowers ſolitary, peduncled, axillary; leaves oblong, trebly-nerved, unequally ſerrated, rough." Willd. Annual. Stem four-cornered; leaves oppoſite. A native of the warmer parts of America. 3. C. *oppoſitifolia*, Linn. (Santolina erecta foliis linearibus; Brown. Jam. 315. 4. Acmella jamaicenſis; Sloane hiſt. 1. p. 258. Coipatlis, Hern. 36.) "Corymbs cloſe; peduncles very long; leaves lanceolate; ſtem herbaceous." *Stem* two feet high, upright, rather ſtiff, ſtriated, pubeſcent; branches oppoſite. *Leaves* oppoſite or ternate, nearly ſeſſile, entire or ſlightly toothed, nerved, acuminate, ſoft. *Flowers*, white. *Seeds* without down, (with three or four very minute awns, Swartz). Inner ſcales of the receptacle longer than the reſt. A native of Jamaica. 4. C. *Amellus*. Linn. (Amellus ramoſus, &c. Brown. Jam. 317.) "Flowers ſomewhat panicled; calyxes ſhort; ſeeds naked; leaves ovate-lanceolate, petiolated." *Stem* ſhrubby, branched. *Leaves* oppoſite. *Flowers* yellow. A native of Jamaica. Willdenow ſuſpects that it does not differ from Bidens ſcandens of Linnæus. This and the preceding were cultivated by Mr. Miller in 1768. 5. C. *lobata*, halbert-weed, Willd. Gært. Tab. 174. fig. 5. (Conyza lobata; ſp. pl. Conyza arboreſcens, Plum. Spec. 9. ic. 96. Santolina erecta ſubhirſuta floribus comoſis, Brown. Jam. 315. 2. Virga aurea major, ſive Doria; Sloane Jam. 125. Hiſ. 1. 260. tab. 152. fig. 4.) "Corymbs cloſe; leaves alternate, upper ones ovate lanceolate; lower ones halbert-ſhaped; ſinuate-ſerrated." Swartz. Perennial. *Stem* four or five feet high, leafy, branched. *Flowers* yellow. Sloane. *Receptacle* rather convex; ſcales ſimilar to thoſe of the calyx. *Seeds* ſmall, oblong, ſmooth; down ſimple, a little toothed, ſhorter than the ſcales of the receptacle, but equal in length to the flower, caducous. Gært. Brown ſpeaks of it as an excellent bitter, and ſays that a ſpirituous infuſion of the tops is kept in moſt plantations, and adminiſtered as an active ſtomachic. Introduced into England by Dr. Houſton before 1733. 6. C. *pinifolia*, Willd. Martyn. Forſt. prod. 288. "Flowers ſomewhat umbellate, terminating, cloſe; leaves nearly ſmooth, alternate, linear, revolute at the margin; ſtem ſhrubby; branches pubeſcent," Willd. Perennial. Peduncles ſhort, one-flowered. A native of New Zealand. 7. C. *leptophylla*, Willd. Martyn. Forſt. Prod. 287. "Flowers ſomewhat umbellate, terminating; leaves growing by fours, ſpreading, linear, obtuſe, revolute at the margin, down underneath; ſtem ſhrubby; branches downy." Willd. Perennial. Younger leaves imbricated. adult ones ſpreading; old ones rather reflexed. A native of New Zealand. 8. C. *ſcoparia*. See SERGILUS *Scoparius*.

Obſ. A ſeed with a ſimple down forms part of the generic character of Calea, as drawn up by Linnæus; and yet that character is found in only one of his own ſpecies. We have therefore found it neceſſary to exclude it from the eſſential character, in order to admit the oppoſitifolia and amellus; as Martyn and La Marck had already in ſome degree done; though we confeſs that, with the omiſſion, the genus is not ſufficiently diſcriminated from ſome others. The whole claſs ſyngeneſia certainly ſtands in need of accurate inveſtigation and cautious reform. But this is a taſk on which we have not leiſure to enter. We apprehend that we diſcharge our duty to the public, if we lay before it the preſent ſtate of the ſcience, and point out ſuch deficiencies as occur to our notice. The ſcoparia, which Linnæus at firſt made a chryſocoma, having a naked receptacle, cannot be a calea. As it differs from chryſocoma in the ſtructure of its down, we have adopted the genus formed for it by Gærtner.

Propagation and Culture. Theſe plants may be propagated by ſeeds, treated like other natives of warm climates.

CALEAL, in *Geography*, a town of Perſia, in the province of Aiderbeitzan, 142 miles S.E. of Tauris.

CALEB, in *Scripture Hiſtory*, the ſon of Jephunneh, one of the meſſengers deputed by Moſes to explore the land of Canaan. Caleb and Joſhua returned with a favourable report, revived the dejected ſpirits of the Iſraelites, and aſſured them of ſucceſs in their projected invaſion of the country. On this account it was predicted by Moſes that they were the only two perſons of all the people that came out of Egypt, who ſhould live to enter the land of Canaan. Caleb was at this time 40 years old. After the Iſraelites, under the command of Joſhua, had taken poſſeſſion of Canaan, B. C. 1451, he divided the land in the year B. C. 1455; upon which Caleb obtained for his portion the mountains and city of Kirjath-Arba, or Hebron, a diſtrict poſſeſſed by the three ſons of Anak. Finding it difficult to expel them from the town of Debir, he promiſed his daughter Achſah as wife to any one who ſhould take it. This was effected by Othniel, the ſon of Kenaz, Caleb's younger brother, who accordingly married Achſah. Caleb then ſettled at Hebron, and is ſaid to have lived in peace to his 114th year. Numb. xiii. xiv. Joſhua xv. Judges 1.

CALEB, in *Scripture Geography*, a diſtrict of Judah, in which were the cities of Kirjath-Sepher, and Hebron, belonging to the family of Caleb. 1 Sam. xxx. 14.

CALECASIA, in *Geography*, a market town of Corſica, in the diſtrict of Niolo.

CALED, or KHALED, EBEN AL WALID, in *Biography* and *Hiſtory*, one of the moſt valiant, ſucceſsful, and ferocious of Mahomet's captains, belonged to the tribe of Koreiſh, and began his military career with oppoſing the pretended miſſion of the prophet: and at the battle of Ohod, contributed by means of the wing which he commanded to the defeat of the Moſlems. Being afterwards converted, he became a principal champion in the impoſtor's cauſe, and obtained from Mahomet the honourable title of "one of the ſwords of God." This title was conferred upon him in conſequence of the battle of Muta, A. D. 630, in which, after the fall of three ſucceſſive commanders of the Moſlems, he aſſumed the ſtandard, and by his valour withſtood and repulſed the ſuperior numbers of the Chriſtians. Upon the acceſſion of Abubeker, he was deputed with a ſmall army to counteract the revolt of ſeveral Arabian tribes, whom he completely ſubdued. He afterwards obtained a more important victory over the impoſtor Moſeilama, who fell in the battle, and whoſe ſurviving followers were compelled to embrace the religion of Mahomet. In his ſubſequent invaſion of Irak, the ancient province of Babylon, he was eminently ſucceſsful, and terminated his expedition by the capture of the city Hira near the Euphrates, and the extinction of the kingdom, which took its name from that capital. From thence he was ſummoned into Syria to ſupport the Moſlems under the command of Abu Obeidah, who had met with ſeveral checks from the Greeks; and being appointed to ſuperſede that general, he ſoon changed the aſpect of affairs. Having reſcued the detachment that beſieged Boſtra, he inveſted this place, and, aided by treachery, took it. To the inhabitants who ſued for quarter, he ſhewed himſelf unuſually merciful, and reſtrained the carnage which they were ſuffering. On his arrival before Damaſcus he vanquiſhed by his perſonal valour two Chriſtian commanders, and on their refuſal to embrace iſlamiſm, put them to death in cold blood. Having collected a powerful body of Moſlems at Aizaadin, in the year 633, he totally diſcomfited Werdan, the general of Heraclius, and deſtroyed the greateſt part of his army. During the progreſs of the ſiege of Damaſcus, many exploits of valour were performed by both parties; at length, however, the ſiege having been prolonged 70 days, the inhabitants ſought refuge in the mild and generous diſpoſition of Abu Obeidah from the fury of Caled, and ſtipulated to ſurrender the place on moderate terms. In the mean while Caled interpoſed, prevented the execution of the treaty, and with ſavage ferocity, put to the ſword all that came in his way; and meeting with Abu Obeidah, who was peaceably entering the city, a conteſt enſued; one inſiſting on the right of the ſword, and the other urging the ſacredneſs of a capitulation. Caled in the iſſue yielded to the pleas of mercy and true policy; and the ſword was ſheathed, on condition of admitting to tribute and toleration of religion thoſe inhabitants who choſe to continue in the city. The adherents of Thomas, however, who had fought under his banner in the defence of the city, embraced the alternative of poverty and exile. Accordingly in an adjacent meadow they formed an encampment of prieſts and laymen, of ſoldiers and citizens, of women and children; and being allowed to take with them their moſt precious moveables, and arms neceſſary for their defence, they prepared to abandon their native homes. Caled, whoſe inflexible ſoul was not touched by the ſpectacle of their diſtreſs, haſtened and incommoded their departure; and ſternly declared, that after a reſpite of three days, they might be purſued and treated as the enemies of the Moſlems. Unſated with blood and vengeance, and further urged by the intreaties of Jonas, a noble Damaſcene, whoſe betrothed ſpouſe had accompanied the fugitives, Caled at the head of 4000 horſe, in the diſguiſe of Chriſtian Arabs, undertook the purſuit. Accordingly he traced their march acroſs the mountains of Libanus, encountering incredible hardſhips, to the vicinity of Laodicea, and in a pleaſant valley where they had pitched their tents, ruſhed on the promiſcuous multitude, inſufficiently provided with arms, and already vanquiſhed by ſorrow and fatigue. In conſequence of this furious onſet and indiſcriminate ſlaughter, the Arabs enjoyed the ſatisfaction of believing, that not a Chriſtian of either ſex eſcaped the edge of their ſcymetars; and all the rich ſpoils of the victims fell into the hands of the conquerors. In the tumult of the battle Jonas found the object of his purſuit; but her reſentment was inflamed by the laſt act of his perfidy: and as Eudocia ſtruggled in his hateful embraces, ſhe ſtruck a dagger to her heart. Caled had penetrated, on this occaſion, about 150 miles into the Roman territory; and having completed this bloody tragedy, which has afforded a ſtriking ſubject both to hiſtory and poetry, he returned to Damaſcus with the ſame ſecrecy and ſpeed.

On the acceſſion of Omar, who ſucceeded Abubeker in the caliphate, Caled was removed from the command; and it was again transferred to the more gentle and conciliatory Abu Obeidah. The army expreſſed their diſſatisfaction with this change; but Caled, notwithſtanding the characteriſtic ferocity of his temper, ſubmitted to it with magnanimity; and having cauſed Omar to be proclaimed caliph at Damaſcus, reſigned his command without heſitation, declaring his readineſs to ſerve the Muſſulman cauſe in any poſt which it ſhould pleaſe the head of the religion to aſſign him. Soon afterwards his activity and enterpriſe were of ſignal ſervice in relieving a party of the Moſlems, who had incautiouſly marched to plunder a famous monaſtery in the neighbourhood of Abyla, and who were ſurrounded by a much ſuperior force. Caled himſelf had been relieved in ſimilar circumſtances of danger, on a reconnoitering party, by a detachment ſent by Abu Obeidah. Under this chief Caled ſerved in Syria and Meſopotamia, and he always diſtinguiſhed himſelf in ſeaſons of peculiar difficulty and peril. Of his ſubſequent exploits the moſt eminent was the victory obtained by him in the battle of Yermuk, A. D. 636; on which intereſting occaſion the public voice, and the modeſty of Abu Obeidah reſtored the command to him, who was eſteemed the moſt deſerving of the Moſlems. The combat was obſtinate and bloody; 4030 of the Moſlems were buried in the field of battle; and the ſkill of the Armenian archers enabled 700 to boaſt that they had loſt an eye in that meritorious ſervice. The Syrian veterans acknowledged that it was the hardeſt and moſt doubtful of the days which they had ſeen; but it was likewiſe the moſt deciſive. Many thouſands of the Greeks and Syrians fell by the ſwords of the Arabs; many were ſlaughtered, after the defeat, in the woods and mountains; many, by miſtaking the fords, were drowned in the waters of the Yermuk; and however the loſs may be magnified, it was undoubtedly very great. Abu Obeidah, in his letter to the caliph, ſtates the number killed to have been 150 000, and the priſoners at 40,000. This computation exceeds all belief. Such was the ſucceſs of the Saracens, that the Greek army durſt no longer appear in the field; and the conqueſt of Jeruſalem was the ſpeedy reſult. In 638, Caled took Aleppo, and he carried his victorious arms beyond the Euphrates. He ſurvived about three years the peſtilence of 639, which proved fatal to many Muſſulman chiefs; but no account remains of the time or manner of his death. His tomb is ſhewn in the neighbourhood of Emeſa. The valour of this champion was ſupported by fanaticiſm; for as long as he wore a cap, which had been bleſſed by Mahomet, he deemed himſelf invulnerable. Mod. Un. Hiſt. vol. i. Gibbon's Hiſt. vol. ix.

CALEDON, in *Geography*, a ſmall town of Ireland, in the county of Tyrone, and province of Ulſter, near the river Blackwater; 70 Iriſh miles N. by E. from Dublin.

CALEDONIA, in *Ancient Geography*, an appellation by which that part of Great Britain now called Scotland was formerly diſtinguiſhed. See SCOTLAND. The etymology of this name, as well as the preciſe boundaries of the country to which it has been applied, have been variouſly aſſigned. According to Camden, the appellation of Caledonia is derived from the Celtic or Britiſh *kaled* or *caled*, hard; whence Caledonii, ſignifying a people, *hardy*, *unciviliſed*, and *ruſtic*. Buchanan derives it from the old Scottiſh word, *calden*, denoting a hazel-tree. Others (See Preface to Oſſian's Poems, vol. ii. p. 4.) compound it of the two Britiſh words *cail* and *dun*, which ſignify the Gauls or Britons of the mountains.

tains. Accordingly it is ſaid, that this was a very proper name for the real Caledonians of Badenoch, Braidalbin, and the adjacent tracts, which are the moſt mountainous parts of Scotland, and not very unſuitable to the other nations, to whom it was given by the Roman authors. Others again affirm, that *Gael-doch* is the only appellation, which the Scots, who ſpeak the Gaelic language, know for their own diviſion of Britain: And *Gael-doch* is a compound of *Gael* or *Cael*, the firſt colony of the ancient Gauls who tranſmigrated into Britain, and *doch*, a diſtrict or diviſion of a country. The Romans, by tranſpoſing the letter *l* in *Cael*, and ſoftening into a Latin termination the *ch* of *doch*, formed the well-known name of Caledonia.

The ancient Caledonia comprehended all that country which lay to the north of the rivers Forth and Clyde; or, as others ſtate its boundaries, from the wall of Severus, connecting the eaſt coaſt near Tinemouth with the Solway Firth, at Boulneſs, on the weſt coaſt, to the northern ſhore. The Caledonii of Ptolemy poſſeſſed that extenſive tract of country which reached from the Lelannonian bay, or Loch-fenn, on the weſt, to the eſtuary of Vara or Firth of Tayne on the eaſt coaſt, and included Badenoch, Braidalbin, the inland parts of the ſhires of Murray, Banff, Aberdeen, and Perth. The Greek and Roman hiſtorians and poets, who flouriſhed in the firſt, ſecond, and third centuries, when they have occaſion to mention the affairs of Britain, give the general name of Caledonii to all the Britiſh nations without the limits of the Roman province, and that of Caledonia to their country. The reaſon of this might be, that the Caledonii were the moſt powerful or warlike of thoſe nations, and maintained ſome kind of ſuperiority over the reſt, who were contented to fight under their conduct againſt their common enemies, the Romans and provincial Britons. Hence the name of the Caledonii, from being the proper name of one nation, became the common denomination of many.

Caledonia ſeems to have been unknown to the Romans till Agricola entered it with his army, in his third campaign, A. D. 80. Marching from ſouth-weſt towards the north-eaſt, he traverſed the territories of ſeveral Britiſh tribes, and penetrated to the river Tay, without oppoſition. The Caledonii ſeemed to have retired, hoping to recover in the winter, after the retreat of their enemies, what they had loſt in the ſummer. But Agricola diſappointed their expectations by employing the remainder of the ſeaſon in building forts in the moſt convenient ſituations for keeping poſſeſſion of the country. As ſoon as theſe forts were finiſhed and ſtored with proviſions, he put his army into them for their winter-quarters, that his troops might be every where at hand to check the attempts of the natives to ſhake off the yoke. Tacitus does not inform us, whether Agricola ſpent this winter in Caledonia, or in the more ſouthern parts of Britain. See AGRICOLA

When Adrian arrived in Britain A. D. 121, he actively employed himſelf in ſecuring the frontiers of the Roman poſſeſſions againſt the incurſions of enemies. With this view he erected his famous rampart or wall, as the boundary of the Roman province, from the mouth of the River Tine on the eaſt, to the Solway firth on the weſt, near the track where Agricola had built his firſt chain of forts. See ADRIAN. Under the reign of Antoninus Pius, A. D. 138, Lollius Urbicus was governor of Britain; and in order to ſecure the peace of the Roman province in this iſland, it was found neceſſary to enlarge its limits. Accordingly Lollius Urbicus defeated the Mœatæ in ſeveral engagements, and recovered the country as far as the iſthmus between the firths of Forth and Clyde. In order to ſecure his conqueſt, and to keep the Caledonians at a greater diſtance, Urbicus, by direction of the emperor, raiſed another ſtrong rampart, in imitation of that of Adrian, between thoſe two friths, along the line of forts which had been conſtructed there by Agricola. This rampart, with its ditch and forts, was intended for the utmoſt boundary of the Roman empire in Britain. In the year 180, the Caledonians, having broke through the wall of Antoninus, and being joined by the Mœatæ, invaded the Roman province. To repel this invaſion, the government of Britain was beſtowed upon Ulpius Marcellus, who, having firſt reſtored the diſcipline of the Roman troops, led them againſt the enemy, and defeated them in ſeveral battles. During the conteſt which took place on the acceſſion of Septimus Severus to the imperial throne, Britain became a ſcene of great confuſion, A. D. 198. The Mœatæ and Caledonians, obſerving the defenceleſs ſtate of the Roman province, made incurſions into it, and ſpread deſolation in their progreſs. When Lupus was deputed by Severus to repel theſe invaders, he found himſelf unable to accompliſh this object by force, and therefore bribed the plunderers to retire, by purchaſing their priſoners with a ſum of money. Their incurſions, however, were renewed with greater violence for ſeveral years; and it was found neceſſary for Severus himſelf to viſit Britain in perſon. The news of his arrival, A. D. 207. alarmed the Mœatæ and Caledonians, and induced them to ſend ambaſſadors to promiſe ſubmiſſion, and ſue for peace. Severus, however, diſmiſſed the ambaſſadors without any ſatisfactory anſwer, and advanced northward at the head of a very large army. When he had paſſed the wall of Adrian, he encountered many difficulties and dangers. His army was haraſſed with continual ſkirmiſhes, and decoyed into many ambuſhes; and in his progreſs, he was obliged to employ one part of his army in cutting down woods, draining lakes and marſhes, making roads, and caſting bridges over rivers, whilſt the other part defended the labourers from the enemy. In this expedition Severus loſt no fewer than 50 000 men, though he fought no battle, and ſaw no enemies in a body. At length he penetrated into the very heart of Caledonia, and ſtruck ſuch terror into its inhabitants, that they renewed their ſupplications for peace, which was at laſt granted them, on condition of relinquiſhing a part of their country, and delivering up their arms. Having concluded a peace with the Caledonians, and conducted his army back into the northern parts of the Roman province, he employed his troops for about two years in conſtructing his famous wall. Towards the diſaſtrous decline of his life, A. D. 210, the Mœatæ and Caledonians took advantage of his weakneſs and the diſtraction of his family, and renewed the war in hopes of recovering that part of their country which they had been obliged to reſign. The aged emperor, who had retired to York, become peeviſh by his complicated ſufferings, was enraged by the news of this revolt, and iſſued orders for exterminating theſe two nations, without ſparing the very infants in their mothers' wombs. The execution of theſe cruel orders was prevented by the emperor's death. His eldeſt ſon Caracalla, as ſoon as he heard of his father's death, concluded a peace with the Mœatæ and Caledonians, and ſoon after left Britain.

When the emperor Severus invaded Caledonia, A.D. 207, we are told (Xiphilin. ex Dio Nicæo in Sever.) "that the Mœatæ and Caledonians (who poſſeſſed all the iſland beyond the wall of Adrian), inhabited barren uncultivated mountains, and deſert marſhy plains; that they had neither walls, houſes, nor cultivated lands; but lived on the milk and fleſh of their flocks and herds, on what they got by plunder, or caught by hunting, and on the fruits of their trees." Having been obliged by Severus to ſurrender part of their country to the Romans, that induſtrious people, in the courſe of the third century, built ſeveral towns and ſtations, conſtructed highways, cut down woods, drained marſhes, and introduced agriculture into the country between the walls, many parts of which are very level, fertile, and fit for tillage. Although the Romans never formed any large or laſting eſtabliſhment to the north of the wall between the Forth and Clyde, yet many of them, and of the provincial Britons, retired into Caledonia at different times, and on various occaſions, particularly about the end of the third century, in order to eſcape from the Diocleſian perſecution. It is, therefore, highly probable, that theſe refugees inſtructed the people among whom they ſettled, not only in their religion, but alſo in their arts, particularly agriculture. The eaſtern coaſts of Caledonia were remarkably fit for cultivation, and the Picts, who inhabited theſe coaſts, were very early acquainted with agriculture, which they undoubtedly learned from the Romans, or the provincial Britons. The name which was given to the Caledonians on the eaſt, by thoſe of the weſt, was "Cruitnich," which ſignifies wheat or corn cakes; a proof that they were huſbandmen, and expreſſing the contempt or envy of the carnivorous highlander. There is alſo reaſon to believe, that the Caledonians of the weſt, who, in the fourth century, began to be called "Scots," denoting, in the Celtic language, wanderers or vagrants, though they were of a more reſtleſs and wandering diſpoſition than thoſe of the eaſt, and their country was more mountainous, and not ſo fit for cultivation, were not altogether ignorant of agriculture at this period. The vicinity of the Hebrides, profuſely ſcattered along the weſtern coaſt of Scotland, tempted the curioſity of theſe weſtern Caledonians or Scots, and improved their ſkill; and they acquired, by ſlow degrees, the art, or rather the habit, of managing their boats in a tempeſtuous ſea, and of ſteering their nocturnal courſe by the light of the well-known ſtars. The ancient Caledonians, and other Britons, educated in the midſt of arms, and accuſtomed from their infancy to hear nothing admired or celebrated but valiant deeds in war, looked upon every profeſſion but that of arms as diſhonourable; and every employment but war as unworthy of a man of ſpirit. To ſuch an extravagant height did they carry theſe abſurd and pernicious notions of honour, that they imagined that thoſe who followed any other employment, except that of arms, not only lived deſpiſed, and died unlamented; but that their ſouls, after death, hovered in the lower regions, among fens and marſhes, and never mounted the winds, nor mingled with the ſouls of warriors in the airy halls. Dio and Herodian ſeem to intimate, that the Mœatæ and Caledonians were naked in the beginning of the third century, when they were invaded by the emperor Severus. But theſe authors probably meant no more than that theſe people were very imperfectly clothed, or almoſt naked; and they uſe expreſſions which admit of this interpretation. As the Romans never conquered the Caledonians, or northern Britons, they cannot be ſuppoſed to have made any material change in their language; which is ſtill ſpoken by their poſterity, in the highlands, and weſtern iſlands of Scotland, with leſs variation from the original Celtic (if we may believe ſome of the beſt judges in theſe matters,) than in any other part of Europe.

As early as the reign of Conſtantine, the inhabitants of Caledonia were divided between the two great tribes of the "Scots," and of the "Picts;" the former poſſeſſing, as we have obſerved, the weſtern; and the latter, the eaſtern diviſion of that country. The power, and almoſt the memory of the Picts have been extinguiſhed by their ſucceſsful rivals; and the Scots, after maintaining for ages the dignity of an independent kingdom, have multiplied, by an equal and voluntary union, the honours of the Engliſh name. Tacitus Vit. Agric. Critical Diſſertations on the Origin, Antiquities, &c. of the Caledonians, by Dr. J. Macpherſon, Lond. 1768. 4to. J. Macpherſon's Introd. to the Hiſt. of Great Britain and Ireland, Lond. 1773. 4to. Henry's Hiſt. vol. i. and ii. Gibbon's Hiſt. vol. iv. See ATTACOTTI, HIGHLANDERS, PICTS, and SCOTLAND.

CALEDONIA, a town in the country above deſcribed; which, according to Buchanan, gave name to the country, the people, and adjacent ocean.

CALEDONIA *Sylva*, a large foreſt in the ſame country, covered with lofty trees, and affording ſhelter to wild and fierce beaſts.

CALEDONIA, in *Geography*, a ſea-port ſettlement, on the north-weſt ſide of the iſthmus of Darien, near the Gulf of Mexico, founded in 1698, by ſome Scots families; but which, by the influence of the Eaſt India Company, they were obliged to abandon, in the year 1700. N. lat. 9° 30′. W. long. 77° 36′.

CALEDONIA, a county of Vermont, in America, containing 24 townſhips, and having to the S.E. Connecticut river; to the N.W. Orleans and Chittenden counties; to the N.E. Eſſex county; and to the S.W. Orange-county, of which, till of late, it formed a part, containing 9377 inhabitants.

CALEDONIA, *New*, a large iſland of Auſtralaſia, in the Southern Pacific Ocean, extending from 19° 37′ to 22° 30′, S. lat.; and from 163° 37° to 167° 14′, E. long. Its length from north-weſt to ſouth-eaſt is about 80 leagues; but its greateſt breadth does not exceed 10 leagues. It was diſcovered by captain Cook, in 1774. He explored the north-weſtern part of this iſland, and ſays that this diſtrict was called "Balade;" but D'Entrecaſteaux, who commanded the expedition fitted out by the Conſtituent Aſſembly of France in ſearch of La Pérouſe, in 1791—1794, viſited its ſouth-weſtern coaſt. The reefs by which this part is bounded, are generally from 25 to 30,000 toiſes from the land; and it is rendered ſtill more dangerous by the ſouth-weſt winds that blow in that quarter. Many mountainous iſlands and detached rocks ſtretch from N.N.E. to E.N.E. and render this extremity of the iſland more dangerous than the ſouthern part. Some of theſe iſlands are ſeveral hundred toiſes in extent; they are very numerous, and encircled with reefs. Theſe iſlands ſeem to be a continuation of the mountains of the large iſland; their baſes being covered by the ſea, and their ſummits riſing above it, and forming ſo many little iſlands. The gradual diminution of the height of theſe mountains affords reaſon to ſuppoſe, that in theſe ſeas, ſhoals extending to a great diſtance contribute to augment the dangers of navigation. The reefs that abound in the vicinity of this iſland, are coral rocks, the well-known work of polypi. The land of New Caledonia, which is low towards its ſouthern extremity, riſes into mountains of moderate elevation, in a ſouth-eaſt or north-weſt direction, inclining towards the north. Hills, almoſt deſtitute of vegetation, riſe like an amphitheatre towards the principal chain of mountains, and appear to be at leaſt 900 toiſes in perpendicular height, and directed towards the north-weſt. D'Entrecaſteaux and his companions obſerved three ranges of mountains of different degrees of elevation, and hollows apparently formed by the fall of the rains, which were continued to the ſummits of the moſt arid mountains. Behind theſe high mountains they ſaw about 20.000 toiſes within the land, which ſeemed to tower above all the reſt, and to be at leaſt 1200 toiſes in perpendicular elevation. From the middle of one of theſe ravines or hollows iſſued a torrent, which appeared at a conſiderable diſtance white with its foaming waters; and trees are found growing in the bottoms of the ravines with which the hills are furrowed. Theſe torrents are numerous, and, in ſome places, form fine caſcades; and they ſerve alſo to fertilize the plains and valleys that are interſperſed among the barren mountains, and which exhibit traces of culture and population. The ſoil of the plains is a ſandy black mould: the ſides of the hills are yellow clay with mica; and the higher parts conſiſt of quartz and mica, tinged red, or orange, with iron. Garnets are alſo found in petro-ſilex, and in ſeveral places white tranſparent quartz, with layers of gold, coloured mica, blended with ſerpentine, hornblende, talc, and garnets. New Caledonia differs from all the other iſlands yet diſcovered in the South Sea, by being entirely deſtitute of volcanic productions. Every part of the coaſt ſeems to be inhabited; and the plantations in the plains are cultivated with much labour. On the ſides of the mountains ſmall walls are raiſed above one another to prevent the rolling down of the ground which was cultivated. But as the country is for the moſt part rocky and barren, the inhabitants chiefly ſubſiſt on roots and fiſh. Some of them eat the earth called ſteatite, which they probably make choice of to allay their hunger, becauſe it is ſoft and crumbles, and is eaſy of digeſtion. They alſo boil, and eat a ſpecies of ſpiders, which are found in the woods. Like many other ſavages, they feed on the fleſh of their enemies, which they previouſly broil on a fire of charcoal. This horrible practice of eating human fleſh is confirmed by ſeveral facts recited by D'Entrecaſteaux; notwithſtanding the favourable accounts given of theſe iſlanders by captain Cook and Dr. Forſter. They preferred water to wine or brandy; and in drinking it, inclined their heads at about two feet diſtance above the ſurface of the water, and then threw it up againſt their faces with their hands, opening their mouths very wide, and catching as much as they could.

The bread-fruit and cocoa-nut are ſcarce, and obtained with difficulty; although in ſome of the interior vallies there are conſiderable plantations of theſe, as well as of bananas, Caribbee cabbages (arum eſculentum), yams, ſugar-canes, &c. but the iſland furniſhes ſeveral new plants, birds, and fiſhes. The natives ſeem to be altogether unacquainted with goats, hogs, dogs, or cats, as they had not any name by which to diſtinguiſh them. The inhabitants are ſtout and tall, ſome of them meaſuring ſix feet four inches, and generally well proportioned; their features mild; their hair black and woolly; but many, who ſeemed to be deſirous of having the appearance of long hair, faſtened to their own locks two or three treſſes, made with the leaves of ſome plants of the graſs kind, and covered with the hair of the Vampyre bat, which hung down to the middle of their backs. Some of them cropped their hair ſhort, and uſed a kind of comb, formed of a number of ſticks of hard wood, generally about 20, which they faſtened together at one end, and parallel to, and nearly one-tenth of an inch from one another; and theſe combs they always wore in their hair, on one ſide of the head; on their heads they wore a kind of concave, cylindrical black cap, made of ſtrong paper, which they ſeemed to conſider as an ornament, and which, it was ſuppoſed, was worn only by the chiefs and warriors. The cuſtom of pulling out their beards by the root is very general, although ſome of them let their beards grow. Their ſkin is nearly of as deep a black as that of the inhabitants of Diemen's Cape, whom they very much reſemble in the caſt of their countenance. Theſe iſlanders are wholly naked, except that they wore round the middle pieces of coarſe ſtuff, made of bark, or large leaves of trees. In ſome caſes, pieces of this kind of cloth were faſtened by a ſtring round the neck, and to this ſtring were hung ſmall round beads of a pale green ſtone. They were not deſtitute of coarſe garments made of matting, but they never ſeemed to uſe them except in their canoes, and when unemployed.

The women in this iſland ſeemed to be in a ſubordinate and ſervile ſtate, and employed themſelves in various kinds of labour. Their colour is generally a dark cheſnut, or a mahogany brown; their ſtature is middle-ſized, rather tall, and their whole form ſtout and clumſy. They had no other garment beſides a kind of fringe, made of the filaments of the bark of trees, which ſerved them as a girdle and paſſed ſeveral times round the waiſt. Their character of chaſtity is ſuperior to that of the females in the other iſles of the Pacific; nor did any inſtance occur of their permitting any indecent familiarity with an European during capt. Cook's ſtay at the iſland. But the account of their chaſtity given by D'Entrecaſteaux is not ſo much to their reputation. The lower lobe of the ears, both of males and females, perforated with a very large hole, hung down to their ſhoulders; and into theſe holes ſome introduced leaves of trees, others a piece of wood in order to ſtretch them bigger. Several had this lobe jagged; probably from having been torn either in battle, or in running through the woods. Their general ornaments are ear-rings of tortoiſe-ſhells, necklaces, or amulets, made both of ſhells and ſtones, and ſome of twiſted threads, ſuſpended from which they uſually carried at the end of a ſtring a ſmall piece of human bone, or hard ſtone, indifferently carved; and bracelets made of large ſhells, which they wear above the elbows. By the account of Cook and Forſter, the Caledonians are repreſented as different from the other natives of the South Sea iſlands, with regard to their honeſty and the inoffenſiveneſs of their diſpoſition and manners. This account is not confirmed by D'Entrecaſteaux. He ſays, that whilſt they aſked for ſtuffs and iron in exchange for their effects, they ſoon gave evidence of their being audacious thieves; and he mentions ſeveral inſtances of the ferociouſneſs of their diſpoſitions, ſuch as their feeding on the fleſh of children, &c. Of their being cannibals there is no doubt; and they are furniſhed with an inſtrument, made of ſtone, with ſharp edges, for cutting up the limbs of their enemies, which they divide among them after a battle. Their houſes or huts are circular, formed in the ſhape of bee-hives, about 1½ toiſe in height, and as much in breadth, cloſe and ſmoky, as there is no paſſage for the ſmoke but through the door. Some of theſe huts are ſcattered at the diſtance of three or four hundred paces from each other, and overſhadowed by a few cocoa-trees. Some of them are ſurrounded by paliſades 1½ yard high, and 3½ feet from the borders of the hut, with a narrow walk before the door. The door, about a yard high and half a yard wide, is ſometimes cloſed by a piece of the limb of a cocoa tree, the leafy branches of which are interlaced. Of theſe doors ſome had two poſts, at the upper extremity of which a man's head was rudely carved. The lower part of theſe huts is erected perpendicularly to the height of a yard, and then tapered off in a pretty regular cone, and terminated by the upper end of a poſt, fixed in the centre of the floor. The frame of the hut conſiſts of poles, bearing againſt the upper end of the poſt, which riſes from the middle of the floor, and is near three inches in diameter at the bottom. A few pieces of wood bent to an arch, render theſe little habitations ſufficiently ſtrong. They are covered with ſtraw to the thickneſs of two or three inches; and the floor, on which the natives are perfectly ſheltered from the weather, is ſpread with mats. Within the hut on one ſide is a board, faſtened with cords in an horizontal poſition, about a yard from the ground, on which they depoſit any thing out of the way. The muſquetoes, however, are ſo troubleſome in theſe huts, that they are obliged to light fires to drive them away when they go to ſleep; and as there is no vent for the ſmoke, except at the door, they muſt be extremely incommoded by it. Near ſome of theſe dwellings are little hillocks of earth, 12 or 14 inches high, with a very open trellis in the middle, of the height of two or three yards, called by the natives "Nbouet," which are the graves in which they bury their dead. Thoſe in which their chiefs, ſlain in battle, are interred, are decorated with ſpears, darts, paddles, &c. ſtuck upright in the ground about them. Their canoes are made of two trees, hollowed out, having a raiſed gunnel about two inches high, and cloſed at each end with a bulk-head of the ſame height, ſo that the whole reſembles a long ſquare trough about three feet ſhorter than the body of the canoe. Two canoes thus fitted are faſtened to each other about three feet aſunder, by means of croſs-ſpars, which project about a foot over each ſide, and form a platform. Their maſt is fixed at an equal diſtance from the two canoes, and towards the fore-part of the platform, by which they are joined together. On the platform they have a fire-hearth, and generally a fire burning. They are navigated by one or two latteen ſails, extended to a ſmall latteen yard, the end of which is fixed in a notch or hole in the deck. Each canoe has a large ſtone, faſtened to a long rope, which ſerves as an anchor. Theſe canoes, however, are not ſo ſkilfully conſtructed as thoſe of the Friendly iſlands, to which they are much inferior in point of ſailing. As the Caledonians are a warlike people, they are furniſhed with a variety of offenſive weapons, as clubs, ſpears, darts, and ſlings for throwing ſtones. Moſt of theſe iſlanders are armed with ſpears and clubs, and carry at their waiſt a little bag full of ſtones, cut in an oval ſhape, which they throw with ſlings. Their clubs are of different forms; and, as well as their darts and ſpears, are curiouſly carved, neatly conſtructed, and highly poliſhed. Their javelins, which are commonly 15 feet long, are not more than 2½ inches in circumference at the middle. They are peculiarly dextrous in their mode of throwing them, and of accelerating their motion. For this purpoſe they employ a very elaſtic cord, made of the covering of the cocoa-nut, and fiſh-ſkin, one extremity of which they fix to the end of the fore-finger, and the other which terminates in a ſort of round button, is twiſted round the end of the dart, but in ſuch a manner as to quit its hold as ſoon as that weapon is thrown into the air. It is ſomewhat ſurpriſing that they are unacquainted with the uſe of bows and arrows. Their language is different from that of the Friendly iſlands, though ſome of their terms reſemble thoſe uſed by the inhabitants of the other iſlands. D'Entrecaſteaux has annexed a vocabulary of their language. Their vocal muſic, however agreeable to themſelves, is harſh and diſcordant to the ears of Europeans. The only muſical inſtrument, which they ſeem to poſſeſs, is a kind of whiſtle, formed of a little poliſhed piece of brown wood about two inches long, ſhaped ſomewhat like a bell, ſuſpended with a rope fixed at the ſmall end; it has two holes near the baſe, and another near the inſertion of the rope, all which communicate with one another; by blowing in the uppermoſt, a ſhrill ſound, like whiſtling, is produced. Theſe iſlanders ſet leſs value on nails and hatchets than any other inhabitants of the South ſea iſlands. They appeared, however, to be acquainted with iron, for they had a term for expreſſing it; but as they uſed hard ſtones for purpoſes to which iron inſtruments might be applied, this metal was leſs important to them than to ſome of the other iſlanders. The variation of the needle in this iſland was 9° 30′ towards the eaſt. The mercury in the barometer never roſe above 28 inches, 2 lines, and 2-10ths, and never fell below 28 inches, 1 line, and 4-10ths. Notwithſtanding the exceſſive heat which the French voyagers felt on the coaſt, Reaumur's thermometer never exceeded 25°, and on board never roſe above 21°. The tides were not obſervable above once a day; the flood taking place at half paſt ſix, and the waters, riſing in perpendicular height, 4 feet 7 inches. Of the government and religion of the Caledonians nothing is known. Labillardiere's Voyage in ſearch of La Pérouſe.

CALEDONICA, in *Ornithology*, a ſpecies of ARDEA, called by Latham the Caledonian night heron, from its being a native of New Caledonia. The general colour of the plumage is ferruginous, and beneath white: creſt on the hind head of three feathers; frontlet black; eye-brows white.

Obſ. This bird is an inhabitant of various parts of the Auſtralaſian regions as well as New Caledonia. Its length is 22 inches; bill black; area of the eyes green; legs yellow.

CALEFACIENTIA, in *Medicine*, are thoſe ſubſtances which, when taken internally, increaſe the temperature of the body, or produce a ſenſation of local or general warmth. In the language of the preſent day, they are denominated cordials or ſtimulants. They may produce a ſenſation of warmth by their immediate impreſſion on the nerves, without an actual increaſe of temperature; but they alſo tend to accelerate the circulation, and therefore to augment the actual heat. For it has been aſcertained that the animal temperature is generated by the chemical changes which take place in the blood in the courſe of circulation, in conſequence of the abſorption and evolution of different gaſeous fluids. Whenever, therefore, the rapidity of the circulation at large is increaſed by general ſtimulants; or the veſſels of any particular part are, by a local ſtimulus, excited to greater action, and tranſmit a larger proportion of blood; the evolution of heat will neceſſarily be augmented; there will be a ſenſation of warmth in the general ſyſtem, or in the particular parts reſpectively. See STIMULANT and CARDIAC.

CALEFACTION, denotes the production of heat in a body by the action of fire; or the impulſe which the particles of a hot body impreſs on other bodies round it.

The word is particularly uſed in pharmacy; where calefaction is diſtinguiſhed from coction: the firſt being applied where the thing is only heated, without boiling.

CALETTA, or CALLELIA, in *Geography*, a fiſhing village of Catalonia in Spain, 4 leagues from Matara. Its population conſiſts of 886 perſons, and it employs near 50 fiſhing boats.

CALEMUT. See SALAMANIE.

CALENBERG, a principality of Germany, in the circle of Lower Saxony, which takes its name from an ancient caſtle now in ruins, ſituated on the Leine, about 11 miles S. from Hanover. Calenberg is divided into two parts by a portion of the principality of Wolfenbuttle; of which the northern part is ſurrounded by the principalities of Luneburg, the dioceſe of Hildeſheim, the principality of Wolfenbuttle, the counties of Pyrmont, Lippe, Schauenberg, and Hoya, and the principality of Minden; and the ſouth part by the principalities of Wolfenbuttle and Grubenhagen, and the territories of Eichsfeld and Lower Heſſe. This principality conſtitutes a part of the duchy of Brunſwick, and is chiefly formed of counties, lordſhips, and eccleſiaſtical ſtates. The country is in ſome parts mountainous, in ſome marſhy, and in others ſandy, but generally fertile; producing wheat, rye, barley, oats, lentils, peas, beans, vetches, buck-wheat, excellent garden-ſtuff, tobacco, hops, flax, and plenty of good fruit. It has likewiſe foreſts of oak, beech, alder, pine, birch, &c., which afford timber for the building of ſhips and houſes, and alſo wood for fuel and other uſes. It alſo ſupplies large breeds of horſes, black cattle, and ſheep, together with veniſon and fiſh. In ſeveral places are marl-pits, quarries of free-ſtone, and mill-ſtones, with brick-kilns, turf, and coal-pits, rich iron ore, and ſalt-ſprings. It has alſo numerous manufactories of woollen and linen, cotton and ſilk, oil-ſkins and carpets, leather and paper, and ſtone-ware, both for home conſumption and for exportation. Its foreign trade is greatly facilitated by means of the Weſer, and the country where the Leine has been rendered navigable. In this principality are 19 cities, the principal of which are Hanover and Gottingen; 17 market towns, 210 Lutheran parochial churches, 5 Calviniſtic, 6 Catholic, 2 Lutheran abbies, one Catholic monaſtery, 5 Lutheran convents for ladies, and 24,170 taxable hearths. Several of the cities poſſeſs both the civil and criminal juriſdiction, but in theſe appeals lie from the magiſtrate to the upper courts of juſtice. The other cities are entirely dependent on the bailiwick. The ſtates of the country are compoſed of the prelates and nobility, which are divided into three departments: viz. thoſe of Hanover, Gottingen and Hameln, with the department of Lavenau. Theſe ſtates have their ſyndic and other officers, but of the nobility of each department two provincial deputies are elected. This principality has a vote both in the imperial college of princes and the diets of Lower Saxony. Its matricular aſſeſſment is 22½ horſe and 140 foot; or 686 florins. All the rivers in this principality diſcharge themſelves, either into the Leine or the Weſer.

The bailiwick of *Calenburgh* is four German miles in length, and three broad, extending as far as Hanover. The culture of grain and flax is the principal occupation of the inhabitants. In the whole bailiwick are one town, viz. Gehrden, and 60 villages.

CALENDAR, CALENDARIUM, or KALENDAR, a diſtribution of time, accommodated to the uſes of life; or a table, or almanac, containing the order of days, weeks, months, feaſts, &c. happening throughout the year. See ALMANAC, TIME, MONTH, YEAR, &c. It is called *calendar* from the word *calendæ*, anciently wrote in large characters, at the head of each month. See CALENDS.

The days in calendars were originally divided into octoades, or eighths; but afterwards, in imitation of the Jews, into hebdomades, or ſevenths; which cuſtom, Scaliger obſerves, was not introduced among the Romans till after the time of Theodoſius.

There are divers calendars, according to the different forms of the year, and diſtributions of time, eſtabliſhed in different countries. Hence the Roman, the Jewiſh, the Perſian, the Julian, the Gregorian, &c. calendars.

The ancient Roman calendar is given by Ricciolus, Struvius, Danet, and others; by which we ſee the order and number of the Roman holy-days, and work-days.

The three Chriſtian calendars are given by Wolfius in his Elements of Chronology.

The Jewiſh calendar was fixed by rabbi Hillel, about the year 360, from which time the days of their year may be reduced to thoſe of the Julian calendar.

CALENDAR, *the Roman,* owed its origin to Romulus; but it has undergone various reformations ſince his time. That legiſlator diſtributed time into ſeveral periods, for the uſe of the people under his command: but as he was much better verſed in matters of war than of aſtronomy, he only divided the year into ten months, making it begin in the ſpring, on the firſt of March: imagining the ſun made his courſe through all the ſeaſons in three hundred and four days. According to Plutarch, (in Numa,) theſe months had no certain or equal number of days, ſome conſiſting of 20, ſome of 35, and ſome of more. But Macrobius informs us, (Saturn. l. i. c. 12.) that Romulus ſettled the number of days with greater equality, allotting to March, May, Quintilis, and October, 31 days; and to April, June, Sextilis, September, November, and December, 30; making up in all 304 days. From a paſſage in Plutarch, (ubi ſupra,) it appears, that two intercalary months were added to every year; for he ſays, that the Latins, not underſtanding the difference between the ſolar and lunar years, nevertheleſs provided, that the year ſhould contain 360 days. But theſe intercalary months were not inſerted in the calendar. To theſe no names were affixed until the ſucceeding reign.

The calendar of Romulus was reformed by Numa, who, at firſt, intended to make a complete lunar year of 354 days. With this view, he added 50 days to the 304, which had been divided into 10 months. From every one of the months of 30 days, he borrowed one day, which he added to the 50 already mentioned: of theſe 56 days he compoſed two months, calling the one January, and the other February. Not long afterwards, he added one day to January; and thus made his year to conſiſt of 355 days; adding one odd day more than he ought to have done, merely out of ſuperſtition, to make the number fortunate. However, he would not allow more than 28 days for February; and therefore, that month was always accounted unlucky. Moreover, he transferred the beginning of the year from March to January, reckoning March the ſecond, April the third, &c.; placing February in the end of the calendar. (Ovid. Faſt. l. ii. v. 47.) In order to adjuſt the lunar year to the ſolar, he added 90 days in eight years; becauſe the latter is 11¼ days greater than the former, and $11\frac{1}{4} \times 8 = 90$. Of theſe 90 days four months were compoſed, conſiſting of 22 and 23 days alternately; and one was intercalated every two years; i. e. to the ſecond year 22 days were added; to the fourth 23 days; to the ſixth 22 days; and to the eighth 23 days; in all 90 days. The intercalary month formed of theſe days was called "Mercedinus," or "Mercedonius," from the Latin word "merces," ſignifying wages, probably, becauſe this time was appointed for the payment of workmen and domeſtics; and it was inſerted after the 23d of February; and the remaining five days of that month were ſubjoined. By theſe intercalations, the quantity of the year became too great; and the exceſs in eight years amounted to $8^{d}\,1^{h}\,29'\,56''$ nearly. To cut off this exceſs, it was propoſed, in every third octennial period, that is, from 16 to 24 years, to inſert not 90, but 66 days, or three months of 22 days, a quantity ſtill too great by $4^{h}\,28'\,20''$; but ſufficiently accurate for all the purpoſes of common life. The year of Numa admitted of no alteration until the year B. C. 452, when the decemviri changed the order of the months, reckoning January the firſt, February the ſecond, March the third, &c. This arrangement has never been diſturbed.

However, the intercalations above-mentioned being ill obſerved by the pontiffs, to whom Numa committed the care of them, occaſioned great diſorders in the conſtitution of the year, which Julius Cæſar, with the advice and aſſiſtance of Soſigenes, a celebrated mathematician of Alexandria in Egypt, undertook to rectify, A. U. C. 708. B. C. 46. He found that the months had conſiderably receded from the ſeaſons to which they had been adjuſted by Numa, and that the diſpenſation of time in the calendar could never be ſettled on any ſure footing, without having regard to the annual courſe of the ſun. In order to bring forward the months to their proper places, he took into the account 90 days which had been loſt by the former method of reckoning, and formed a year of 15 months, or 445 days, which, on account of its quantity and deſign, has been called “the year of confuſion.” This year terminated, and the Julian year commenced on the 1ſt day of January, B. C. 46. From this epoch, the civil year and months were regulated by the courſe of the ſun. The year of Numa being 10 days ſhorter than the ſolar year, two days were added by Julius Cæſar to each of the months of January, Auguſt, and December, and one to April, June, September, and November. Moreover, as the annual revolution of the ſun is completed in 365 days, and about ſix hours, he made the year to conſiſt of 365 days for three years ſucceſſively, and every fourth year, of 366, in order to comprehend the odd ſix hours. Accordingly, he ordained, that an intercalary day ſhould be added every fourth year, to the 23d of February; that is, the 24th day, or ſixth of the calends of March, was to be twice reckoned; and hence this year was called *Biſſextile*, which ſee. It is alſo ſtyled “Leap-year,” from its leaping a day more that year, than in a common year. Hence it appears, that the Roman, called alſo the *Julian Calendar*, from its reformer Julius, is diſpoſed into quadriennial periods; of which the firſt three years, which he called *communes* or common, conſiſt of 365 days; and the fourth *biſſextile*.

The regulations which Julius Cæſar had eſtabliſhed were miſapplied by thoſe who had the direction of the calendar. They intercalated every third, inſtead of every fourth year; ſo that, in the interval of 36 years, three days more than the due number were inſerted. This error, however, was ſoon perceived. For the correction of it, Auguſtus ordained, that the intercalations ſhould be omitted in the following years; viz. in the 41ſt, 45th, and 49th of the Julian æra. This form of the year, thus corrected, was adopted in Italy, and in ſeveral other provinces of the Roman empire. By ſome nations, the lunar year was retained, and the days and months were reckoned by the courſe of the moon. Modern chronologers have uſed the Julian year, being a meaſure of time extremely ſimple, and ſufficiently accurate: and to this ſtandard they refer all events that have happened from the beginning of the world.

The Julian year, however, though admirably adapted to common uſe, was ſtill imperfect: for as the time in which the ſun performs his annual revolution is not exactly 365 days ſix hours, but 365 days five hours, 48 minutes, and 45½ ſeconds, the civil year muſt therefore have exceeded the ſolar year by 11 minutes, 14½ ſeconds; which, in the ſpace of about 130 years, amounted to a whole day; and conſequently, in 47450 years, the beginning of the year would have advanced forwards through all the ſeaſons; and in half this interval of time, the ſummer ſolſtice according to the calendar, would have fallen in the midſt of winter, and the earth have been covered with froſt, when the bloom of vegetation was expected. It cannot be imagined that Soſigenes was totally unacquainted with this error: though he probably thought it much ſmaller than it is, and therefore neglected it. Among the firſt of thoſe who diſcovered the imperfections of the Julian calendar, were the venerable Bede, about the year 730, Johannes de Sacro Boſco, about 1232, and Friar Bacon, about 1255. Theſe great men had obſerved, that the true equinox preceded the civil one by about a day in 130 years. Soſigenes, in the reign of Julius Cæſar, had obſerved the vernal equinox on the 25th day of March. At the council of Nice, held in 325, it was fixed on the 21ſt of March; and from that time to the year 1582, when the next reformation was effected, the error, accumulated by this means, amounted to about 10 days; ſo that the vernal equinox was now found to happen on the 11th of March, inſtead of the 21ſt, as it ought to have done, if the Julian account had agreed with the courſe of the ſun. This conſtant anticipation of the equinox, which, in the courſe of more than a thouſand years, had become too conſiderable not to be noticed, was firſt repreſented to the councils of Conſtance and Lateran, by two cardinals, Petrus ab Alliaco, and Cuſa, who ſhowed the cauſe of the error, and the means of correcting it. In the year 1474, pope Sixtus IV. being convinced of the neceſſity of a reformation, ſent for Regiomontanus, a celebrated mathematician of that period, to Rome, and preſented him to the archbiſhopric of Ratiſbon, in order to engage him in this undertaking. But a premature death preventing his aſſiſtance, and no one being thought worthy to be his ſucceſſor, the project was, for that time, ſuſpended. Although the neceſſity of ſome alteration was acknowledged, it was after the lapſe of 100 years, that pope Gregory XIII. had the honour of accompliſhing what ſeveral preceding pontiffs and councils had attempted in vain. He invited to Rome a conſiderable number of mathematicians and aſtronomers, employed 10 years in the examination of their ſeveral formulæ, and, finally, gave the preference to the plan propoſed by Aloiſius and Antoninus Lilius, two brothers of Verona. He tranſmitted copies of this plan, A. D. 1577, to all catholic ſtates, academies, &c. A council of the moſt learned prelates was convened by the pope, and the ſubject being finally ſettled, a brief was publiſhed in the month of March, A. D. 1582, by which the uſe of the ancient calendar was entirely abrogated, and the new one ſubſtituted in its ſtead, called, from the pope's name, the GREGORIAN CALENDAR, or NEW STYLE.

The firſt object of the reformers was to correct the errors of the former method of reckoning, and to make the length of the year agree more exactly with the courſe of the ſun. For this purpoſe it was agreed, that the 10 days which had been gained by the old account, ſhould be taken from the month of October of the year then current, and the equinox brought back to the 21ſt of March, as it had been ſettled by the council of Nice. And, in order to prevent the future recurrence of a ſimilar variation, it was ordered, that, inſtead of making every hundredth year a biſſextile, as was the caſe in the former method, every four-hundredth year only ſhould be conſidered as a biſſextile, and the reſt be reckoned as common years. The length of the ſolar year, and the time of the vernal equinox, were by theſe means very accurately ſettled; for as a day was gained by the former method of reckoning, in every interval of 130 years, this was nearly equivalent to a gain of three days in every interval of 400 years; and, conſequently, by making the years 1700, 1800, and 1900, to be common years, inſtead of leap-years, the error ariſing from the odd time would be properly corrected. The great difficulty, however, conſiſted in making the lunar year agree with the ſolar one, and in ſettling the true time for the obſervance of Eaſter, and other moveable feaſts, which had been ſubject to no fixed rule. It had been ordered by the council of Nice, that Eaſter ſhould be celebrated upon the firſt Sunday after the firſt full moon, following the vernal equinox. And, in order to the due obſervance of this rule, it became neceſſary to know the days when the full moons would happen, in the courſe of every year. But this knowledge was not eaſily obtained; for the period of Meton, which made 19 years exactly equal to 235 lunations, or revolutions of the moon, was found to be too long by about one hour and thirty-two minutes; and, conſequently, after 16 of theſe periods, the true phaſes of the moon would precede thoſe ſhewn by the calendar, by more than a whole day. At the time when the Gregorian Calendar was firſt introduced, the error thus occaſioned amounted to four days; and if the old method of computation had continued, the calendar, in time, would have announced the full moon at the time of the change, and Eaſter would have been celebrated at a period directly oppoſite to that eſtabliſhed by the church. It was neceſſary, therefore, to deviſe ſome method for correcting theſe errors; and Lilius was ſo fortunate as to diſcover, that the 19 years or cycle of Meton had a particular property, which would render it ſubſervient to the purpoſes required. The new and full moons, which according to Meton, were imagined to happen at the ſame time preciſely as they had occurred 19 years before, were uſually indicated in the following manner: they obſerved on what day of each calendar month the new moon fell in each year of this period, and againſt thoſe days they placed the number anſwering to that year, reckoning from 1 to 19, through all the years of the cycle. Theſe numbers were called "Primes," or, "Golden Numbers" (which ſee); but as Lilius found them to be erroneous and inconvenient, he rejected them from his ſyſtem, and made uſe of others, called "Epacts," in their ſtead. See Epact. Theſe epacts, being placed againſt the days of the month in the calendar, on which the new moons fell in each year, would have anſwered the ſame purpoſe with the golden numbers; and if the Metonic cycle had been complete, the form would have required no alteration: but this is not the caſe, for after about 16 of theſe periods, or 300 years, the new moons arriving ſooner by 24 hours, would happen on the preceding day; and, therefore the epacts anſwering to thoſe new moons ought to be augmented by unity. For, ſuppoſing that the ſecond year of the lunar cycle had 11 for the epact, then, becauſe the new moon, in the preceding year, arrived 11 days before the end of December, after 300 years, the ſame new moon, of the firſt year of the cycle, would arrive 12 days before the end of the year; and, conſequently, the ſecond year ought now to have 12 for the epact. This number 12, therefore, will be the index of the new moons in that ſecond year; and it is eaſy to perceive, that all the new moons which happen ſooner by a day will take place upon the day preceding that which in the former period was marked 11. After 300 years more, the epact will be 13, which will be a day ſtill preceding that in the latter period: and the ſame will happen with all the other epacts of the cycle. It was this kind of analyſis that ſuggeſted to Lilius the idea of placing the epacts in their natural order againſt the days of the new moons in every year, for the firſt 300 years; and after that period, to place them in the order 1, 12, 23, 4, 15, 26, 7, 18, 29, 10, &c. inſtead of the former one; and ſo on.

This arrangement was ſimple and ingenious; but the omiſſion of 3 days in every 400 years was a circumſtance that occaſioned ſome embarraſſment. Theſe years having a day leſs than in the Julian account, the new moons would happen a day later, and conſequently, the epact, at the end of the year, muſt be diminiſhed accordingly. But, as this order is only interrupted once in 100 years, Lilius imagined, that by ſubtracting unity from each of the epacts belonging to thoſe new moons, they might be made to ſerve for the ſubſequent century. And as there are only 30 poſſible ſeries of theſe numbers, it was ſufficient to ſhew by a table, what ſeries belonged to every century, by which the times of the new moons might be readily diſcovered.

When pope Gregory had reformed the calendar in the manner above ſtated, he ordered all the eccleſiaſtics under his juriſdiction to conform to this new method of reckoning, and exhorted the Chriſtian princes to adopt it in their dominions. Accordingly it was immediately introduced into all catholic countries. In Spain, Portugal, and part of Italy, it was received on the ſame day as at Rome; but it was not admitted in France until the month of December, when the 10th was reckoned the 20th day, according to letters patent of king Henry III. dated the 3d of November preceding. The catholic ſtates in Germany adopted the Gregorian calendar, A. D. 1583. But the proteſtant ſtates at that time refuſed it. The reformed religion was in its infancy; the zeal of its profeſſors was violent, and their oppoſition to the pope unbounded. Whatever bore the appearance of his authority was rejected as an unwarrantable encroachment upon their newly-acquired liberties; and though the propriety of the alteration was acknowledged, it was condemned on account of its originating with a party ſo extremely obnoxious to them. Hence aroſe a difference of 10 days between the methods of reckoning afterwards uſed in Catholic and Proteſtant countries. When a biſſextile was ſuppreſſed, the difference amounted to 11 days. This difference between the old and new ſtyle, as the Julian and Gregorian accounts are generally called, occaſioned great confuſion in the commercial affairs of the different ſtates of Europe; and therefore the Gregorian ſtyle was, at length, generally received. The Proteſtant ſtates in Germany reformed their calendar in Feb. A. D. 1700. The new ſtyle was introduced into Denmark about the ſame time; and into Sweden, March 1753. In Great Britain the inconvenience ariſing from theſe two modes of reckoning was much felt, and ſeveral attempts were made to introduce the reformed calendar. But popular prejudices were for a long time too obſtinate to be eaſily overcome. The mathematicians, indeed, more influenced by ſcientific conſiderations than by cavils about points of religion, inceſſantly urged the neceſſity of ſome correction, and propoſed various methods of effecting it, which might be adopted without inflaming the minds of the multitude. Among others it was propoſed, that an act ſhould be paſſed, declaring that there ſhould be no leap-year for 40 years to come, by which means, the 10 days that had been gained by the old account would have been imperceptibly loſt, and the old ſtyle reduced to the new, without any ſenſible variation in the fixed times of feaſts and other obſervances. A propoſal of this kind was ſent to Dr. Wallis, profeſſor of geometry at Oxford, for his opinion; but the doctor, with a degree of prejudice altogether inconſiſtent with his extenſive erudition, obſerved, that the propoſal was ſpecious enough in appearance; but that the hand of Joab might be perceived in it. He imagined it to have originated with the papiſts; and though he acknowledged the propriety of it, he was afraid of its being adopted, leſt it ſhould open the door to further encroachments. But though all propoſals were at that time rejected, thoſe who wiſhed for a reformation ſtill renewed their applications; and in 1752, an act of parliament, after much debate, was obtained for this purpoſe. As 170 years had elapſed ſince the Gregorian alteration took place, the old ſtyle had conſequently gained above a day more upon the courſe of the ſun than it had at that time: it was therefore enacted, that, inſtead of cancelling 10 days, as the pope had done, 11 days ſhould be left out of the month of September; and, accordingly, on the 2d day of that month, the old ſtyle ceaſed, and the next day, inſtead of being the third, was called the 14th. See Style. By the ſame act, the beginning of the year was changed from the 25th of March to the 1ſt of January. Ruſſia is the only civilized ſtate of Europe that now retains the old ſtyle.

Calendar, *Julian Chriſtian*, is that wherein the days of the week are determined by the letters A, B, C, D, E, F, G, by means of the ſolar cycle; and the new and full moons, eſpecially the paſchal full moon, with the feaſt of Eaſter, and the other moveable feaſts depending thereon, by means of golden numbers, rightly diſpoſed through the Julian year. See the preceding article. See alſo Cycle, and *Golden* Number.

Calendar, *Gregorian*, is that which, by means of epacts, rightly diſpoſed through the ſeveral months, determines the new and full moons, and the time of Eaſter, with the moveable feaſts depending thereon, in the Gregorian year. The Gregorian calendar, therefore, differs from the Julian, both in the form of the year, and in that epacts are ſubſtituted in lieu of golden numbers; for the uſe and diſpoſition whereof, ſee Epact.

Though the Gregorian calendar be preferable to the Julian, yet it is not without its defects (perhaps, as Tycho Brahe and Caſſini imagine, it is impoſſible ever to bring the thing to a perfect juſtneſs). For, firſt, the Gregorian intercalation does not hinder but that the equinox ſometimes ſucceeds the 21ſt of March, as far as the 23d; and ſometimes anticipates it, falling on the 19th; and the full moon, which falls on the 20th of March, is ſometimes the paſchal; yet not ſo accounted by the Gregorians. On the other hand, the Gregorians account the full moon of the 22d of March the paſchal; which yet, falling before the equinox, is not paſchal. In the firſt caſe, therefore, Eaſter is celebrated in an irregular month; in the latter, there are two Eaſters in the ſame eccleſiaſtical year. In like manner, the cyclical computation being founded on mean full moons, which yet may precede or follow the true ones by ſome hours, the paſchal full moon may fall on Saturday, which is yet referred by the cycle to Sunday; whence, in the firſt caſe, Eaſter is celebrated eight days later than it ſhould be, in the other, it is celebrated on the very day of the full moon, with the Jews and Quartodeciman heretics, contrary to the decree of the council of Nice. Mæſtlin, Vieta, Scaliger, Calviſius, and other mathematicians, ſhew other faults in the Gregorian calendar, ariſing from the negligence and inadvertency of the authors.

Clavius, to whom the conduct of this buſineſs was aſſigned, after the death of Lilius, compoſed in 1603 a large work in vindication of it, and ſucceſsfully combated its adverſaries. Defects, it is acknowledged, are to be found in this calendar; but the reformers deſerve praiſe for what they actually did, in an undertaking which does not admit of perfection. Dr. Playfair, in his "Syſtem of Chronology," p. 19, obſerves, that the method of intercalation uſed in the Gregorian calendar is not the moſt accurate. Ninety-ſeven days, or 100-3, are inſerted in the ſpace of four centuries. This ſuppoſes the tropical year to conſiſt of 365^d, 5^h, $49'$, $12''$. On this ſuppoſition, the interpolation would be exact, and the error would ſcarcely exceed one day in 268,000 years. But the reformers of the calendar made uſe of the Copernican year of 365^d, 5^h, $49'$, $20''$. Inſtead, therefore, of inſerting 97 days in 400 years, they ought to have added, at proper intervals, 41 days in 169 years, or 90 days in 371 years, or 131 in 540 years, &c.

Recent obſervations have determined the quantity of the tropical year to be 365^d, 5^h, $48'$, $45\frac{1}{2}''$. Admitting this to be the true quantity of it, the intercalations ought to be made as follows:

$$\overset{+}{\frac{4}{1}},\ \overset{-}{\frac{17}{4}},\ \overset{+}{\frac{33}{8}},\ \overset{-}{\frac{128}{31}},\ \overset{+}{\frac{545}{132}},\ \overset{+}{\frac{673}{163}},\ \overset{+}{\frac{801}{199}},\ \overset{+}{\frac{929}{225}},\ \overset{+}{\frac{1057}{256}},$$

$$\overset{+}{\frac{1185}{287}},\ \overset{+}{\frac{1313}{318}},\ \overset{-}{\frac{1441}{349}},\ \overset{-}{\frac{2754}{667}},\ \overset{-}{\frac{4067}{985}},\ \overset{+}{\frac{9447}{2288}},\ \overset{-}{\frac{51302}{12425}},$$

$$\overset{+}{\frac{60749}{14713}},\ \overset{-}{\frac{172800}{41851}};$$

that is, one day ought to be intercalated in the ſpace of 4 years, or rather 4 days in 17 years, or 8 days in 33 years, &c. If 41,851 days were intercalated in 172,800 years, there would be no error. The ſigns + and — indicate, that the number of intercalary days above which they are placed is too great or too ſmall. Every ſucceeding number is more accurate than that which goes before. As this method of interpolation is different from that now in uſe, it is obvious that the Gregorian calendar muſt be corrected after a certain period of years. The correction, however, will be inconſiderable for many ages, as it will amount only to a day and a half, which is to be ſuppreſſed in the ſpace of 5000 years.

Calendar, *reformed* or *corrected*, is that which, ſetting aſide all apparatus of golden numbers, epacts, and dominical letters, retrenches 11 days from the calendar, and determines the equinox, with the paſchal full moon, and the moveable feaſts depending thereon, by aſtronomical computation, according to the Rudolphine tables of Kepler, agreeably to the firſt council of Nice. The perſon who projected this plan was Erhard Weigel.

Upon the death of Weigel in 1699, the project was ſubmitted by the diet to the conſideration of Sturmius, profeſſor of mathematics at Altdorff; Hamberger, profeſſor at Jena; and Meyer, profeſſor at Ratiſbon. In conſequence of their report, this calendar was introduced among the proteſtant ſtates of Germany, in the year 1700, when 11 days were at once thrown out of the month of February; ſo that in 1700, February had but 18 days; by this means the corrected ſtyle agrees with the Gregorian. This alteration in the form of the year they admitted for a time, in expectation that the real quantity of the tropical year being at length more accurately determined by obſervation, the Romaniſts would agree with them on ſome more convenient intercalation.

Calendar, *French* or *Republican*. Soon after the government was changed in France, it was decreed on the 2d of January 1792, that this year ſhould be denominated the fourth of liberty on their coins, and in their acts. After the death of Louis XVI. in 1793, it was determined that this year ſhould be called the firſt of the republic, and this ſuggeſted the idea of a republican calendar. Accordingly, on the 12th of January, 1793, the deputy Romme, preſident of the committee of public inſtruction under the convention, applied to the Academy of Sciences for a commiſſion to deliberate on this ſubject; but M. de la Lande proteſted againſt the change of the calendar. He was obliged, however, to acquieſce, and to prepare a new calendar. After the example of the Egyptians, he preferred 12 equal months, with five intercalary days, and he adapted their denominations to the climate of Paris, which Fabre d'Eglantine expreſſed by the following terms, viz. *Vendemiaire*, or vintage month; *Brumaire*, or foggy month; *Frimaire*, or ſleety month; *Nivoſe*, or ſnowy month; *Pluvioſe*, or rainy month; *Ventoſe*, or windy month; *Germinal*, or budding month; *Floreal*, or flowery month; *Prairial*, or meadow month; *Meſſidor*, or harveſt month; *Thermidor*, or hot month; and *Fructidor*, or fruit month. The firſt month begins September 23; the ſecond, October 23; the third, November 22; the fourth, December 23; the fifth January 21; the ſixth, February 20; the ſeventh, March 22;

the eighth, April 21; the ninth, May 21; the tenth, June 20; the eleventh, July 20; and the twelfth, Auguſt 19; making in all 360 days. The remaining five days are called the complementary days; of which the firſt is the 18th of September; the ſecond the nineteenth; the third, the 20th; the fourth the 21ſt; and the fifth, the 22d of September, being the laſt day of the French year.

The firſt decree was iſſued the fifth of October 1793; and it was followed by another on the 24th of November, or the 4th of Frimaire, in the ſecond year of the republic, ſettling the commencement and organization of the year, and the names of the days and months. The decree of the national convention comprehends four articles, viz. That the French æra ſhould be reckoned from the foundation of the republic, September 22, 1792, of the vulgar æra, on the day when the ſun arrived at the true autumnal equinox, in his entrance into the ſign Libra, at 9ʰ 18′ 30″ in the morning, according to the obſervatory at Paris; that the vulgar year ſhould be aboliſhed in all civil concerns: that each year ſhould commence at midnight, with the day on which the true autumnal equinox falls, according to the obſervatory at Paris: and that the firſt year of the French republic had actually commenced at midnight of the 22d of September, 1792, and terminated at midnight, between the 21ſt and 22d of September, 1793. The decree for adopting a rule of intercalation, in order to preſerve the ſeaſons at the ſame epochas of the year, compriſes the following four articles: viz. that the fourth year of the republican æra ſhould be the firſt ſextile; that it ſhould receive a ſixth complementary day; and that it ſhould terminate the firſt franciade: that the ſextile, or leap years, ſhould ſucceed one another every four years, and mark the end of each franciade: that the four following ſecular years in ſucceſſion ſhould be excepted from the laſt article; namely, the firſt, ſecond, and third, ſecular years 100, 200, 300, which ſhould be common; and that the fourth ſhould be ſextile; and that this ſhould be the caſe every four centuries until the 40th, which ſhould cloſe with a common year, the year 4000.

In this new calendar or almanac, the months conſiſt of 30 days each, and are divided into three decades. The days of each decade are known by the names of *Primidi, Duodi, Tridi, Quartidi, Quintidi. Sextidi, Septidi, Octodi, Nonodi*, and *Decadi*. The day, which begins at midnight, is diſtributed into ten parts, and theſe are decimally divided and ſubdivided. To the five ſupernumerary days in common years, and ſix in leap years, was applied the abſurd appellation of *Sans Culottides*, borrowed from a term of reproach (*Sans Culotte*), which had been originally beſtowed on the republican party, on account of the meanneſs of their rank and fortune; but which the ſame party afterwards attempted to render honourable and popular; and this appellation alſo ſerves to diſtinguiſh the leap years.

TABLES for reducing the Dates of the new French Calendar to the Dates of the Gregorian Calendar.

TABLE I.

Of the new French Calendar compared with the Gregorian Calendar for 40 *years; that is from* 1802 *to* 1842.

Years of the Republic.	Gregorian Year.	Franciade.		Commencement of the French Year.		
				Year.	Sept	Autumnal Solſtice
11	1802 03	4	s	1802	23	7 h. 15′10″ a
12	1803-04 b	1		1803	24	1 3 59 m
13	1804-05	2	iv	1804 b	23	7 52 48 m
14	1805-06	3		1805	23	0 41 37 a
15	1806-07	4	s	1806	23	6 30 26 a
16	1807-08 b	1		1807	24	0 19 15 m
17	1808-09	2	v†	1808 b	23	6 8 4 m
18	1809-10	3		1809	23	11 56 53 m
19	1810-11	4		1810	23	5 45 42 a
20	1811-12 b	5	s	1811	23	11 34 33 a
21	1812-13	1		1812 b	23	5 23 20 m
22	1813-14	2	vi	1813	23	11 12 9 m
23	1814-15	3		1814	23	5 0 58 a
24	1815-16 b	4	s	1815	23	10 49 47 a
25	1816-17	1		1816 b	23	4 38 36 m
26	1817-18	2	vii	1817	23	10 27 25 m
27	1818-19	3		1818	23	4 16 14 a
28	1819-20 b	4	s	1819	23	10 5 3 a
29	1820-21	1		1820 b	23	3 53 52 m
30	1821-22	2	viii	1821	23	9 42 41 m
31	1822-23	3		1822	23	3 31 30 a
32	1823-24 b	4	s	1823	23	9 20 19 a
33	1824-25	1		1824 b	23	3 9 8 m
34	1825-26	2	ix	1825	23	8 53 57 m
35	1826-27	3		1826	23	2 42 46 a
36	1827-28 b	4	s	1827	23	8 31 35 a
37	1828-29	1		1828 b	23	2 20 24 m
38	1829-30	2	x	1829	23	8 9 13 m
39	1830-31	3		1830	23	1 58 2 a
40	1831-32 b	4	s	1831	23	7 46 51 a
41	1832-33	1		1832 b	23	1 35 40 m
42	1833-34	2	xi	1833	23	7 24 29 m
43	1834-35	3		1834	23	1 13 18 a
44	1835-36 b	4	s	1835	23	7 2 7 a
45	1836-37	1		1836 b	23	0 50 56 m
46	1837-38	2	xii	1837	23	6 39 45 m
47	1838-39	3		1838	23	0 28 4 m
48	1839-40 b	4	s	1839	23	6 17 2 m
49	1840-41	1		1840 b	23	0 6 12 m
50	1841-42	2	xiii †	1841	23	5 55 1 m
51	1842-43	3		1842	23	11 43 50 m
	&c.			&c.	23	&c.

b ſignifies *biſſextile*, or leap-year—s *ſextile*, or French leap-year — c common year of 365 days — m morning — a afternoon.

The French decree does not determine the proper rule for fixing the leap-year: the neceſſity for determining this rule will happen in 1811. The moſt convenient method appears to be the common one, when after 7 Franciades of 4 years, a Franciade of 5 years occurs: according to this regulation, the 5th and 13th Franciades are of 5 years each. The *Bureau des Longitudes* will doubtleſs aſcertain this point with more accuracy.

TABLE II. *By means of which the firſt day of each month of the new French Calendar is made to correſpond with that of the common Calendar.*

Argument from Table I.												First Intercalary Day.
1 *Vendemiaire.*	1 *Brumaire*	1 *Frimaire*	1 *Nivoſe*	1 *Pluvioſe*	1 *Ventoſe*	1 *Germinal*	1 *Floreal*	1 *Prairial*	1 *Meſſidor*	1 *Thermidor*	1 *Fructidor*	
22 September	22 October	21 Novemb.	21 Decemb.	20 January	19 February	21 March *	20 April *	20 May *	19 June *	19 July *	18 Auguſt *	17 Sept. *
23 —	23 —	22 —	22 —	21 —	20 —	22 — *	21 — *	21 — *	20 — *	20 — *	19 — *	18 — *
24 —	24 —	23 —	23 —	22 —	21 —	23 — *	22 — *	22 — *	21 — *	21 — *	20 — *	19 — *

* When a Gregorian leap-year occurs, one day muſt be ſubtracted from all thoſe days in the year which are marked with aſteriſks.

TABLE III. *By means of which the firſt day of each month of the common Calendar is made to correſpond with the firſt day of the French Calendar.*

Argument from Table I.	The Argument is always the firſt day of the French year, which falls in the preceding Gregorian year, taken from Table I.									The Argument is here the commencement of the year in the foregoing Gregorian year.		
			When a leap-year occurs, one day muſt be ſupperadded to each of the following days.									
	1 January	1 February	1 March	1 April	1 May	1 June	1 July	1 Auguſt	1 September	1 October	1 November	1 December
22 September	12 *Nivoſe*	13 *Pluvioſe*	11 *Ventoſe*	12 *Germinal*	12 *Floreal*	13 *Prairial*	13 *Meſſidor*	14 *Thermidor*	15 *Fructidor*	10 *Vendem.*	11 *Brumaire*	11 *Frimaire*
23 —	11 —	12 —	10 —	11 —	11 —	12 —	12 —	13 —	14 —	9 —	10 —	10 —
24 —	10 —	11 —	9 —	10 —	10 —	11 —	11 —	12 —	13 —	8 —	9 —	9 —

* The French have aboliſhed their new calendar, and reſtored the Gregorian, which is uſed in all their dates after the 1ſt of January, 1806.

Calendar, *Perſian*, is founded on the Perſian æra, called "Yezdegerd," or "Jezdegerd," which derives its name from the laſt king of the race of Saſſanians, or 5th dynaſty, that reigned in Perſia. Some ſuppoſe the ancient Perſian æra to have been eſtabliſhed by Gemſhid, one of the Piſhdadian kings, about 800 B. C. On the day when the ſun entered Aries, he is ſaid to have made his public entry into Perſepolis, which he had juſt finiſhed, and to have ordained the æra to commence from that time, in honour of the ſun, and in commemoration of the building of his capital city. He divided the year into 12 months of 30 days each; to the laſt of which five ſupplementary days were added. But no attention was beſtowed on the odd quarter of a day, till aſtronomers, in the reign of Yezdegerd, obſerving that the beginning of the year had moved in a retrograde direction from Aries to Piſces, corrected this error, and appointed one month to be inſerted at the end of every 120 years, and the intercalary month of 30 days reſtored the integrity of the ſolar year. By this reformation of the calendar a new æra was produced, which is ſtill adopted in many parts of Perſia. All, however, do not agree in the epocha of its commencement. Some refer the date of it to the beginning of Yezdegerd's reign, which they place on the 16th of June, in the 11th year of the Hegira, A. D. 1632. Of this opinion are Ulugh Beigh and Herbelot (Bib. Orient.) Others compute from the time of his defeat by the Arabs at Cadeſia, A. D. 636. Some few reckon from his death, A. D. 651 or 652, among whom are Alfraganius, Scaliger, &c. The beſt modern chronologers have adopted the firſt of theſe opinions, which is moſt conformable to the teſtimony of the eaſtern writers. In vindication of which it may be obſerved, that Yezdegerd had lived as a private perſon, as his father had always done, till the Perſians, underſtanding how juſt a title he had to the kingdom, ſet him upon the throne. The Arabs ſay, this was done with the conſent of their caliph, who therefore regarded him as his tributary, reckoning the kingdom of Perſia among the reſt of his dominions from this time, and conſidering the ſubſequent reduction of that country not as a conqueſt, but as the re-union of that part of his empire which had been ſevered from it by a rebel. This is plainly the cauſe why the commencement of this æra is and ought to be fixed at the acceſſion of Yezdegerd. The years of this æra are Nabonaſſarean; for each year conſiſts of 365 days, or 12 months of 30 days each, with the addition of five intercalary days to the month Aban, or to the end of the year.

Beſides this form of the year, Perſian aſtronomers uſe the Gelalæan year, ſo called on account of the title "Gelaleddin," which was conferred on Malekſchah, ſultan of Khoraſm. This great prince, A. D. 1074, aſſembled the moſt celebrated aſtronomers of his time, in order to reform the calendar, which he found imperfect, to aſcertain the vernal equinox for aſtronomical purpoſes, and for the regulation of their ſolemn feſtival "Neuruz," or new-day, and to change the order of the months, under the idea of reſtoring the ancient mode fixed by Gemſhid. The year, as he reformed it, was twofold, civil and aſtronomical. He fixed the beginning of both on the 14th of March, the ſeaſon of the equinox, A. D. 1074, or, according to Zacuti, a Jewiſh author, A. D. 1079. In the correction of the civil year, beſides five intercalary days, in every fourth year he added, ſix or ſeven times in ſucceſſion, a ſixth day; after which the intercalation was not to occur more frequently than once in five years. The Perſian aſtronomical year was of the ſame form, and nearly of the ſame quantity with the ſolar tropical year; for it conſiſted of $365^{d}\ 5^{h}\ 49'\ 53''$. From theſe frequent reformations of the Perſian calendar, there has ariſen no ſmall diſagreement among different writers with regard to the ſeaſons and days when ſeveral feſtivals were to be celebrated, which it would be difficult to reconcile. Playfair's Chronology, p. 55. See Epocha and Year.

Calendar, *conſtruction of a*, or *almanac*. See Almanac.

Calendar is alſo applied to divers other compoſitions reſpecting the twelve months of the year.

In this ſenſe, Spencer has given the ſhepherd's calendar, Evelyn and Miller the gardener's calendar, &c.

Calendar is uſed for the catalogue, or faſti, anciently kept in each church, of the ſaints, both univerſal, and thoſe particularly honoured in each church; with their biſhops, martyrs, &c. Calendars are not to be confounded with martyrologies, for each church had its peculiar calendar; whereas the martyrologies regarded the whole church in general; containing the martyrs and confeſſors of all the churches. From all the ſeveral calendars were formed one martyrology; ſo that martyrologies are poſterior to calendars. See Martyrology.

Calendar is alſo extended to an orderly table, or enumeration of perſons or things. Lord Bacon wiſhes for a calendar of doubts. A late writer has given a calendar of the perſons who may inherit eſtates in fee-ſimple.

Calendar, *Kalendarium*, originally denoted among the Romans a book containing an account of monies at intereſt, which became due on the calends of January; the uſual time when the Roman uſurers let out their money. Senec. de Benef. lib. vii. c. 10. Idem. lib. i. c. 2. Ejuſd. Epiſt. 14. Idem. Ep. 87. Fab. Theſ. p. 413.

Calendar *months*, the ſolar months as they ſtand in the calendar, viz. January 31 days, &c.

The number of days in each month may be ſuggeſted to the memory by the following canon:

"Thirty days hath September,
April, June, and November,
February has twenty-eight alone,
And all the reſt have thirty-one."

Calendar, *aſtronomical*, an inſtrument engraved upon copper-plates printed upon paper, and paſted on board, with a braſs ſlider which carries a hair, and ſhews by inſpection the ſun's meridian altitude, right aſcenſion, declination, riſing, ſetting, amplitude, &c. to a greater exactneſs than our common globes will ſhew.

Calendar *of priſoners*, is a liſt of all their names, with their ſeparate judgments in the margin, which the judge ſigns, and the execution of which is committed to the reſpective ſheriff. In the caſe of a capital felony, the words "hang by the neck" are annexed to the priſoner's name, inſtead of "*ſuſ. per col.*" for *ſuſpendatur per collum*, which was the ancient form. Judge Blackſtone well obſerves, that the execution of a man ſeems to be too important and terrible a taſk to depend on a marginal note. Blackſt. Com. vol. iv. p. 396.

Calendar-*glaſs*, *vitrum calendare*, a name formerly given by ſome writers to a thermometer, or graduated tube, whereby to meaſure the degrees of heat.

Calendar-*brothers*, *fratres calendarii*, a ſort of devout fraternities, compoſed of eccleſiaſtics as well as laymen; whoſe chief buſineſs was to procure maſſes to be ſaid, and alms diſtributed, for the ſouls of ſuch members as were deceaſed. They were alſo denominated *calend-brothers*, becauſe they uſually met on the calends of each month, though in ſome places only once a quarter.

CALENDARIO, Philip, in *Biography*, a celebrated architect and ſculptor, flouriſhed at Venice in the time of Martin Faletri, doge of that republic in 1354. He conſtructed thoſe beautiful porticos ſupported by marble columns, which ſurround the place of St. Mark, above which are ſeen ſuperb buildings ornamented with baſs-reliefs and rich paintings. By theſe works he eſtabliſhed both his fame and fortune. Moreri.

CALENDARIUM *feſtum*. The Chriſtians retained much of the ceremony and wantonneſs of the calends of January, which for many ages was held a feaſt, and celebrated by the clergy with great indecencies, under the names *feſtum kalendarum*, or *hypodiaconorum*, or *ſtultorum*, that is, the feaſt of fools: ſometimes alſo *libertas decembrica*. The people met maſked in the church, and in a ludicrous way proceeded to the election of a mock pope, or biſhop, who exerciſed a juriſdiction over them ſuitable to the feſtivity of the occaſion: fathers, councils, and popes long laboured to reſtrain this licence, to little purpoſe. We find the feaſt of the calends in uſe as low as the cloſe of the fifteenth century. Du-Cange.

CALENDER, a machine uſed, in the manufactories, for preſſing certain ſtuffs, ſilks, callicoes, and even linens; to make them ſmooth, even and gloſſy. It is alſo uſed for watering, or giving the waves to tabbies and mohairs.

The word is formed from the French *calandre*, or Spaniſh *calandra*, which ſignify the ſame; and which ſome derive further from the Latin *cylindrus*; becauſe the whole effect of the machine depends upon a cylinder. Borel derives the name from that of a little bird, of the ſwallow kind; on account of the agreement between the feathers of the bird, and the impreſſion of the machine.

The calender conſiſts of two large wooden rollers, round which the pieces of ſtuff are wound: theſe are put between two large, cloſe, poliſhed planks of wood, or plates of iron, the lower ſerving as a fixed baſe, and the upper moveable, by means of a wheel like that of a crane; with a rope, faſtened to a ſpindle, which makes its axis: this upper part is of a prodigious weight, ſometimes twenty or thirty thouſand pounds. It is the weight of this part, together with its alternate motion, that gives the poliſh, and makes the waves on the ſtuffs, by cauſing the cylinders on which they are put to roll with great force over the loweſt board. The rollers are taken off, and put on again by inclining the machine.

At Paris they have an extraordinary machine of this kind, called the *royal calender*, made by order of M. Colbert; the lower table or plank of which is made of a block of ſmooth marble, and the upper lined at bottom with a plate of poliſhed copper.

This is called the great calender; they have alſo a ſmall one with two tables of poliſhed iron or ſteel.

There are alſo calenders without wheels, which are wrought by a horſe harneſſed to a wooden bar, which turns a large arbor placed upright; at the top of which, on a kind of drum, is wound a rope, the two ends of which being faſtened to the two extremities of the upper plank of the engine, give it motion. But the horſe calendar is in leſs eſteem than the wheel kind, as the motion of this latter is more equable and certain.

We read of calendering worſteds. To improve linen farther, the drapers get ſeveral ſorts of their cloths calendered: whereby their threads are made to lie flatter and ſmoother.

Calender alſo denotes the workman who manages the machine above deſcribed; applying the cloth or ſtuff underneath, after having firſt wound it on the rollers.

Calenders is alſo the name of a ſort of derviſes ſpread through Turkey and Perſia, whoſe order is not in general eſteem among the Mahometans, as being reputed leſs abſtemious and ſtrict in morals than ſome other orders. They derive their name from Calenderi, their founder, who went bareheaded, without a ſhirt, and with the ſkin of a wild beaſt thrown over his ſhoulders. Before, he wore a kind of apron, the ſtrings of which were adorned with counterfeit precious ſtones. In Perſia and Arabia theſe derviſes were called *Abdals* or *Abdallat*, i. e. Perſons conſecrated to the ſervice or honour of God. They preach in the market-places, and live upon alms. See Dervis.

CALENDS, Calendæ, in the *Roman Chronology*, the firſt day of every month.

The word is formed from καλεω, *I call*, or *proclaim;* becauſe, before the publication of the Roman Faſti, it was one of the offices of the pontifices to watch the appearance of the new moon, and give notice thereof to the *Rex Sacrificulus;* upon which a ſacrifice being offered, the pontiff ſummoned the people together in the capitol, and there, with a loud voice, proclaimed the number of *calends*, or the day whereon the nones would be; which he did by repeating this formula, as often as there were days of *calends: Calo Juno Novella.* Whence the name *calendæ* was given thereto, from *calo, calare.* This is the account given by Varro. Plutarch, and after him Gaza, derive the word from *clam; Quia luna calendis clam ſit:* but this is far fetched. Others derive the appellation hence: that the people being convened on this day, the pontifex called or proclaimed the ſeveral feaſts or holidays in the month; a cuſtom which continued no longer than the year of Rome 450, when C. Flavius, the curule ædile, ordered the faſti, or calendar, to be ſet up in public places, that every body might know the difference of times, and the return of the feſtivals.

The calends were reckoned backwards, or in a retrograde order: thus, v. g. the firſt of May being the *calends* of May; the laſt, or thirtieth of April, was the *pridie calendarum*, or ſecond of the calends of May; the twenty-ninth of April, the third of the calends, or before the calends: and ſo back to the thirteenth, where the ides commence; which are, likewiſe, numbered invertedly to the fifth, where the nones begin; which are numbered after the ſame manner to the firſt day of the month, which is the calends of April. See Ides and Nones.

The rules of computation by calends are included in the following verſes:

> "Prima dies menſis cujuſque eſt dicta calendæ:
> Sex Maius nonas, October, Julius, & Mars;
> Quatuor at reliqui: habet idus quilibet octo.
> Inde dies reliquos omnes dic eſſe calendas;
> Quas retro numerans dices a menſe ſequente."

To find the day of the *calends* anſwering to any day of the month we are in; ſee how many days there are yet remaining of the month, and to that number add two: for example; ſuppoſe it the 22d of April; it is then the 10th of the calends of May. For April contains 30 days; and 22 taken from 30, there remains 8; to which 2 being added, the ſum is 10.

The reaſon of adding *two* is, becauſe the laſt day of the month is called *ſecundo calendas*, the laſt but one *tertio calendas*, &c.

The Roman writers themſelves are at a loſs for the reaſon of this abſurd and whimſical manner of computing the days of the month: yet it is ſtill kept up in the Roman chancery; and by ſome authors, out of a vain affectation of learning, preferred to the common, more natural, and eaſy manner.

Calends, *Kalendæ*, are alſo uſed in *Church Hiſtory* to denote conferences anciently held by the clergy of each deanery, on the firſt day of every month, concerning their duty and conduct, eſpecially in what related to the impoſition of penance. Du-Cange.

Calends *of January*, in *Roman Antiquity*, was a ſolemn feſtival conſecrated to Juno and Janus; wherein the Romans offered vows and ſacrifices to thoſe deities, and exchanged preſents among themſelves, as a token of friendſhip.

It was only a melancholy day to debtors, who were then obliged to pay their intereſts, &c. Hence Horace calls it *triſtes calendæ.* Lib. i. Serm. Sat. 3.

CALENDULA, in *Botany*, (according to Martyn, a diminutive from Caltha, the name of the moſt common ſpecies in old authors; Ventenat derives it from Calendæ, the Latin term for the firſt day of every month, becauſe it continues long in flower, whence one of its Italian names Fiore d'ogni Meſe.) Linn. gen. 990. Schreb. 1339. Willd. 1559. Gært. 991. Juſſ. p. 183. Vent. v. 2. p. 545. Marigold. Claſs and order, *Syngeneſia polygamia neceſſaria.* Nat. ord. *Compoſitæ diſcoideæ.* Linn. *Corymbiferæ*, Juſſ. Vent.

Gen. Ch. *Calyx* ſimple, nearly upright, with numerous linear-lanceolate, nearly equal diviſions. *Cor.* radiate: florets of the *diſk* numerous, tubular, ſemiquinquefid, the length of the calyx; the *ray* ſtrap-ſhaped, very long, three-toothed, hairy at the baſe, without nerves, with piſtils only. *Stamens* of the diſk: filaments five, capillary, very ſhort; anthers the length of the floret, united in a hollow cylinder. *Piſt.* of the *diſk:* germ oblong; ſtyle thread-ſhaped, ſcarcely the length of the ſtamens: ſtigma obtuſe, bifid, ſtraight. *Piſtil* of the *ray:* germ oblong, three-cornered; ſtyle thread-ſhaped; ſtigmas two, oblong, acuminate, reflexed. *Pericarp*, the permanent calyx converging and depreſſed. *Seeds* in the *centre* of the *diſk* none; in the *circumference*, ſometimes but rarely ſolitary, membranous, inverſely heart-ſhaped, compreſſed; in the *ray*, ſolitary, larger, oblong, incurved, triangular, with membranous angles, marked on the outſide longitudinally with the figure of a vegetable. *Down* none. *Recep.* naked, flat.

Eſſ. Ch. Receptacle naked. Down none. Calyx with many diviſions. Seeds in the circumference of the diſk membranous.

Obſ. As the ſeeds in the circumference of the diſk are very different in form from thoſe of the ray, Linnæus was in doubt whether they were not abortive; but Gærtner aſſerts that both kinds are fertile.

Sp. 1. C. *arvenſis*, Linn. Sp. Pl. (Caltha arvenſis, Bauh. Pin. 275. minima, Bauh. Hiſt. 3. p. 105: officinalis, Scop. Carn. 1040.) "Seeds boat-ſhaped, muricated, incurved, outer ones erect, lengthened, and ſtanding out," Linn. (lanceolate-awl-ſhaped, muricated on the back, Willd.) Annual. *Stem* ſlender, branching, ſpreading near the ground. *Leaves* narrow, ſpear-ſhaped, hairy, half ſurrounding the ſtem at their baſe. *Flowers* pale yellow, ſmall, terminating the branches, on long peduncles. La Marck. *Seeds* of the *diſk* curved inwards, ſo as to form a ſemi-circle; by no means boat-ſhaped or margined, but roundiſh; compreſſed in the belly part to a ſharp edge, convex on the back, and muricated with ſhort, harmleſs prickles: of the *ray* longer, upright, crooked, leſſened upward, and lengthened into a lamellate, two-lobed beak, with little prickles on the outſide, ſmooth within, and augmented near the baſe with a lamellate proceſs. Gært. Tab. 168. fig. 4. A native of cultivated fields in the South of Europe. 2. C. *Stellata*, Willd. Cav. ic. 1. p. 3. tab. 5. Deſf. atl. 2. p. 304. "Seeds boat-ſhaped, incurved, muricated; five outer ones ovate-lanceolate, membranous, and toothed at the margin, muricated on the back." Willd. Annual. *Stem*, as well as the whole plant, rugged; three feet high, herbaceous, ſtriated, much branched. *Leaves* ovate-oblong, toothed in a ſinuate manner, ſomewhat ciliate, thick, bright green. *Flowers* yellow, terminating: florets of the *ray* about ſixteen, equal in number to the diviſions of the calyx: of the *diſk* few, barren. A native of Barbary, cultivated by Cavanilles in the garden of the Duke del Infantado, near Madrid, from ſeeds ſent by Lemonier. It flowers and perfects its ſeeds there from June to Auguſt. 3. C. *ſancta*, Linn. Sp. Pl. "Seeds pitcher-ſhaped, inverſely egg-ſhaped, even; calyxes a little muricated." Annual. Whole plant ſmooth. *Leaves* rugged at the edge. Similar to the arvenſis, but the calyx is muricated on the outſide, the ſeeds bell out more, and are not at all muricated; nor are the ſeeds of the ray prickly. Linn. A native of Paleſtine. 4. C. *officinalis*, Linn. Sp. Plant. (Caltha vulgaris: Bauh. Pin. 275.) "All the ſeeds boat-ſhaped, incurved, muricated." Annual. *Stem*. loftier, and more divaricated than that of C. arvenſis, angular, downy. *Leaves* ſeſſile; lower ones ſpatula-ſhaped; upper ones lanceolate. La Marck. *Seeds* of the *diſk* boat-ſhaped; divided on their concave ſide by a longitudinal partition, and marked on the middle of their convex ſide with an elevated muricated furrow: thoſe of the *ray* roundiſh, bent in a ſemicircular manner, muricated on the outſide, ſmooth within, and often furniſhed near the baſe with an erect, lamellated proceſs. Gært. tab. 168. fig. 4. A native of cultivated ground in the ſouth of Europe. Flowering moſt part of the ſummer. It was cultivated by Gerard in 1597, and is ſtill one of the moſt common annuals in our gardens, where numerous varieties have been produced in the colour and luxuriance of its flowers. The florets of the ray are in many parts of England boiled in broth; and numerous medical virtues were formerly attributed to it, which have now loſt their credit. 5. C. *ſuffruticoſa*, Willd. Vahl. Symb. 2. p. 94. "Seeds boat-ſhaped, incurvated, muricated; outer ones lanceolate-awl-ſhaped, muricated, erect: leaves lanceolate, toothed in rather a ſinuate manner, rough. Stem ſomewhat ſhrubby." Perennial. *Branches* aſcending, terminated by a ſingle flower on a long peduncle. *Flowers* and *Seeds* like thoſe of C. arvenſis. A native of the coaſt of Barbary. 6. C. *incana*. Willd. (C. tomentoſa, Deſf. atl. 2. p. 305. tab. 245. Caltha maritima luſitanica lanuginoſa. Tourn. Inſt. 499. Vail. act. 1720. p. 289.) "Seeds boat-ſhaped, even; outer ones awl-ſhaped, erect, a little muricated; leaves oblong-ſpatula-ſhaped, downy on both ſides." Willd. Annual. Whole plant white with down. Flowers yellow. A native of Morocco and Portugal on the ſea coaſt. 7. C. *pluvialis*, Linn. Sp. Pl. (Caltha africana, Moriſ. tab. 3. fig. 8. Tourn. Inſt. 499.) "Leaves lanceolate, toothed in a ſinuated manner; ſtem leafy; peduncles thread-ſhaped." Annual. *Stems* declining, from ſix to eight inches long; upper part very ſlender. *Flowers* ſingle, terminating; diſk purple; ray of a violet colour on the outſide, and a pure white within, opening when the ſun ſhines, and ſhutting in cloudy weather and in the evening. *Seeds of the diſk* roundiſh, heart-ſhaped, compreſſed, ſurrounded with a ſwelling rim of a pale ſtraw colour: of the *ray* oblong, inverſely pyramidal, three or four-cornered, muricated with tubercles on the ſides and angles. Gært. Tab. 168, fig. 4. A native of the Cape of Good Hope, cultivated by Mr. Miller in 1726. 8. C. *hybrida*, Linn. Sp. Pl. (Caltha africana ſemine majore, oblongo: Breyn. tab. 14. fig. 2. Cardiſpermum af. pubeſcens: Act. Pariſ. 1724. 39. tab. 2.) "Leaves oblong-lanceolate, toothed; ſtem leafy; peduncles thickened at the top." Annual. *Leaves* much longer than thoſe of C. pluvialis and broader at the end. *Flowers* ſmaller, but of the ſame colour. Miller. *Seeds of the diſk* alſo ſimilar, but a little larger, elliptic, heart-ſhaped, and not tumid at the edge; of the *ray* three cornered; the ſides rather convex and ſmooth; the angles compreſſed and toothed in a ſerrated manner. Gært. 9. C. *amplexicaulis*, Willd. Thunb. prod. 164. "Leaves embracing the ſtem, oblong-halbert-ſhaped, toothed; ſtem herbaceous, erect." 10. C. *pinnata*, Willd. Thunb. prod. 164. "Leaves winged." 11. C. *ſcabra*, Willd. Thunb. "Leaves elliptic-lanceolate, toothed, rugged; ſtem herbaceous, erect." 12. C. *parviflora*, Willd. Thunb. "Leaves ſeſſile, lanceolate, toothed; ſtem herbaceous, rough with hairs." 13. C. *decurrens*, Willd. Thunb. "Leaves lanceolate, decurrent, very entire, ſmooth; ſtem herbaceous." 14. C. *nudicaulis*, Linn. Sp. Pl. (Bellis, Comm. hort. 2. 66. tab. 33. Caltha afr. ſemine plano cordato, Boerh. Lugd. 1. 113.) "Leaves lanceolate, toothed in a ſinuate manner; ſtem nearly naked." Annual. *Stem* perfectly ſimple, erect, leafy near the bottom. *Leaves* ſpatula-ſhaped, entire, or rarely furniſhed with a tooth, rugged. *Seeds* orbiculate, Linn. 15. C. *tomentoſa*, Linn. Sup. Thunb. "Leaves inverſely egg-ſhaped, downy; ſcape with a ſingle flower." The laſt nine are all natives of the Cape of Good Hope. 16. C. *pumila*, Willd. Thunb. "Leaves orbiculate, toothed; petioles ciliated; ſcape with one flower." Willd. Perennial. *Leaves* half an inch long. *Petioles* twice as long as the leaf. *Flower* reſembling that of the common daiſy, but four times ſmaller. *Seeds* oblong, incurved. A native of New Zealand. 17. C. *magellanica*, Willd. (C. pumila β. Forſt. Comment. Goett. 9. p. 40. After nudicaulis, Lam. encyc. 1. 305. Illuſt. tab. 681. fig. 4.) "Leaves wedge ſhaped, toothed near the end; ſcape with one flower." Perennial. *Root* thread-ſhaped, creeping. *Leaves* narrowed at the baſe into a petiole, not ciliated. *Scape* furniſhed with one or two thread-ſhaped bractes. A native of the ſtraits of Magellan. 18. C. *graminifolia*, Linn. Sp. Pl. (C. africana ſurrecta. Pluk. mant. 35. tab. 370. fig. 7. Caltha africana foliis croci, Boerh. Lugd. 1. p. 113. Dimorphotheca, Vail. act. 1720. p. 280. Bellis africana foliis anguſtis, Comm. hort. 2. p. 67. tab. 34.) "Leaves linear, nearly entire; ſtem almoſt naked." Perennial. *Stem* dividing near the root into ſeveral tufted heads with long graſſy leaves coming out on every ſide without order. *Peduncles* one-flowered, axillary, about nine inches long. *Florets of the diſk* purple; of the *ray* purple without, pure white within. It is in the greateſt beauty in April and May, but continues to flower late in the autumn. A native of the Cape, whence it was brought to Holland in 1698. It has been long in the Engliſh gardens, but is not ſo common as it deſerves. Miller. 19. C. *Tragus*, Willden. Ait. hort. Kew. 3. 271. Jacq. hort. Schænb. 2. p. 14. tab. 153. "Leaves linear, ſomewhat toothed, muricated with ſmall points beneath; ſeeds nearly orbiculate; ſtem ſomewhat ſhrubby." Perennial. *Leaves* alternate. *Ray of the corolla* large, purple without, white within. 20. C. *oppoſitifolia*, Willd. Ait. hort. Kew. "Leaves oppoſite, linear, entire, ſomewhat fleſhy, ſmooth." Perennial. 21. C. *glabrata*, Willd. Thunb. "Leaves elliptic, entire, ſmooth; ſtem ſhrubby, erect." Perennial. 22. C. *fruticoſa*, Linn. Sp. Pl. "Leaves inverſely egg-ſhaped, ſomewhat toothed; ſtem ſhrubby, decumbent." Perennial. *Stem* ſeven or eight feet high, ſlender, and requiring ſupport; branches numerous, hanging downwards. *Leaves* on ſhort petioles of a ſhining green colour on their upper ſurface. *Flowers* terminating the branches on ſhort naked peduncles. *Seeds* heart-ſhaped, flat. Sent to Mr. Miller by Dr. Van Royen about 1759. 23. C. *arboreſcens*, Willd. Jacq. ic. rar. 3. tab. 596. (C. rigida, Ait. Martyn. C. aſpera, Thunb.) "Leaves oblong, toothed, rugged; ſeeds nearly orbiculate; ſtem ſhrubby, panicled." Perennial. *Flowers* yellow, erect; in fruit nodding. *Rims* of the ſeeds ſemiorbiculate." 24. C. *muricata*, Willd. Thunb. "Leaves oblong, rugged with papillary tubercles; the lower ones toothed, upper ones entire; ſtem ſhrubby." Perennial. 25. C. *cuneata*, Willd. Thunb. "Leaves wedge-ſhaped, fleſhy, toothed." Perennial. The laſt eight are all natives of the Cape of Good Hope.

Propagation and Culture.—The ſeeds of the arvenſis, ſancta, officinalis, pluvialis, hybrida, and nudicaulis, ſhould be ſown in the ſpring, and will afterwards ſow themſelves without farther trouble. The laſt three ſhould not be tranſplanted. The graminifolia does not often produce good ſeeds in Europe, but is eaſily propagated by ſlips taken off from the head, in the ſame manner as is practiſed for thrift. They may be planted any time in ſummer, in pots filled with light freſh earth, and plunged in a moderate hot-bed, or placed in the common earth under a melon frame, and occaſionally, but not plentifully watered. When they have taken root, they ſhould be tranſplanted and kept during the ſummer in the open air, and in a ſhady ſituation. In winter they require protection from froſt and heat, but do not thrive in artificial heat. The fruticoſa is alſo eaſily propagated by cuttings in light poor earth, and muſt be treated in the ſame manner as the graminifolia. Miller.

CALENDULA, in *Ornithology*, a ſpecies of MOTACILLA that inhabits North America, the *Ruby crowned wren* of Latham, roitelet rubis of Buffon, and calendula penſilvanica of Briſſon. The colour is greeniſh-aſh; crown with a ruby (ſometimes deep yellow) line; abdomen and wings beneath yellowiſh. Gmel. &c.

This is a ſmall bird. The female has no ruby line on the crown, but has a ſcarlet lunule moſt commonly on the nape, which is not obſervable in the male.

CALENDULA, in *Zoology*, according to Gmelin, a ſort of HYDRA, called by Hughes in his "Natural Hiſtory of Barbadoes," the animal flower. Authors are divided in opinion as to the genus to which this animal-flower ought to be referred. Gmelin expreſſes a doubt of its being truly of the hydra kind, although he places it in that genus. Ellis conſiders it as an actinia; and later writers entertaining the ſame idea, it ſtands at preſent as *actinia calendula*. Notwithſtanding this, we have, however, no heſitation in believing it to be neither of the genus *hydra*, nor *actinia*, but a ſpecies of *tubularia*. This we muſt preſume from its analogy to the tubularia magnifica, and ſome other accurately defined ſpecies of that genus. The original figure of this animal is that which appears in the "Natural Hiſtory of Barbadoes" by Hughes. Ellis and Solander have a figure of it in their work on zoophytes, but which is copied from the above mentioned publication, as is alſo the deſcription that accompanies it. We muſt therefore have recourſe to the account given of it by Hughes, as being the beſt to be obtained at preſent of this curious animal. This writer deſcribes it as having the appearance of fine radiated flowers, of a pale yellow, or bright ſtraw colour, ſlightly tinged with green; each ſurrounded by a circular border of thick-ſet petals about the ſize of, and much reſembling, thoſe of a ſingle garden marigold; except that the whole of this ſeeming flower is narrower at the diſcus, or ſetting on of the leaves (petals) than any flower of that kind. Mr. Hughes obſerves, that theſe animals, on being diſturbed, ſink into holes; he alſo remarked four dark coloured threads, ſomewhat like the legs of a ſpider, riſe out from the centre of what he calls the flower, with a quick ſpontaneous motion from one ſide to the other of the circular border of leaves (petals;) and theſe in reality, he ſays, were ſo many arms or feelers, cloſing together in imitation of a forceps, as if they had hemmed in their prey, which the yellow border ſoon ſurrounded, and cloſed to ſecure. He attempted to pluck one of theſe from the rock to which they were affixed, but never could effect his deſign, for as ſoon as his fingers came within two or three inches of it, the animal would immediately contract its border of tentacula, and ſhrink back into the hole of the rock; but if left undiſturbed for about four minutes, it would come gradually into ſight, expanding, though at firſt very cautiouſly, its petals or tentacula, till it would at length appear again as before, like a flower in full bloſſom. As often as his hand came within a certain diſtance of it, the animal would again recoil from his approach in the ſame manner. He alſo tried the ſame experiment by attempting to touch it with his cane, and a ſmall ſlender rod, but the effect produced was the ſame.

Ellis call this the ſea marigold, from its near reſemblance, when the tentacula are expanded, to the flower of the common marigold. It may be ſpecifically defined in the words of Gmelin: ſtem ſomewhat turbinated: diſk ſurrounded by petal ſhaped tentacula, or rays.

CALENS, in *Entomology*, a Siberian ſpecies of CHRYSIS of a large ſize, deſcribed by Fabricius. The prevailing colour is gloſſy blue; abdomen golden; tail blue and armed with four teeth. *Obſ.* The legs and tip of the antennæ are fuſcous.

CALENS, a ſpecies of CIMEX found in India. The head, thorax, and wing-caſes are black, with a fulvous ſcutel. Gronovius, &c.

CALENTES, in *Logic*, a ſort of ſyllogiſm in the fourth, commonly called *Galenical*, FIGURE, wherein the major propoſition is univerſal and affirmative; and the ſecond or minor, as well as the concluſion, univerſal and negative. This is intimated by the letters it is compoſed of, where the A ſignifies an univerſal affirmative, and the two E's as many univerſal negatives. E. gr.

CA	*Every affliction in this world is only for a time.*
LEN	*No affliction, which is only for a time, ought to diſturb us.*
TES	*No affliction ought to diſturb us, which happens in this world.*

The Ariſtotelians not allowing the fourth figure of ſyllogiſms, turned this word into CELANTES, and make it only an indirect mood of the firſt figure.

CALENTIUS, ELISIUS, in *Biography*, an ingenious writer both in proſe and verſe, was born in Apulia, and became preceptor to prince Frederick, the ſon of Ferdinand I. king of Naples, whom he endeavoured to inſpire with ſentiments of juſtice and humanity, congenial to his own. He was an enemy to capital puniſhments, and propoſed various ſubſtitutes for them in different caſes. He was much addicted to agriculture, and practiſed it with ſkill. Although his circumſtances were narrow, he lived on terms of intimate friendſhip with the moſt eminent ſcholars of his time, and was a member of the Neapolitan academy. He was the author of ſeveral works, both in proſe and verſe, which were printed in 1503, about the time of his death; the principal of theſe was his poem on the "Battle of the Frogs and Mice," imitated from Homer. He declined writing the hiſtory of the war carried on by Charles the Bold againſt the Swiſs, alleging, that it was not ſafe to ſpeak ill of princes, and that an honeſt man ought not to publiſh falſehoods.

CALENTUM, in *Ancient Geography*, a town of Spain, on the other ſide of the Ebrus. Pliny ſays, that bricks were made in this place of an earth reſembling pumice-ſtone, which would not ſink in water.

CALENTURE, from *calere, to be hot,* in *Medicine*, a ſpecies of diſeaſe, formerly ſaid to be common to ſeamen during their voyages in tropical climates, and to be characteriſed by a peculiar delirium, in which the patient imagined that he ſaw green fields and groves in the ſea, and was deſirous of leaping over-board in order to walk in them. This affection is not mentioned by recent authors, who have written on the diſeaſes of ſeamen in hot climates; and the accounts which have been tranſmitted to us, leave the cauſe of this hallucination in ſome obſcurity. According to Dr. Stubbs, who has briefly related two caſes, which occurred during a voyage to Jamaica, it was a tranſient delirium, independent of fever, and produced by ſordes in the ſtomach and bowels, and was therefore quickly removed by an emetic. (Philoſoph. Tranſact. N° 36.) Other writers deſcribe the calenture as a febrile diſeaſe, attended with a furious delirium, inſomuch that ſix men could ſcarcely reſtrain the patient from leaping into the ſea: and bleeding and other evacuations are ſaid to be the proper remedies by theſe authors. (Shaw's Practice. Allen's Synopſis.) In conſequence of theſe different accounts of the diſorder, Sauvages has deſcribed two genera of the calenture; one of which he claſſes with the ſimple hallucinations, under the title of *Paraphroſyne Calentura;* and the other he conſiders a ſpecies of *Phrenitis*, or inflammation of the brain. (Noſolog. Method. Claſs iii. Ord. 2. and Claſs viii. Ord. 3.) It is probable that the diſeaſe in all inſtances depended upon ſome degree of inflammation in the head, excited by the heat of a vertical ſun; and the inſtinctive feelings, which in many caſes of febrile delirium, prompt the patient to plunge into cold water, to relieve his ſufferings from inordinate heat, may poſſibly have been miſtaken for a conception, that the ſea was a plain or an orange grove.

CALEPINO, or DA CALEPIO, AMBROSE, in *Biography*, a celebrated grammarian, deſcended from the counts of Calepio, was born at Bergamo about the year 1435. He entered into the convent of Auguſtins in his native place, and chiefly devoted himſelf to the ſtudy of languages. His "Vocabulary of the Latin Tongue" became ſo famous, that books of a ſimilar nature were long familiarly termed "Calepines." After many additions and improvements by Paſſerat, Lacerda, Chifflet, and others, this work, firſt printed in 1503, has become a polyglott dictionary, of which the beſt editions are that of Chifflet at Lyons in 1681, 2 vols. fol. and a later one by Facciolati of Padua. Calepino became blind before his death, which happened in 1511. Nouv. Dict. Hiſt.

CALEPIO, in *Geography*, a town of Italy, in the Bergamaſco.

CALERES, in *Modern Hiſtory*, the denomination of a kind of banditti in India, who inhabit the thick foreſts of Tundeman, between Tanjore and Madura. They are diſtinguiſhed from other Indians by their ferocious aſpect and manners, as well as by the dingy colour of their ſkin, which is covered with duſt, and ſeldom waſhed. Their common arms are long pikes, cudgels, and ſabres. They are ſaid to maſſacre all who fall into their hands, and particularly Europeans.

CALERZANO, in *Geography,* a town of Corſica; ſix miles S.E. of Calvi.

CALES, in *Ancient Geography,* a ſmall river of Bithynia, between the Elæus on the weſt, and the Lycus on the eaſt, ſouth-eaſt of Heraclea. The emporium at its mouth, mentioned by Arrian, is called by Marcian of Heraclea, Caleps.

CALES, CALVI, a town of Italy, in Campania, upon the Appian way, S.E. of Theanum, and N.W. of Cazma. It was celebrated for its wine, called "Calenum." In its ruins are diſcerned a theatre and amphitheatre.

CALES, in *Geography*. See CADIZ.

CALETÆ, or CALETES, in *Ancient Geography*, a people placed by Cæſar, and alſo by Strabo, in Belgic Gaul; but Auguſtus compriſes them in Celtic Gaul, or Gallia Lyonnenſis; their chief town was "Juliobona." M. d'Anville ſuggeſts that they probably occupied the dioceſe of "Caux." The promontory "Caletorum," was ſituated in Lyonnenſis Secunda, at the mouth of the Seine; now called "Cape Caux."

CALETURE, in *Geography*. See CALTURA.

CALETURE lies alſo on the coaſt of Coromandel, northeaſterly from Pullicat or Palliakate.

CALF, one of the ſmaller Orkney iſlands, about one mile to the north of Eda. Alſo, another ſmall iſland of the ſame groupe, about a mile north of Flata.

CALF, a rock near the coaſt of Ireland, about half a mile from the ſouth-weſt end of Durſey iſle in the county of Cork, at the entrance into Bantry bay. N. lat. 51° 31'. W. long. 10° 6'.

CALF *of Man,* a ſmall iſland in the Iriſh ſea, near the ſouth-weſt coaſt of the Iſle of Man. N. lat. 54° 1'. W. long. 4° 43'.

CALF *Sound,* lies on the coaſt of Sweden, four leagues ſouth from Maelſtrand, and as much north from Wingo iſland. It abounds with dangerous rocks.

CALF, in *Rural Economy,* the young of the cattle kind of animals. Calves are diſtinguiſhed, according to the difference of ſex, into male and female, or *bull* and *cow, why,* or *qui* calves. There are conſiderable differences in the management of theſe animals in different diſtricts of the kingdom, both in the rearing and fattening; the advantages of which ſtill remain to be decided by the teſt of experiment.

CALVES, *Rearing of.* It is by this practice that the farmer is to raiſe his cattle ſtock; it ſhould, of courſe, be attended to with a great degree of care. Where he is anxious to have a good cow ſtock, the beſt cow calves ſhould be carefully ſelected from ſuch cows as are the moſt tractable, afford the beſt milk, are the moſt hardy, and beſt ſuited to the ſtate of the farm; afterwards rearing them with the moſt careful attention to the nature and quantity of food, as well as other circumſtances.

There can be little doubt but that the beſt and moſt natural mode of rearing the young of this, as well as moſt other kinds of animals, is, that of allowing them to ſuck their dams at leaſt for ſome length of time after they are brought forth. The uſual method in Yorkſhire is, however, that of giving them milk to drink, there being few inſtances where they are allowed to ſuck. For the firſt two or three weeks, they moſtly get milk warm from the cow; but for the next two or three weeks, half the new milk is withdrawn, and ſkimmed milk ſubſtituted in its ſtead: and at the end of that period of time, the new milk is wholly withdrawn; they are then fed on ſkimmed milk alone, or ſometimes mixed with water, till they are able to ſupport themſelves by eating graſs, or other food of that, or other ſorts which are provided for them.

But in Cheſhire, the practice is to allow the calves to ſuck for the firſt three weeks. They are then fed on warm green whey, or ſcalded whey and butter milk mixed; with the green whey, water is frequently mixed, and either oatmeal, or wheat and bean flour added. A quart of meal or flour is thought ſufficient to mix with forty or fifty quarts of liquid. Oat-meal gruel and butter-milk, with an addition of ſkimmed milk, are alſo uſed for the ſame purpoſe. Some one of theſe prepared kinds of food is given night and morning for a few weeks after the calves are put on that diet, but afterwards, only once a day, till they are three months old or more, and become perfectly ſtrong.

The calves in Glouceſterſhire are not allowed to ſuck above two or three days; they are then fed on ſkimmed milk, which is previouſly heated over the fire. When they arrive at ſuch an age as to be able to eat a little, they are allowed ſplit beans or oats, and cut hay, water being mixed with the milk at the time of giving it.

And the method practiſed in Suſſex differs materially from any of theſe. It is common, in that diſtrict, to allow the calves either to ſuck for ten or twelve weeks, or to wean them at the end of three or four, and to give them a liberal allowance of ſkimmed milk for ſix or eight weeks longer when neceſſary. The Suffolk farmers adopt the practice of letting the calves ſuck the cows a month, ſix weeks, or more, coarſe pollard and oats being then given in mixture with ſkimmed milk and water: ſome nice green hay being conſtantly placed before them, till the period of their being turned out into the paſtures. In this method carrots would probably ſupply the place of the oats, and greatly leſſen the expence.

The method purſued by the farmers in Scotland for rearing calves ſeems well adapted to the purpoſe: they are two. The firſt is, by giving them a pailful, containing about a gallon, of milk, warm from the teat of the cow, morning and evening, for eight or ten weeks. The ſecond, which is certainly the moſt agreeable to nature, and therefore to be preferred to any other that can be adopted, is, to allow the calf to ſuck its dam, as is ſometimes done in the county of Suſſex, and ſome other diſtricts, as in ſome parts of Lancaſhire.

The Norfolk huſbandmen permit their early calves to ſuck twice in the day for about a fortnight, and afterwards to have the pail in the ſame manner for an equal length of time; then once a day for a month or more, according to circumſtances; turnips, cut hay, &c. being placed in the mangers before them, at the time.

Where it is the cuſtom to rear calves with ſkim-milk, it ſhould always be boiled, and ſuffered to ſtand until it cools to the temperature of that firſt given by the cow, or in a trifling degree more warm, and in that ſtate be given to the calf. Milk is frequently given to calves when warmed only; but that method will not ſucceed ſo well as boiling it. If the milk be given over-cold, it will cauſe the calf to ſkit or purge. When this is the caſe, put two or three ſpoonfuls of rennet in the milk, and it will ſoon ſtop the looſeneſs. If, on the contrary, the calf is bound, bacon-broth is a very good and ſafe thing to put into the milk. One gallon, or rather more, of milk per day will keep a calf well till it be thirteen weeks old. A calf may then be ſupported without milk, by giving it hay, and a little wheat bran, once a day, with about a pint of oats. The oats will be found of great ſervice, as ſoon as the calf is capable of eating them, in promoting its growth. The bran and oats ſhould be given about mid-day: the milk in equal portions, at eight o'clock in the morning, and four in the afternoon. But whatever hours are choſen to ſet apart for feeding the calf, it is beſt to adhere to the particular times, as regularity is of more conſequence than is generally ſuppoſed. If the calf goes but an hour or two beyond its uſual time of feeding, it will find itſelf uneaſy, and pine for food.

It is always to be conſidered, that calves, reared in this manner, are to be enticed to eat hay, or ſome other ſimilar material, as early as poſſible; and the beſt way of doing this, is, to give them the ſweeteſt hay in your poſſeſſion, and but little at a time. Turnips or potatoes are very good food, as ſoon as they can eat them; and they are beſt cut ſmall, and mixed with the hay, oats, bran, and ſuch articles, at the time of their being given.

It may be obſerved, that it is not abſolutely neceſſary to give milk to calves after they are one month old; and to wean them gradually, two quarts of milk, with the addition of linſeed boiled in water to make a gruel, and given together, will anſwer the purpoſe, until, by diminiſhing the milk gradually, the calf will ſoon do entirely without. Hay-tea will anſwer the purpoſe, with the like addition of two quarts of milk, but is not ſo nutritious as linſeed. It is a good method of making this, to put ſuch a proportion of hay as will be neceſſary into a tub, then to pour on a ſufficient quantity of boiling water, covering up the veſſel, and letting the water remain long enough to extract the virtues of the hay. When bacon or pork is boiled, it is alſo a good way to preſerve the liquor or broth, and mix it with milk for the calves.

In ſummer, calves may ſometimes be reared on whey only. But when reared in winter, they muſt be fed with hay; and clover-hay is probably the beſt of any ſort for this uſe. Calves may alſo be raiſed with porridge of different kinds, without any mixture of milk at all.

It has been ſuggeſted to be ſometimes a good convenient plan, to bring up calves under a ſort of foſter mother; an old cow, with a tolerable ſtock of milk, will ſuckle two calves, or more, either turned off with her, or at home, keeping them in good condition, until they are old enough to ſhift for themſelves: they ought to ſuck the firſt of their mother's milk, for two or three days, although many are weaned without ever being ſuffered to ſuck at all. Calves, whether rearing or fattening, ſhould always ſuck before milking, the cow being milked afterwards, as the firſt and thinneſt of the milk is ſufficiently rich for them. Old milk often ſcours very young calves; but the effect generally goes off without any ill conſequence. Skimmed milk and ſecond flour are ſometimes made uſe of. The large, ſhort-horned breed of calves moſtly conſume daily, at three meals, three quarters of a pound of flour each, boiled up in ſkimmed milk or other liquid.

The proper degree of warmth for the ſkimmed milk, on which calves are weaned, is a little above that freſh from the cow.

In the Rural Economy of Norfolk, it is remarked, by Mr. Marſhall, that ſome farmers bring up all the year round, rearing every calf they have dropped. Others rear in winter only, fattening their ſummer calves for the pea-markets; or at a diſtance from them for the butcher. Norfolk farmers, in general, begin early in winter to rear their calves, ſome ſo early as Michaelmas; in common, if their cows come in before Chriſtmas, not only as being fully aware of the advantage of rearing early, but in order that they may rear as many of their own calves as poſſible, drove calves being always hazardous, and ſometimes ſcarce. No diſtinction is made as to ſex; males and females are equally objects of rearing, and are both occaſionally ſubject to caſtration, it being a prevailing cuſtom to ſpay all heifers intended to be fatted at three years old, but ſuch as are intended to be finiſhed at two years old are, it is believed, pretty generally left "open," as are, of courſe, ſuch as are intended for the dairy. There are two reaſons for this practice; they are prevented from taking the bull too early, and thereby fruſtrating the main intention; and by this precaution may be more quiet, and are kept from roving at the time of fattening.

This may be one reaſon why ſpayed heifers are thought to fatten more kindly at three years old, and to be better fleſhed than open heifers. The method of treatment depends, in ſome meaſure, on the time of rearing; the winter calves require more milk than the later-dropt ones.

"Here the general treatment of a calf dropt at Chriſtmas may be ſaid to be this; ſucks twice a day the firſt fortnight, has the pail twice a day for the next month or ſix weeks, and once a day for a month or ſix weeks longer, with hay in a rack and turnips in a manger, and ſometimes with oats and beans among the turnips, which laſt, after a calf has taken freely to them, ſerve as both meat and drink. In this conſiſts the chief peculiarity of the Norfolk method of rearing calves, which may be ſaid to be with milk and turnips; the laſt a ſpecies of food, which, in every other part of the kingdom is, it is believed, entirely neglected or unthought of. As ſoon as the weather gets warm enough, the calves are turned out in the day among the fattening bullocks, or on to a patch of turnips, or upon a piece of wheat, or a forward graſs-piece, and houſed again at night, until the days growing long and the nights warm, and the clover and darnel have riſen to a full bite, when they are turned out altogether, and continue to have the firſt bite of every thing which is good and palatable to them throughout the ſummer. This may be called the general treatment of calves dropt at Chriſtmas; but the management of no two farmers is exactly the ſame."

Calves, *weaning of.* The moſt ſuitable ſeaſon for this buſineſs is the early part of the ſpring, as ſuch calves as are weaned at a late period ſeldom attain any great ſize. The beſt means of accompliſhing this is by gradually taking them from the cow, and afterwards diminiſhing the quantity and quality of the milk, or other liquid with which they are fed, until they become capable of being ſupported on graſs alone, or with ſome ſort of cut food. The method of management in theſe caſes is thus ſtated by the author of the "Synopſis of Huſbandry;" "having a cow ſuited to the purpoſe which drops a calf, let it be ſuckled in the uſual mode, till it hath completed the third week of its age; when, inſtead of turning it to the cow, it is to be ſuckled by thruſting its head into a pail of new milk, and the finger of the perſon who directs the buſineſs is to ſupply the place of a teat. At firſt the calf may be rather awkward at ſucking the finger, but this will ſoon become familiar, and after a while a lock of hay may be ſubſtituted for the teat; and as the calf advances in age it will ſuck the milk out of the pail without any aſſiſtance. The milk ſhould at firſt be given, as obſerved before, free of adulteration; but, at the end of the firſt month, a little milk pottage may be added to each ſerving. This method ſhould be continued till the calf is twelve or fourteen weeks old, lowering the milk pottage by degrees, till at length it will be brought to ſimple water only. At the ſeaſon when the calf is thus weaned from the teat, it ought to be turned abroad in the day-time into a ſmall cloſe or orchard near the yard, where there is a good bite of graſs, which may be expected at the time of the year when the weaning calves are of this age; and as there will generally be more than one calf weaned in a ſeaſon, they will each be company for the other, and become in a ſhort time reconciled to their ſituation. It is to be obſerved, that this paſture ſhould be at ſome diſtance from that whereon the dams are turned, and that there be neither ponds nor ditches, nor any annoyance which might endanger the lives of theſe youthful animals; and in order to habituate them ſtill more to their paſture, the milk-pottage ſhould be carried clean to them at each of their feeding hours. For the firſt month or ſix weeks the calves ought every night to be brought out of the meadow and lodged in the pens; but, after this time, they may be left in the paſture as well in the night ſeaſon as in the day, and at this time the food may be lowered by degrees, till, as was before obſerved, it be at length reduced to ſimple water only, for when the calves get to the age of twelve or fourteen weeks, they will no longer require the aid of this ſuſtenance, but will be able to ſatisfy their appetites by graſs. Care, however, muſt be taken throughout the ſummer, that they be frequently ſhifted from one paſture to another, in order that they may be kept up in good fleſh, and enabled to grow away with the utmoſt celerity. At Michaelmas, or ſoon after, the calves ſhould be taken into the yard; and if they were allowed the indulgence of a ſmall cloſe to themſelves, it would be ſtill better. And here their taſte muſt be gratified with the beſt and ſweeteſt hay that can be procured, with an outlet on a dry paſture, where in fine open weather they may be ſuffered to enjoy themſelves; and it would redound greatly to their welfare, if, on the approach of winter, a ſhed was to be erected for them to repoſe in during the night, and for ſhelter in tempeſtuous days. So eſſential are warmth and good living to young animals of every denomination, that the care which has been taken of them in their early days will be manifeſt in every ſtate of their future growth. Nor is there any ſtock which will pay better for this cautious management in their youth than thoſe of the cow kind: for if they are ſtinted in their feed, or careleſsly attended whilſt in their growing ſtate, they will never arrive to that ſize which they would otherwiſe have done, and conſequently the loſs will be perpetually felt by the farmer who attempts to raiſe milch kine of his own breed, without giving them a due attendance in the firſt year. When the calves have attained their firſt year, they are called *buds* or *yearlings;* and though at this time they may be able to mix with the herd, yet he thinks it would be moſt prudent, if not attended with too great an inconvenience, to ſuffer them to remain in a paſture by themſelves. But if this cannot be done, let them be turned out with the dry ſtock, and not permitted to run with the cows, as this might probably be the occaſion of their taking bull; a meaſure which ſhould at this time be cautiouſly guarded againſt, as ſuch buds which propagate at this early age will receive a check in their growth on this account; and if, during the ſucceeding winter, they were to be managed as before directed, he is of opinion that their future growth would be found to pay ample intereſt for the fodder that is now given them; only, this is to be obſerved, that as their ſtrength is now conſiderably augmented, a leſs valuable fodder may ſuffice, and good pea-ſtraw may well ſupply the place of hay. Such farmers who have low ruſhy meadows, where there is frequently a length of *tril* in the winter, may in this ſecond year turn the calves into them, and here they will meet with plenty of nouriſhing food, whilſt the weather is fair and open. At two heirs old the heifer may be ſuffered to take bull; but it would in his opinion be ſtill better for the cow, and more to the intereſt of the farmer, if he were to wait a year longer ere the buſineſs be completed."

From the great ſcarcity of milk, various ſubſtitutes have been propoſed for the early periods of weaning, ſome of which ſeem well calculated for the uſe they are deſigned. The method propoſed by the duke of Northumberland is to take one gallon of ſkimmed milk, and to about a pint of it add half an ounce of common treacle, ſtirring it until it is well mixed; then to take one ounce of linſeed oil-cake, finely pulverized, and with the hand let it fall gradually in very ſmall quantities into the milk, ſtirring it in the mean time with a ſpoon or ladle, until it be thoroughly incorporated; then let the mixture be put into the other part of the milk, and the whole be made nearly as warm as new milk when it is firſt taken from the cow, and in that ſtate it is fit for uſe. The quantity of oil-cake powder may, from time to time, be increaſed, as occaſion may require, and as the calf becomes inured to the flavour of it. But Mr. Crook's method is to make a jelly of one quart of linſeed, boiled ten minutes in ſix quarts of water, which jelly is afterwards mixed with a ſmall quantity of the beſt hay-tea; on this he rears many calves without milk.

Mr. Donaldſon obſerves, that calves when dropt during the graſs-ſeaſon ſhould be put into ſome ſmall home-cloſe of ſweet rich paſture, after they are eight or ten days old, not only for the ſake of exerciſe, but alſo that they may the ſooner take to the eating of graſs. When they happen to be dropt during winter, or before the return of the graſs-ſeaſon, a little ſhort ſoft hay, ſtraw, or ſliced turnips, ſhould be laid in the trough or ſtall before them. By means of linſeed made into a jelly by boiling in water, calves have been weaned without any milk at all, in the trials of Mr. Crook. The author of Practical Agriculture ſuggeſts that potatoe meal has been found to be uſeful in this intention, "as it mixes well with milk, water, or weak broth, and is highly nutritious."

Male calves that are intended to be kept ſhould conſtantly be caſtrated or cut at an early period, as in the firſt week or fortnight, the danger being conſiderably leſs when done early.

Calves, *ſuckling of*. In this practice the produce of the cow can in many ſituations be brought to great advantage; as in the vicinity of large towns. The method moſt commonly employed in fattening calves, is to allow them to ſuck; as by this method the object is probably not only ſooner, but more effectually attained than by any other means. The period which is neceſſary for fattening calves muſt be different, according to circumſtances, but it is generally from ſeven to nine weeks; however, in the dairy diſtricts, where milk is conſidered a valuable article, ſcarcely half that time is allowed. There is another method, which is to give them the milk to drink; and when that is done, it is given them morning and evening warm from the cow, and the quantity increaſed according to their age and ſtrength. In whatever way they may be managed, they ſhould be kept in pens in a cloſe well aired houſe, and well littered.

The author of the Synopſis of Huſbandry obſerves, "that as it is neceſſary that the calves ſhould lie always quiet, in order that they may indulge in ſleep at thoſe times when they are not employed in ſucking; it ſeems proper that the cow-houſe ſhould be ſituated in the moſt retired part of the yard, and that the pens ſhould be kept as dark as poſſible. But notwithſtanding this caution, the calves ſhould by no means be ſuffered to lie too hot in the ſummer time, which would be apt to induce a ſickneſs amongſt them. To admit, therefore, an occaſional draught of freſh air, let a window be cut in each pen, with ſhutters adapted to the ſame, and let theſe windows be opened whenever the cloſeneſs of the atmoſphere indicates it to be neceſſary. In the ſummer ſeaſon they ſhould rarely, if ever, be cloſely ſhut, and when it is required, the ſtream of air may be increaſed by opening the cow-houſe door at the oppoſite end of the building. Each calf ſhould have a collar round his neck, to direct him in his ſuckling, but ſhould never be faſtened up in the pen. It is neceſſary that the pens be conſtantly well littered with the cleaneſt wheat ſtraw, a proportion of which ſhould be thrown in to them every day; cleanlineſs being a moſt eſſential article in the fattening of every animal, and not more neceſſary to any than the calf, which, but for this precaution, would in a ſhort time demonſtrate the ill effects of lying on his accumulated dung, which of all other animals is the moſt offenſive, and of a quality highly ſeptic. Still as the calves are yeaned, they are to be taken into the pens, and ſuckled on their own dams, which at firſt will yield a far greater quantity of milk than is neceſſary for their offſpring, ſo that another calf may be ſuckled thereon; or the cow may be milked, and the cream be reſerved for butter, or applied to any other uſe that the owner may think proper. As the calf increaſes in ſize it will require a larger quantity of milk; but whilſt they are young, one good cow will yield a noble ſupply for two calves; and when the produce is demanded for one calf, another new milch cow ſhould be provided, and theſe two cows will abundantly ſupply the three calves with milk till the oldeſt is fit for the butcher; after which, if neceſſary, a freſh ſuckler may be bought in, and the buſineſs be carried on progreſſively by keeping the houſe conſtantly ſupplied with calves, ſo that the whole milk may be ſucked; as the different branches of the fatted calf and the dairy cannot be ſo conveniently united."

"For many of the ſouthern parts of the kingdom, Smithfield market is the moſt convenient place to apply for ſucklers, ſo as to be on a certainty of procuring them, this being the general receptacle where the milk-men vend their calves; and theſe having been bred from the larger Staffordſhire or Holderneſs cows, do generally turn out to good account for the ſuckler, ſuch large boned calves, when fattened, ariſing to a weight much more conſiderable than the ordinary produce of the country dairy-men; and as to the ſuperior quantity of milk required in fattening the larger breed of calves, this is amply recompenſed by the greater increaſe of weight. The only hazard attending this Smithfield bargain is, the accident which may happen to the creature on the road, if the drift has been of any length; for, beſides the cow-men above-mentioned, many ſucklers are ſent to this market from the vale of Ayleſbury, and theſe ſometimes meet with accidents, either from the lengthened journey, or want of milk. From the former, the quiet of the pens generally recovers them, and the ill conſequences of inanition may be obviated by ſtinting the creature to a ſhort allowance for a few meals, till the cauſe is removed. With theſe precautions, it will, he believes, very rarely be found that any fatal conſequences ſucceed either of theſe evils. However it ſometimes happens that, in ſpite of all our care, the ſuckler dies in conſequence of imprudent management in the vender; but as theſe accidents are not frequent, they ought not to deter the farmer from repleniſhing his pen by the London markets, where his vicinity to the metropolis will allow of the practice.

"Young calves," he ſays, "when permitted to ſuck their fill, are often ſeized with a lax or ſcouring. To prevent which, the calves for the firſt fortnight or three weeks may be ſtinted in their allowance; at the ſame time due regard ſhould be taken that they do not pine or decreaſe in fleſh for want of milk. But after this age, they ſhould be allowed to ſuck as long as they chooſe, and every means ought to be made uſe of to increaſe their appetite, and render them more eager after their food. Chalk may be given for this purpoſe, as well as for giving to the fleſh a delicate whiteneſs. Salt ſprinkled in the troughs will likewiſe act as a ſtimulus to the appetite; beſides which, it is a common practice with ſome people to cram their calves with balls compounded of flour, pounded chalk, and milk, with the addition of a ſmall quantity of common gin. Of theſe they give two, about the ſize of a walnut, once a day, or oftener, to each calf. Theſe balls being very nutritious, in ſome degree ſupply the place of milk, and at the ſame time the ſpiritous mixture operates on the creature as a ſoporific;

rific; and thus, by compoſing them to ſleep, increaſes their diſpoſition to fatten. But where milk can be had in ſufficient abundance, it is never worth while to have recourſe to theſe factitious aids. When the demands of the calf, however, are beyond the ability of the cow, theſe balls come ſeaſonably to their relief. In order that the calves may be provided with ſufficient ſtore of milk, the paſtures ſhould ſtill be changed, whenever the cows are found to be deficient in this particular; and in the winter time, ſuch food as is of a ſucculent nature, as grains, turnips, &c. ſhould be always at hand to ſupply the want of graſs: and theſe, with a due allowance of the ſweeteſt hay, ſhould be their conſtant aliment during the time that the cows are confined to the yard.

“The prices of ſuckling calves vary according to the goodneſs of the young animal, and the time of year wherein the purchaſe is made. In general, ſucklers fetch the largeſt price in ſummer, when veal ſells the cheapeſt; and the reaſon of this ariſes from the ſmaller number to be met with at that time than in the ſpring. A good ſuckler in London can ſeldom be bought for leſs than 20s., and is often ſold for 25s. or 30s. The buſineſs of ſuckling was formerly reckoned to turn out to good advantage, when each calf throughout its fattening brought a profit to the farmer of three ſhillings a week; but now (1799) ſo conſiderably have proviſions of every kind been advanced in price within theſe few years, the profit on the article of ſuckling is much greater.

“When calves are ſlaughtered at ſix weeks or two months old, the veal is ſeldom of a good colour; neither has the fleſh of theſe young calves a taſte equal to that where the animal has been ſuffered to live a few weeks longer. To attain both the ends of colour and flavour it is neceſſary that the calves ſhould be maintained with plenty of milk, and regulated under ſuch management as before directed, till they arrive to the age of eight or ten weeks, according to the ſeaſon of the year, the more or leſs kindly ſtate of the calf, the particular demand of the markets, or other eventual circumſtances. In the ſummer ſeaſon, it may be proper to diſpoſe of them at an earlier period than in the winter; not only on account of their growing away with greater celerity in warm weather, but likewiſe becauſe of the increaſed demand for ſmall veal, which is then moſt ſaleable. During the laſt three or four weeks, blood ſhould frequently be drawn from the calf, which will be a likely means towards rendering the veal of a colour delicately white; a circumſtance ſo much attended to by the butcher, that he will commonly depreciate ſuch calves, which from the appearance of their eyes are likely to *die black*, as they term it, though in other reſpects not to be deſpiſed.

“Such calves as are ſuckled on their own dams will, generally ſpeaking, fatten in a ſhorter time than thoſe which are afterwards bought in to ſupply their places. The firſt obvious reaſon for this difference in their favour is their not having been removed from the places where they were firſt dropped, and having always continued to ſuck the milk of their parent animal, which muſt in all reaſon be ſuppoſed of a more nutritious quality to them than that of any other cow. Secondly, the cow having ſo lately calved, the aliment nouriſhes and fattens in a higher degree than when the creature becomes ſtale milched. Cow calves are obſerved to fatten more kindly than the male or bull calves; and theſe laſt are much more coarſe grained, and their fleſh leſs delicate in taſte than the former. Calves of the largeſt ſize are fattened in Eſſex, where the buſineſs of ſuckling ſeems to be better underſtood, and more properly conducted than in any other county, and where the farmer keeps the calves to a greater age than in any other part of the kingdom.”

Mr. Marſhall is clearly of opinion, that “to ſuckle calves in general after they are ten weeks old is bad management; for his account in this reſpect is uniform—thoſe of nine or ten having paid as much a week as thoſe of twelve or thirteen, and although a calf of ſix weeks old may ſuck nearly as much milk as a calf of twelve weeks old, yet the firſt month or five weeks the quantity is conſiderably leſs, and this advantage of their infancy is doubly as valuable to nine as it is to twelve weeks.”

In ſome diſtricts, barley-meal, linſeed boiled into a kind of jelly, and ſuch-like articles, are given to calves in the courſe of fattening; but the methods above deſcribed are greatly ſuperior, although it muſt be allowed that they may ſometimes be conſiderably more expenſive.

It is of the greateſt importance in this practice to have good breeds of cows, to keep them conſtantly well fed, and the ſuckling houſes airy, ſpacious, and perfectly clean from all ſorts of filth.

CALF-*pen*, a place formed for the purpoſe of receiving calves for the practice of fattening them.

In moſt places it is the cuſtom to have the calf pens annexed to the cow-houſes. The only reaſon, Mr. Beatſon obſerves, in his uſeful paper in the communications to the Board of Agriculture, “that he can aſſign why calf-pens ſhould be within the cow-houſe is, that it ſaves a little trouble to the dairy-maid, by having a ſhorter diſtance to carry the milk. In general, however, it is a plan not to be recommended, as every perſon who has had any experience among cows muſt know how naturally and how forcibly a new calved cow expreſſes her attachment to her calf; with what care and anxiety, if permitted, ſhe licks it all over, and uſes every exertion to protect it from injury; how the tender calf clings to its affectionate mother, as if ſenſible that to her alone it can truſt for protection: and yet the poor helpleſs creature (ſays he) is dragged away, and placed perhaps within its mother's view, or at leaſt within her hearing, as if on purpoſe to augment the pain of her ſufferings. Its doleful cries keep alive the pangs of the unhappy cow; ſhe ſtruggles to break the chain that binds her faſt, and ſeems reſtleſs and uneaſy whenever approached. In ſuch a ſtate of agitation it is impoſſible ſhe can either feed well, or give that quantity and quality of milk ſhe would otherwiſe furniſh. Where there are many cows kept, and perhaps ſeveral of them lately calved, a ſingle calf may keep them all in this reſtleſs ſtate: to remedy which, the beſt way (ſays he) is to have the calves at ſuch a diſtance, or at leaſt ſo thick a wall betwixt them, that the cows cannot hear their cries. The cow will then ſoon forget her calf, and will both feed and milk the better for it; therefore they ſhould be as near as conveniently may be, without being liable to the above objections.

“To lie dry and warm is of the greateſt conſequence in the rearing of calves, as is evident from what has been already advanced on the ſubject. Some think it neceſſary to accuſtom a calf to be bound with a halter from the hour of its being calved; others again turn them quite looſe into the pen, and allow them to range and run about as much as they pleaſe. Which of theſe is the beſt method is here of little conſequence. The principal thing to be obſerved in the conſtruction of calf pens is the laying of the floor, which ſhould be made of laths or ſpars, about two inches broad, laid at the diſtance of an inch from each other upon joiſts, ſo as to make the floor above one, two, or three feet from the ground, as the ſituation will admit. This not only keeps them quite dry, by allowing all the moiſture to paſs immediately away, but has the advantage of admitting freſh air below the bedding, and thereby preventing that unwholeſome diſagreeable ſmell too often found among calves; for, it is to be underſtood, that this place below the floor ſhould frequently be cleaned, as well as the floor itſelf, whenever it becomes wet or dirty; but it is not right to allow the litter to increaſe to a great thickneſs, otherwiſe the moiſture will not ſo eaſily paſs through. Calf-pens are, however, too often made without this ſparred floor, and the freſh litter always laid on the old, till the calves are removed, which is a ſlovenly practice, and not by any means to be recommended.

" Stalls, or diviſions, are but ſeldom made in calf-pens: at the ſame time it would certainly be much better to keep the calves ſeparate from each other; by which means they will be more eaſily fed, and leſs liable to accidents. Partitions, about three feet high, of thin deal nailed on ſmall poſts, might be ſo contrived as to be moveable at pleaſure, to increaſe or diminiſh the ſtall if neceſſary, according to the age and ſize of the calf. This may be done as repreſented in the plate on calf-pens, *fig.* 1. which is the ground-plan of a double calf-pen for ten calves; *a* is the door; *b* the paſſage betwixt the pens; *c c c*, &c. are the pens, ſhewing the ſituation of the partitions; *d d d d* are four joiſts, in which are ſeveral holes, as ſhewn on the plan, for receiving iron pins, at the bottom of the partitions, to keep them in their place; *e* is a window or door, beſides which there ſhould be ſome other windows or air-holes as high up as poſſible. If it be thought unneceſſary to make the partitions, there might be a ſmall round trough, in a circular frame, fixed in the corner of each pen, as at *f*, for holding the milk, and a door in the next adjoining corner. A ſmall ſlight ſack for holding a little hay, placed at the upper part of the pen, might alſo be uſeful. The troughs ſhould be round, that the calves may not hurt themſelves upon them, which they might probably do on the angles if they were ſquare. *Fig.* 2. is a ſection of theſe pens, in which *r r* ſhews the poſition of the racks. The advantages of this kind of calf-pens are, that the calves are all kept ſeparate in a ſmall compaſs, and cannot hurt each other, as the ſtronger ones ſometimes do the weaker, when confined promiſcuouſly; and their food may be much more eaſily and equally diſtributed when they are not ſuckled.

" If a great number of calves are feeding, as thirty or forty, or more, it might be ſo contrived in ſuch pens, by pipes communicating with the troughs, that one perſon might give all the calves their milk at the ſame inſtant of time; and that any given quantity of milk, and no more, can go into each trough; but as this method would probably be but rarely required by the farmer, it is unneceſſary, in a general point of view, to enter into an explanation of it."

In Glouceſterſhire, Mr. Marſhall ſays, " the calf-pens are of an admirable conſtruction; extremely ſimple, yet ſingularly well adapted to that intention. Young calves, fattening calves more eſpecially, require to be kept narrowly confined: quietneſs is, in a degree, eſſential to their thriving. A looſe pen, or a long halter, gives freedom to their natural fears, and a looſe to their playfulneſs. Cleanlineſs, and a due degree of warmth, are likewiſe requiſite in the right management of calves. A pen which holds ſeven, or occaſionally eight calves, is of the following deſcription:— The houſe, or roomſtead, in which it is placed, meaſures twelve feet by eight: four feet of its width are occupied by the ſtage, and one foot by a trough placed in its front; leaving three feet as a gangway, into the middle of which the door opens. The floor of the ſtage is formed of laths, about two inches ſquare, lying lengthways of the ſtage, and one inch aſunder. The front fence is made of ſtaves, an inch and a half in diameter, nine inches from middle to middle, and three feet high: entered at the bottom into the front bearer of the floor (from which croſs joiſts paſs into the back wall), and ſteadied at the top by a rail; which, as well as the bottom piece, is entered at each end into the end wall. The holes in the upper rail are wide enough to permit the ſtaves to be lifted up and taken out, to give admiſſion to the calves; one of which is faſtened to every ſecond ſtave, by means of two rings of iron joined by a ſwivel; one ring playing upon the ſtave, the other receiving a broad leathern collar, buckled round the neck of the calf. The trough is for barley-meal, chalk, &c. and to reſt the pails on. Two calves drink out of one pail, putting their heads through between the ſtaves. The height of the floor of the ſtage, from the floor of the room, is about one foot. It is thought to be wrong to hang it higher, leſt, by the wind drawing under it, the calves ſhould be too cold in ſevere weather. This, however, might be eaſily prevented by litter, or long ſtrawy dung thruſt beneath it." It is obſervable, that theſe ſtages are fit only for calves which are fed with the pail, not for calves which ſuck the cows.

CALF, *ſtage*, in *Rural Economy*, a term employed in ſome diſtricts to ſignify the ſame as pen, probably from the floor being ſomewhat raiſed.

CALF-*ſkins*, in the *leather manufacture*, are prepared and dreſſed by the tanners, ſkinners, and curriers, who ſell them for the uſe of the ſhoe-makers, ſadlers, bookbinders, and other artificers, who employ them in their ſeveral manufactures.

CALF-*ſkin dreſſed in ſumach*, denotes the ſkin of this animal curried black on the hair ſide, and dyed of an orange colour on the fleſh ſide by means of ſumach, chiefly uſed in the making of belts. The Engliſh calf-ſkin is much valued abroad, and the commerce thereof very conſiderable in France and other countries; where divers attempts have been made to imitate it, but hitherto in vain. What is likely to baffle all endeavours for imitating the Engliſh calf in France is, the ſmallneſs and weakneſs of the calves about Paris; which, at fifteen days old, are not ſo big as the Engliſh ones when they come into the world.

CALF, *Golden*, in *Scripture Hiſtory*. See GOLDEN CALF.

CALF, *Sea*, in *Zoology*. See PHOCA VITULINA, and SEA-CALF.

CALF alſo denotes the young of the WHALE.

CALF, among *Sportſmen*, is uſed for a male hart or hind of the firſt year.

CALFS-*ſnout*, in *Botany*. See ANTIRRHINUM ORONTIUM.

CALFAT, in *Ornithology*, a ſpecies of EMBERIZA, the red-eyed bunting of Latham, a bird that inhabits the iſle of France. This is ſmaller than the common ſparrow: colour hoary: beneath vinaceous: head, throat, and margin of the tail, black: bill, legs, and orbits roſy. *Gmel.* &c. Obſ. This is Le Calfat of Buffon.

CALHETA, in *Geography*, a ſmall town of Madeira, in the diſtrict of Funchal.

CALI. See KALI.

CALI, in *Geography*, a town of South America, in a department of the ſame name, in the province of Quito, and government of Popayan, built by Sebaſtian de Belalcazar. N. lat. 3° 15′. W. long. 73° 16′.

CALIACH-HEAD, a cape of Scotland, on the north-weſt coaſt of the iſland of Mull.

CALIAVARI, LUCA, in *Biography*, a painter, was born at Udine, in Italy, in 1665, and acquired his ſkill by ſtudying and copying the works of eminent maſters. His choſen ſubjects were ſea-ports and landſcapes, eſpecially views about Rome and Venice, which he deſigned and executed with truth, nature, and elegance. His volume of perſpective views of Venice, etched with aqua-fortis, evince his taſte and abilities. He died in 1715. Pilkington.

CALIBER, or **CALLIPER**, in a general ſenſe, denotes the extent of any round thing in thickneſs, or diameter.

In which ſenſe we ſay, a column is of the ſame *caliber* as another, when they are both of the ſame diameter.

CALIBER more particularly denotes the bore, or width of a piece of ordnance, or other fire-arms; or the diameter of the mouth thereof; or the ball it carries.

The caliber is the rule by which all the parts of a cannon, or mortar, as well as of its carriage, are proportioned.

CALIBER-*compaſſes*, a ſort of compaſſes made with arched legs, to take the diameter of convex or concave bodies.

Caliber-compaſſes are chiefly uſed by gunners, for taking the diameters of the ſeveral parts of a piece of ordnance, or of bombs, bullets, &c. Their legs are therefore circular, and move on an arch of braſs, whereon are marked the inches and half-inches; to ſhew how far the points of the compaſſes are opened aſunder.

Some are alſo made for taking the diameter of the bore of a gun or mortar.

The gaugers alſo ſometimes uſe calibers to embrace the two heads of any caſk, in order to find its length.

The caliber, uſed by carpenters and joiners, is a piece of board notched triangular-wiſe in the middle, for the taking of meaſure.

CALIBER, **CALIBER**-*rule*, or *Gunner's* **CALLIPERS**, is an inſtrument, wherein a right line is ſo divided, as that the firſt part being equal to the diameter of an iron or leaden ball of one pound weight, the other parts are to the firſt as the diameters of balls of two, three, four, &c. pounds, are to the diameter of a ball of one pound. The caliber is uſed by engineers, from the weight of the ball given to determine its diameter, or *caliber*; or *vice verſa*.

The gunner's callipers conſiſt of two thin plates of braſs joined by a rivet, ſo as to move quite round each other: its length from the centre of the joint is between ſix inches and a foot, and its breadth from one to two inches: that of the moſt convenient ſize is about nine inches long. Many ſcales, tables, and proportions, &c. may be introduced on this inſtrument; but none are eſſential to it, except thoſe for taking the *caliber* of ſhot and cannon, and for meaſuring the magnitude of ſaliant and entering angles. The moſt complete callipers is exhibited *Tab. Gunnery*, *fig.* 2. the furniture and uſe of which we ſhall now briefly deſcribe. Let the four faces of this inſtrument be diſtinguiſhed by the letters A, B, C, D; A and D conſiſt of a circular head and leg; B and C conſiſt only of a leg.

On the circular head adjoining to the leg of the face A are diviſions denominated *ſhot diameters*, which ſhew the diſtance in inches and tenths of an inch of the points of the callipers when they are opened; ſo that if a ball not exceeding ten inches be introduced between them, the bevil edge E marks its diameter among theſe diviſions.

On the circular bevil part E of the face B is a ſcale of diviſions diſtinguiſhed by *lb. weight of iron ſhot*. When the diameter of any ſhot is taken between the points of the callipers, the inner edge of the leg A ſhews its weight in avoirdupoiſe pounds, provided it be lb. $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, 3, 4, $5\frac{1}{4}$, 6, 8, 9, 12, 16, 18, 24, 26, 32, 36, or 42; the figures neareſt the bevil edge anſwering to the ſhort lines in the ſcale, and thoſe behind them to the longer ſtrokes. This ſcale is conſtructed on the following geometrical theorem. viz. that the weights of ſpheres are as the cubes of their diameters.

On the lower part of the circular head of the face A is a ſcale of diviſions marked *bores of guns*; for the uſe of which, the legs of the callipers are ſlipped acroſs each other, till the ſteel points touch the concave ſurface of the gun in its greateſt breadth; then the bevil edge F of the face B will cut a diviſion in the ſcale ſhewing the diameter of the bore in inches and tenths.

Within the ſcales of *ſhot* and *bore* diameters on the circular part of A, are diviſions marked *pounders*: the inner figures $\frac{1}{2}$, $1\frac{1}{2}$, 3, $5\frac{1}{4}$, 8, 12, 18, 26, 36, correſpond to the longeſt lines; and the figures 1, 2, 4, 6, 9, 16, 24, 32, 42, to the ſhort ſtrokes. When the bore of a gun is taken between the points of the callipers, the bevil edge F will either cut or be near one of theſe diviſions, and ſhew the weight of iron ſhot proper for that gun.

On the upper half of the circular head of the face A are three concentric ſcales of degrees; the outer ſcale conſiſting of 180 degrees numbered from right to left, 10, 20, &c. the middle numbered the contrary way, and the outer ſcale beginning at the middle with 0, and numbered on each ſide to 90 degrees. Theſe ſcales ſerve to take the quantity of an angle, either entering or ſaliant. For an entering, or internal angle, apply the legs of the callipers ſo that its outward edges coincide with the legs of the given angle, the degree cut by the bevil edge F in the outer ſcale ſhews the meaſure of the angle ſought: for a ſaliant, or external angle, ſlip the legs of the callipers acroſs each other, ſo that their outward edges may coincide with the legs forming the angle, and the degree marked on the middle ſcale by the bevil edge E will ſhew the meaſure of the angle required. The inner ſcale will ſerve to determine the elevation of cannon and mortars, or of any oblique plane. Let one end of a thread be fixed into the notch on the plate B, and any weight tied to the other end: apply the ſtraight ſide of the plate A to the ſide of the body whoſe inclination is ſought, hold it in this poſition, and move the plate B, till the thread falls upon the line near the centre marked *Perp.* Then will the bevil edge F cut the degrees on the inner ſcale, ſhewing the inclination of that body to the horizon.

On the face C near the point of the callipers is a little table ſhewing the proportion of troy and avoirdupoiſe weights, by which one kind of weight may be eaſily reduced into another.

Near the extreme of the face D of the callipers, are two tables ſhewing the proportion between the pounds weight of London and Paris, and alſo between the lengths of the foot meaſure of England and France.

Near the extreme on the face A is a table containing four rules of the circle and ſphere; and geometrical figures with numbers annexed to them: the firſt is a circle including the proportion in round numbers of the diameter to its circumference; the ſecond is a circle inſcribed in a ſquare, and a ſquare within that circle, and another circle in the inner ſquare: the numbers, 28, 22, above this figure, exhibit the proportion of the outward ſquare to the area of the inſcribed circle; and the numbers 14, 11, below it, ſhew the proportion between the area of the inſcribed ſquare and the area of its inſcribed circle. The third is a cube inſcribed in a ſphere; and the number $89\frac{1}{3}$ ſhews that a cube of iron, inſcribed in a ſphere of 12 inches in diameter, weighs $89\frac{1}{3}$. The fourth is a ſphere in a cube, and the number 243, expreſſes the weight in pounds of a ſphere inſcribed in a cube whoſe ſize is 12 inches: the fifth repreſents a cylinder and cone of one foot diameter and height: the number in the cylinder ſhews, that an iron cylinder of that diameter and height weighs 364.5 lb. and the number 121.5. in the cone expreſſes the weight of a cone, the diameter of whoſe baſe is 12 inches, and of the ſame height: the ſixth figure ſhews that an iron cube, whoſe ſide is 12 inches, weighs 464 lb. and that a ſquare pyramid of iron, whoſe baſe is a ſquare foot and height 12 inches, weighs $154\frac{2}{3}$ lb. The numbers which have been hitherto fixed to the four laſt figures were not ſtrictly true; and therefore they have been corrected in the figure here referred to; and by theſe the figures on any inſtrument of this kind ſhould be corrected likewiſe.

On the leg B of the callipers, in a table ſhewing the weights of a cubic inch or foot of various bodies in pounds avoirdupoiſe.

On the face D of the circular head of the callipers is a table contained between five concentric ſegments of rings: the inner one marked *Guns* ſhews the nature of the gun, or the weight of ball it carries; the two next rings contain the quantity of powder uſed for proof and ſervice to braſs guns, and the two outermoſt rings ſhew the quantity for proof and ſervice in an iron cannon.

On the face A is a table exhibiting the method of computing the *number of ſhot or ſhells* in a triangular, ſquare, or rectangular pile. Near this is placed a table containing the principal rules relative to the *fall of bodies*, expreſſed in an algebraic manner: nearer the centre we have another table of rules for raiſing water, calculated on the ſuppoſition, that one horſe is equal in this kind of labour to five men, and that one man will raiſe a hogſhead of water to eight feet of height in one minute, and work at that rate for ſome hours. N. B. Hogſheads are reckoned at ſixty gallons.

Some of the leading principles in gunnery, relating to *ſhooting* in cannon and mortars, are expreſſed on the face B of the callipers. Beſides the articles already enumerated, the ſcales uſually marked on the SECTOR are laid down on this inſtrument: thus, the line of inches is placed on the edge of the callipers, or on the ſtraight borders of the faces C, D: the logarithmic ſcales of numbers, ſines, verſed ſines, and tangents, are placed along theſe faces near the ſtraight edges: the line of lines is placed on the ſame faces in an angular poſition, and marked *Lin.* The lines of plans or ſuperficies are alſo exhibited on the faces C and D, tending towards the centre, and marked *Plan.* Finally, the lines of ſolids are laid on the ſame faces tending towards the centre, and diſtinguiſhed by *Sol.* See farther on the conſtruction and uſe of this inſtrument, Robertſon's Treatiſe of Mathematical Inſtruments, &c. Appendix.

CALIBOGIE *River* and *Sound*, in *Geography*, lie on the coaſt of S. Carolina in America, and form the outlet of May and New Rivers.

CALICA, in *Mythology*, an Indian goddeſs, which ſeems to have poſſeſſed the attributes of the Grecian Hecate. Mr. Blaquiere, with a view of aſcertaining the fact, that human ſacrifices were offered to this horrible deity, examined the Purana which bears her name. Birds, tortoiſes, alligators, fiſh, nine ſpecies of wild animals, buffaloes, bulls, he-goats, ichneumons, wild boars, rhinoceroſes, antelopes, guanas, rein-deers, lions, tygers, *men*, and blood drawn from the offerer's own body, are looked upon as proper oblations to the goddeſs Chandica, &c. The following injunction afterwards occurs: when the ſacrifice of lions, of tygers, or of the human ſpecies is requeſted, let the three firſt claſſes act thus: having formed the image of the lion, tyger, or human ſhape, with butter, paſtry, or barley meal, let them ſacrifice the ſame as if a living victim, the axe being firſt invoked by the text "Nomo;" that text is as follows: "Cali! Cali! O horrid-toothed goddeſs: eat, cut, deſtroy all the malignant: cut with this axe; bind, bind, ſeize, ſeize; drink blood, tear, tear: ſecure, ſecure; ſalutations to Cali!" Among other exceptions, with regard to human victims, thoſe that are unwilling are expreſsly prohibited. Aſiatic Reſearches, vol. v. p. 371, &c.

CALI-CALIC, in *Ornithology*, the Madagaſcar Shrike, *Lanius Madagaſcarienſis*, ſtands under this name in Buffon's Natural Hiſtory of Birds.

CALICO, in *Geography*, a river of European Turkey, which runs into the gulf of Saloniki; 14 miles S.W. of Saloniki.

CALICOULAN, COYLAN, or QUILON, a Dutch factory on the weſtern coaſt of Malabar, about 14 geographical miles to the N.N.W. or N.W. of Anjengo, or Anjenga, placed by major Rennell in N. lat. 8° 39'. E. long. 76° 40'.

CALICULA, in *Ancient Geography*, a town of Spain, placed by Ptolemy in the Tarragonenſis, and aſſigned to the Turduli.—Alſo, another town of Spain, which Ptolemy places in the territory of the Turdetani.

CALICUT, in *Geography*, a country of Aſia, and a very extenſive ſtate on the coaſt of Malabar. Its chief aſſumed the title of king of kings. The laſt of theſe princes, called Sarana Parimal, having embraced Mahometaniſm, retired to end his days at Mecca, and dividing his dominions between the princes of his own blood, reſerved, as it is ſaid, a ſpace of 12 leagues for one of theſe princes, or a favourite page, who was to have the title of Samorin, and to whom the others were to render homage. The Samorin built a city on the ſpot whence Parimal took his departure, and called it "Calicut." He who afterwards governed Calicut, inhabited a palace of ſtone, and annexed ſome appearance of grandeur to his court. In former times, the inhabitants of this diſtrict had ſeveral ſtrange cuſtoms, ſome of which are ſtill retained. Accordingly it is ſaid, that the Samorin's wife muſt be firſt enjoyed, for three nights if he pleaſes, by the high prieſt. The nobles permit the other prieſts to take the ſame liberty; but the lower people are debarred from this honour. A woman may marry a number of huſbands; each of whom has her by turns for ten days or more, as they agree among themſelves; and during that time he provides for her all neceſſaries. When ſhe proves pregnant, ſhe names the father of the child, who, after it is weaned, takes care of its education. The "Naires" of Calicut form a band of nobles, whoſe only profeſſion is that of arms. Theſe men, though of an olive colour, are comely and handſome; they are tall and hardy, very valiant, and dextrous in the uſe of their weapons. They lengthen their ears to ſuch an extent, that they hang down on their ſhoulders, and ſometimes lower. Theſe Naires are allowed only one wife, but the women of rank may have as many huſbands as they chuſe, whom they regard as ſlaves ſubjected to their beauty. Women of inferior condition ſupply the defect of the privilege appropriated to ladies of rank, by indiſcriminate commerce with ſtrangers, from which their huſbands cannot reſtrict them. The mothers proſtitute their daughters even before they arrive at a proper age. The "Naires," or nobles of Calicut, ſeem to be of a different race from the burgeſſes; for the latter, both males and females, are of a ſmaller ſtature, and are worſe ſhaped, and more ugly. Among the "Naires" there are ſome men, as well as women, whoſe legs are as thick as the body of an ordinary man. This deformity is not the effect of diſeaſe, but commences from their birth. The ſkin of theſe legs is hard and rough like a wart; and, nevertheleſs, the perſons affected with it are nimble and active. This race of men with thick legs, has not multiplied greatly; either among the "Naires," or the other Indians. However, they appear in other places, and eſpecially in Ceylon, where they are ſaid to be of the race of

St. Thomas. Du Buffon's Nat. Hiſt. vol. iii. p. 99, Eng. Ed. The people of this country have no pens, ink, or paper; but write with a bodkin on flags that grow by the ſides of the rivers, which are ſo ſtrong as to be durable for many years. The diſtrict called Calicut is about 63 miles long, and nearly as many broad. The air is ſalubrious, though it has many woods, rivers, and marſhes; the ſoil is fertile, but it does not produce much grain; it is ſubject to inundations from the ſudden deſcent of the mountain-rivers; and the ſea alſo has made ſuch ravages on the coaſt as to oblige the Samorin to transfer his reſidence from Calicut to Paniany. Along the ſea-coaſt, the land is low and ſandy, and produces a number of cocoa-trees. The higher grounds produce pepper and cardamoms of a good quality. The country alſo ſupplies timber for building, white and yellow ſanders, caſſia lignea and fiſtula, nux vomica, and cocculus indicus. The foreſts abound with parrots and monkeys, and various ſorts of game: they have plenty of fiſh, and their mountains yield iron. The Samorin is ſaid to be able to raiſe an army of 100,000 men.

Calicut, the capital of the country above deſcribed, is ſituate on the coaſt of Malabar. This city is remarkable for being the firſt Indian port viſited by European ſhipping. Vaſco de Gama, having doubled the Cape of Good Hope, and purſuing his navigation along the ſouth-eaſt of Africa, arrived at the city of Melinda; and conducted by the pilots of this civilized and commercial city, he failed acroſs the Indian Ocean, and landed at Calicut, on the 22d of May 1498. This was at that time the moſt flouriſhing place on the Malabar coaſt. The Samorin, or monarch of the country, aſtoniſhed at this unexpected viſit of an unknown people, whoſe aſpect, arms, and manners, bore no reſemblance to any of the nations accuſtomed to frequent his harbours, and who arrived in his dominions by a route hitherto deemed impracticable, received them at firſt, with that fond admiration which is often excited by novelty. But in a ſhort time, as if he had been inſpired with foreſight of all the calamities now approaching India by this fatal communication opened with the inhabitants of Europe, he formed various ſchemes to cut off Gama and his followers. But from every danger to which he was expoſed, either by the open attacks, or ſecret machinations of the Indians, the Portugueſe admiral extricated himſelf with ſingular prudence and intrepidity, and at laſt failed from Calicut with his ſhips loaded, not only with the commodities peculiar to that coaſt, but with many of the rich productions of the eaſtern part of India.

Calicut, though much fallen in its conſequence, is ſtill a large town, containing about five or ſix hundred houſes, built of wood, or bricks baked in the ſun, in the midſt of which are beautiful gardens. Thus circumſtanced, it is three leagues in circumference, including a large village or ſuburb, inhabited by fiſhermen. It is governed by a viceroy, but wants a regular police; and its commerce, which is ſtill not inconſiderable, on account of a convenient river by which teak-wood is brought down from the neighbouring mountains, is much oppreſſed by burdenſome duties, generally farmed by Mahometans. The coaſt is low, and affords no ſhelter, and the only acceſs to it is in ſmall flat-bottomed boats. But though it has no harbour, it affords to the ſhips that viſit it good riding in the open ſea, at the diſtance of three leagues from the ſhore. The Engliſh factory, which formerly ſubſiſted in this place, is removed to Tellicherry. N. lat. 11° 18'. E. long. 76° 4'.

CALIDRIS, in *Ornithology*, a ſpecies of **Scolopax** that inhabits Europe and America, and well-known in this country by the name of red-ſhank. The bill is ſtraight and red; legs ſcarlet; ſecondary quill feathers white. Kramer. This is the totanus of Briſſon, ſcolopax totanus of the Fauna Suecica, rotbien of Friſch, &c.

Obſ. A variety of this ſpecies is found in China, the body of which is grey above, and beneath white; lower part of the neck, and ſide of the breaſt, ſpotted with blackiſh; rump and tail barred with black and white. Latham, &c.

Calidris, a ſpecies of **Tringa**, the bill and legs of which are blackiſh; body beneath olivaceous; rump variegated. Gmel. This is the duſky ſandpiper of Latham; calidris of Briſſon; ruſticola ſylvatica of Geſner and Aldrovandus; and maubeche of Buffon. Inhabits the maritime parts of France and Germany. Length nine inches and an half.

Calidris, a ſpecies of **Motacilla**, called by Latham the hang-neſt warbler; and American nightingale of Edwards. The plumage is greeniſh brown above; beneath, fulvous; ocular line, and another beneath it, black. Gmel. This is ficedula Jamaicenſis major of Briſſon; and grand ſiquier de la Jamaique of Buffon.

This bird is of the ſize of a robin, and builds a hanging-neſt; it inhabits Jamaica, and is ſuppoſed to be the watchy picket, Spaniſh nightingale, or American hang-neſt of Sloane.

Calidris *nigra*, the name under which Aldrovandus deſcribes **Tringa** *gambetta*, the red-legged horſeman of Albin, and gambet of other Engliſh writers.

Calidris *griſea* of Briſſon is the Gmelinian **Tringa** *griſea*; and **Calidris** *griſea minor* of the ſame author: **Tringa** *arenaria* of Gmelin. Briſſon alſo deſcribes tringa nævia of Gmelin under the name of calidris nævia. Calidris bellonii of Aldrovandus is ſcolopax calidris of Kramer, &c.

Calidris, a ſpecies of **Charadrius**, called in England the ſanderling or curwillet. The bill and legs of this bird are black; lores and rump greyiſh; body beneath white, without ſpots. Georg. It inhabits the ſandy coaſts of England and North America. Length eight inches.

Obſ There is a variety of this ſpecies in which the front, and body beneath are cinereous white.

CALIDUCTS, from *calor*, heat, and *duco*, I lead; a kind of pipes, or canals, diſpoſed along the walls of houſes and apartments; uſed by the ancients for the conveyance of heat to ſeveral remote parts of the houſe, from one common furnace.

The ancient caliducts ſeem both for thrift and uſe preferable to the German ſtoves; and might even challenge the advantage over our own faſhion, were it not that the very ſight of a fire adds ſomething of luſtre to a room.

CALIDUS, in *Entomology*, a ſpecies of **Cimex** of the middle ſize, found in Africa. The colour above is fuſcous; beneath, teſtaceous, with black antennæ. Fabricius.

Calies, in *Geography*, a ſmall town of Germany, in the circle of Upper Saxony, and New Mark of Brandenburg, chiefly inhabited by weavers of woollen cloth; 16 miles E. of Reetz.

CALIFORNIA, a tract of country, formerly thought to be an iſland, but now aſcertained to be a peninſula, on the weſtern coaſt of North America, bounded on the north by the continent, with which it is connected, on the eaſt by the province of New Mexico and the gulf of California, or the Vermilion Sea, which ſeparates it towards the ſouthern part from the continent, and on the ſouth and weſt by the great Pacific Ocean. This peninſula terminates on the ſouth at Cape Lucar or Lucas, in N. lat. 22° 10', and W. long. 110°, and extends northward to limits that have not been preciſely aſcertained. Some have fixed its northern extremity at Cape St. Sebaſtian, in N. lat. 43° 30'; whilſt others have extended it to 46°, and have made its length 600 leagues, and its breadth at different places, 10, 20, 30, and 40 leagues. North California, indeed, of which the moſt northern ſettlement is San Franciſco, in N. lat. 37° 58′, has no other bounds, according to the ſtatement of La Pérouſe, founded on the opinion of the governor of Monterrey, than thoſe of America itſelf.

To the enterpriſing ſpirit of Cortes, the Spaniards, were firſt indebted for the diſcovery of the extenſive peninſula of California. Having fitted out ſeveral ſmall ſquadrons for the purpoſe of proſecuting ſuch voyages of diſcovery as he could make, from the ports of New Spain in the South Sea, which either periſhed in the attempt, or returned without any ſucceſs of importance; this adventurous conqueror of Mexico determined to take the command of a new armament in perſon; and, after enduring incredible hardſhips, and encountering every kind of danger, he at length, viz. in 1536, diſcovered this peninſula, and ſurveyed the greater part of the gulf which ſeparates it from New Mexico. During a long period, however, this country was ſo little frequented, that even its form was unknown, and in moſt charts it was repreſented as an iſland, and not as a peninſula. In 1540, Mendoça, viceroy of Mexico, diſpatched Franciſco Alarçon to ſearch towards the weſt for the pretended ſtrait of Anian; but he advanced no higher than the latitude of 36°, and made no diſcovery. This ſame project was renewed in 1542, by Rodrigues de Cabrillo: but this whole expedition ſerved only to explore a cape in the latitude of 41° 30′, which was denominated Capo Mendocino, in honour of the Mexican viceroy. In 1578, ſir Francis Drake found, that in the latitude of 48°, there exiſted lands and men; and after having reconnoitred the coaſt through an extent of 220 leagues, which terminates in 37°, he called the country which he had diſcovered "New Albion," and took poſſeſſion of it in the name of Elizabeth, queen of England. In the lat. of 38° 30′, he diſcovered the harbour where he made ſome ſtay, and which has preſerved his name. From an account of Drake's voyage, publiſhed in a treatiſe entitled "The World encompaſſed by Fletcher," London, 1653, 4to. it appears, that he gave to the country which he diſcovered the name of "New Albion," for two reaſons; firſt, becauſe from the nature of the rocks and ſhoals with which the coaſt is ſkirted, it preſents the ſame aſpect as that of England; and ſecondly, becauſe it was reaſonable and juſt, that this land, till then unknown, ſhould bear the name of the country of the firſt navigator who landed there. In 1592, a Greek of the iſland of Cephalonia, Juan de Fuca, in the ſervice of Spain, diſcovered towards the 48th parallel, a large ſtrait by which he pretended to have reached the Atlantic Ocean. Fuca's ſtrait, or inlet, has been found again in our days; but the communication of the two oceans is neither better proved, nor more probable, and might perhaps exiſt only in his account. See Fuca's *Strait.* In 1595, a galleon was ſent to make diſcoveries on the ſhore of California; but the veſſel was unfortunately loſt in Port des los Reyes. In 1602, the Spaniſh admiral, Sebaſtian Viſcaino, or Biſcaino, was charged by count de Monterrey, viceroy of New Spain, to explore, to the north of California, a harbour that might afford an aſylum to the galleons on their return from Manilla: he diſcovered a commodious one, ſafe and well ſituated, in the latitude of 36° 40′, to which he gave the name of the viceroy Monterrey, and which is ſince become the principal ſettlement of the Spaniards on the N. W. coaſt. It is aſſerted, that a ſmall veſſel belonging to his ſquadron, commanded by Martin de Aguilar, found between 40 and 44 degrees, the mouth of a great river which bears his name on the geographical maps. It is added, that, having ſucceeded in doubling cape Mendocino, which, till then, had only been perceived, he diſcovered on the 13th of January 1603, 30 leagues more to the northward than this cape, in the latitude of 43°, a ſecond cape or point, to which he gave the name of Capo Blanco, and that the navigable inlet or large river which he diſcovered is near this cape, and that it is a ſtrait which leads to a great city, named "Quivira;" but that he was prevented by the rapidity of the current from aſcending the river. The navigators of later times have procured no information reſpecting either this inlet of Aguilar, or the great city of Quivira. La Pérouſe, who, in 1786, got a diſtant view of Capo Blanco, and of the parts of the coaſt which are neareſt to it to the northward and ſouthward, ſaw nothing of Aguilar's inlet; but as he was then at a conſiderable diſtance from the land, and as he did not make a particular ſearch for this inlet, no concluſion can be drawn from his account againſt its exiſtence. Moſt of the geographical and hydrographical charts place Aguilar's inlet or river to the ſouthward of Capo Blanco; but Thomas Lopez, in his general chart of America, publiſhed in 1772, lays it down 20 leagues to the northward of that cape, in the latitude of 44°, with this ſimple indication, "Rio que corre a l'oeſte," river that runs to the weſt; and he makes no mention of the great city Quivira. In 1640, admiral Bartolomeo de Fuente, or De Fonte, is ſaid to have diſcovered, towards the parallel of 53°, the archipelago of San Lazaro, the river of Los Reyes, ſome great lakes, &c. and an eaſy paſſage of communication between the Great Ocean and the North Atlantic Ocean. This diſcovery, inſerted in an account, the authenticity of which has been conteſted, and in which truth is blended with falſehood, has been confirmed by modern navigators, as to what regards the archipelago of San Lazaro, and perhaps an interior ſea; but the communication of the two oceans is not better eſtabliſhed than that which had been opened by Juan de Fuca. About the middle of the laſt century, Joſeph Nicolas de Liſle, and Phillippe Buache, publiſhed learned diſſertations and ingenious ſyſtems for the purpoſe of reconciling the diſcoveries of De Fuente on the N.W. coaſt of America with what is known beſides of that northern part of the new continent. Other geographers and learned perſons have conſidered the account of De Fuente as counterfeit and apocryphal; and among the latter is Dr. Reinhold Forſter, who, with his ſon George Forſter, accompanied captain Cook in his ſecond voyage, and to whom we are indebted for an excellent "Hiſtory of the Voyages and Diſcoveries, made in the North." M. de la Pérouſe alſo expreſſes his thorough diſbelief of the narrative aſcribed to admiral le Fuente, and of the reality of any diſcoveries in the conteſted channel of San Lazaro, or St. Lazarus. Mr. Milet Mureau, on the contrary, acknowledges himſelf one of the ſtrongeſt partiſans for the exiſtence of a north-weſt paſſage. Indeed, when we conſider, that ſince the queſtion firſt aroſe concerning a north-weſt paſſage from Europe into the Pacific Ocean, many ſcientific and capable men have been conſtantly on the watch, and eager to purſue the inquiry, it is not at all probable that ſuch voyages as are related by Mureau, if really made, ſhould not have been fully verified; and that there ſhould remain no other traces of them than a kind of vague tradition.

During almoſt a whole century, if we except the conteſted voyage of De Fuente, the weſt coaſt of North America was not viſited by any of the nations by which it was conquered, or by any of thoſe which have been ſince called thither by the allurements of commerce. But although Spain made no maritime expedition, ſhe did not neglect to puſh by land her diſcoveries towards the north; and the excurſions which ſhe planned and ordered, at different periods, led to a diſcovery, to the eaſtward of California, of the rich provinces of Sonora and Cinaloa, which ſee. In 1684, the marquis de la Laguna, viceroy of Mexico, diſpatched two ſhips with a tender, to make diſcoveries of the lake of California, of which he brought back but an indifferent account; though he was among the firſt who aſcertained its being joined to the continent of America, and contiguous to that of Aſia. It is ſaid, however, that we owe to father Caino, a German jeſuit, the abſolute certainty that California is a peninſula, joining to the continent of New Mexico, and the more northern parts of South America. He landed on the former from the iſland of Sumatra, and paſſed to the latter without croſſing any other water than the river Azal, into which the Rio Colorado falls, in about the 35th degree of north latitude. Dr. Robertſon obſerves, that the uncertainty of geographers with reſpect to this point is remarkable, as Cortes ſeemed to have ſurveyed its coaſt with great accuracy. The archbiſhop of Toledo has publiſhed from the original, in the poſſeſſion of the marquis del Valle, the deſcendant of Cortes, a map drawn in 1541, by the pilot Domingo Caſtillo, in which California is laid down as a peninſula, ſtretching out nearly in the ſame direction which is now given to it in the beſt maps, and the point where Rio Colorado enters the gulf is marked with preciſion. Towards the cloſe of the 17th century, the Jeſuits, who had great merit in exploring the neglected province of California, and in civilizing its rude inhabitants, imperceptibly acquired a dominion over it as complete as that which they poſſeſſed in their miſſions in Paraguay, and they laboured to introduce into it the ſame policy, and to govern the natives by the ſame maxims. In order to prevent the court of Spain from conceiving any jealouſy of their deſigns and operations, they ſeem ſtudiouſly to have depreciated the country, by repreſenting the climate as ſo diſagreeable and inſalubrions, and the ſoil as ſo barren, that nothing but a zealous deſire of converting the natives could have induced them to ſettle there. Several public-ſpirited citizens endeavoured to undeceive their ſovereigns, and to give them a better view of California; but without effect. At length, on the expulſion of the Jeſuits from the Spaniſh dominions, the court of Madrid, as prone at that juncture to ſuſpect the purity of the order's intentions, as formerly to confide in them with implicit truſt, appointed don Joſeph Galvez, whoſe abilities afterwards raiſed him to the high rank of miniſter for the Indies, to viſit that peninſula. His account of the country was favourable; he found the pearl-fiſhery on its coaſts to be valuable, and diſcovered mines of gold of a very promiſing appearance. From its vicinity to Cinaloa and Sonora, it is probable, that if the population of theſe provinces ſhould increaſe to the degree that may reaſonably be expected, California may, by degrees, receive from them ſuch a recruit of inhabitants, as to be no longer reckoned among the deſolate and uſeleſs diſtricts of the Spaniſh empire. To this intelligent miniſter, Spain is indebted for a new diſtribution of government in its American provinces, and for ſeveral important alterations in the ſtate of their police and revenue, as well as a general reformation of the tribunals of juſtice in America. Since the limits of the viceroyalty of New Spain have been conſiderably circumſcribed, four of its moſt remote provinces, viz. Sonora, Cinaloa, California, and New Navarre, have been formed into a ſeparate government; and in time, the beneficial effects of this arrangement may be very conſiderable. Under the immediate inſpection of a governor, to whom theſe rich provinces are ſpecially committed, they muſt riſe into importance and proſperity: and in common with many other diſtricts of America, long depreſſed by the languor and feebleneſs natural to provinces which compoſe the extremities of an over-grown empire, they may be animated with vigour and activity, when brought ſo near the ſeat of power as to feel its invigorating influence.

It was not till the year 1741, that Beering and Tchirikow, in the ſervice of Ruſſia, diſcovered the north-weſt coaſt of America; the former, towards the 58th parallel; the latter, towards the 56th. Since that period, the diſcoveries of the Ruſſians have extended from the parallel of 56° to the moſt northern part of the weſt coaſt; and they have compriſed, in the ſurveys which they have made of it, the peninſula of Alaſka, and the long chain of the Aleutian iſlands, both belonging to the continent of America.

After a period of 167 years of lethargy, the ſpirit of diſcovery, and the taſte for expeditions to the north, revived among the Spaniards. Accordingly, in 1769, veſſels were diſpatched from the port of San Blas, under the command of don Vincente Vila, in order to eſtabliſh a preſidio at the harbour of San Diego, in N. lat. 33° 40′, off the iſthmus of California; and another at that of Monterrey in N. lat. 36° 38′ 25″; but this expedition afforded no diſcovery; however, after a whole year of reſearches and fatigue, the Spaniards ſucceeded in finding again the harbour of Monterrey, the latitude of which had been indicated to them by Viſcaino in 1602. Diſcoveries in higher latitudes were ſuſpended at this time; becauſe an object of greater importance, and for the accompliſhment of which, Don Joſeph Galvez had been commiſſioned from Spain, occupied the whole attention, and all the efforts of government. In 1775, a ſecond expedition, under the direction of Don Juan de Ayala, and of his pilot Don Franciſco Antonio Maurelle, effected the diſcovery of ſome capes, and of ſome bays and harbours between the 47th and 57th parallels. This voyage made known the harbour of Trinidad in N. lat. 41° 7′; Cape Meſari, in 45° 50′; Cape St. Auguſtin, in 55°; port Bucarelli, in 55° 17′; mount San Jacinto, and Cape del Engano, in 57° 2′; Guadalupa bay, in 57° 11′, in its north part; the harbour of Los Remedios, in 57° 18′; and ſir Francis Drake's harbour of Franciſco, in 38° 18′. A third and a fourth voyage in 1778 and 1779, made no additional diſcovery; and the ſecond merely afforded the aſſurance that the Ruſſians had formed fixed ſettlements on ſeveral points of the high latitudes. But as far back as 1778, while the Spaniards were employed in a minute ſurvey of their port Bucarelli (ſee Bucarelli), the firſt of navigators, as he is deſervedly denominated by M. Fleurieu, Captain Cook, carried his talents, experience, and information, towards the north-weſt coaſt of America; and Europe owes to his laborious reſearches the firſt certain knowledge that ſhe has had of the weſt part of the new world. He made the land on the 7th of March 1778, in the latitude of 44°. Thwarted by the winds, he could only diſtinguiſh a few capes or points of land, called Cape Gregory, Cape Perpetua, and Cape Foulweather: the firſt of the three, or Cape Gregory, which he places in 43° 10′, appears to be Aguilar's Capo Blanco, ſo called by him in 1603. He loſt the land again till he reached it in 48°, where he perceived, at a diſtance, in 48° 15′, a cape which he named Cape Flattery. At length, after long ſtruggling with adverſe winds, he ran in for the land, in the latitude of 49° 36′, and anchored in a bay which he firſt called King George's Sound, and known among the inhabitants of the country by the name of "Nootka." This Nootka Spain claimed in 1790, as an integral part of her American dominions. Having examined a few points above the 56th parallel, he diſcovered, in 60°, Prince William's Sound, and Cock's river; and having rounded the peninſula of Alaſka, he viſited ſome of the Aleutian iſlands (ſee Aleutian); and thence advancing to the higheſt latitudes which the ice permits navigators to reach, he blended his diſcoveries with thoſe which the Ruſſians had made ſince the year 1745. Cook's voyage made known to England the new and valuable articles which thoſe lands offered to her commerce; it ſhewed the poſſibility of rivalling the Ruſſians in the fur trade, and of ſharing with them the great profits that may be obtained in barter with the empire of China, by the ſkins of animals, which are the treaſures of the foreſts of north-weſt America; in ſhort, "he opened a new career to the ever-increaſing activity of a nation, whoſe commercial operations embrace the two hemiſpheres throughout the whole circumference of the globe." In 1786, La Pérouſe directed his courſe towards the N.W. coaſt of America, and made the land on Beering's mount St. Elias, in the latitude of 60°; he ranged along the lands of the continent for an extent of 470 leagues from that parallel to the harbour of Monterrey, and particularly applied himſelf to the examination of thoſe parts of the coaſt from which captain Cook had been repelled by contrary winds; he diſcovered a fine harbour in N. lat. 58° 37′, which he called "Port des Français," (which ſee); and in the courſe of his ſurveys, which were both minute and accurate, he verified and confirmed ſome of the diſcoveries of 1775, which the Spaniards had ſcarcely indicated.

Of Monterrey, and the adjacent country, La Pérouſe has given a particular account, of which we ſhall avail ourſelves under that article. This is the place of reſidence of the governor of the two Californias, the northern and ſouthern, or the New and Old. This government is ſubordinate to the vice-royalty of Mexico; and La Pérouſe informs us, that it extends to more than 800 leagues in circumference, for the maintenance of which 282 ſoldiers of cavalry are found ſufficient. Theſe garriſon five ſmall forts, and furniſh detachments of four or five men to each of the 25 miſſions, or pariſhes, into which the provinces of Old and New California are divided. Theſe ſmall guards ſuffice to keep in ſubjection about 50,000 wandering Indians, who often change their reſidence according to the fiſhing and hunting ſeaſons, and who are ſpread over this vaſt extent of the American continent. Of theſe, about 10,00 have embraced Chriſtianity. Theſe Indians are generally little and feeble, and evince no ſigns of that love of independence and liberty, which characteriſes the northern nations, to whoſe arts and induſtry they are ſtrangers. Their complexion very nearly reſembles that of thoſe negroes, whoſe hair is not woolly: that of this nation is long, and very ſtrong, and they cut it four or five inches from the roots. Several of them have beards, while others, according to the miſſionaries, never had any; though this is a point not decided in the country itſelf. The governor who had travelled much in the interior part of the country, and had lived with the ſavages during 15 years, aſſured La Pérouſe that thoſe who had no beard, had extracted it with bivalve ſhells, uſed as pincers. The preſident of the miſſions, however, who had reſided as long in California, maintained the contrary. Theſe Indians are very expert in the uſe of the bow, but they rarely pull the bow till they creep within 15 paces of their prey. In hunting, they crawl on the ground, with ſtags' heads fixed on their own, and thus approach a herd of ſtags, till being within reach of them, they kill them with their arrows. Loretto is the only preſidio or military fort of Old California, on the eaſtern coaſt of that peninſula. Its garriſon conſiſts of 54 cavalry men, and furniſhes detachments to the 15 following miſſions, of which the functions are performed by the Dominican monks, who have ſucceeded the Jeſuits and Franciſcans. Theſe laſt, however, remain in undiſturbed poſſeſſion of the ten miſſions of New California. The 15 miſſions of the department of Loretto are, San Vincente, S. Domingo, El Roſario, S. Fernandez, S. Franciſco de Borgia, S. Gertrude, S. Ignacio, La Guadalupe, Santa Roſalia, La Conception, S. Joſef, S. Franceſco Xavier, Loretto, S. Joſef de Cabo Lucar, and Todos los Sanctos. About 400 Indian converts, collected round theſe 15 pariſhes, are the only fruit of the long apoſtleſhip of the various religious orders, who have ſucceſſively undertaken this painful duty. As yet there is only one Spaniſh village. Indeed the climate is unhealthy, and the province of Sonora, which forms the boundary of the Vermilion ſea to the weſtward, and California to the northward, is much more attractive to the Spaniards, who find there a fertile ſoil, and abundance of mines; which are, in their eſtimation, more important objects than the pearl fiſhery of the peninſula, which requires a conſiderable number of ſlaves who can dive, and whom it is difficult to procure. Yet North California, notwithſtanding its great diſtance from Mexico, appears to combine much greater advantages. For an account of its preſidios, ſee NEW ALBION. The Franciſcans eſtabliſhed their firſt miſſion here in 1770: and they have now ten, comprehending 5143 converted Indians. The piety of the Spaniards has kept up the preſidios at a great expence, apparently from no other motive than that of converting and civilizing the Indians of theſe countries. But from later diſcoveries, a new branch of commerce may procure to Spain more ſolid advantages than the richeſt mines of Mexico; and the ſalubrity of the air, the fertility of the ſoil, and the abundance of furs, for which they have a certain market in China, give to this part of America the moſt important advantages over Old California, whoſe unwholeſomeneſs and ſterility cannot be compenſated by a few pearls collected from the bottom of the ſea.

Before the Spaniards ſettled in this country, the Indians of California only cultivated a little maize, and almoſt entirely ſubſiſted on fiſhing and hunting. No country abounds more with all ſorts of fiſh and game. Hares, rabbits, and ſtags, are very common; otters and ſea-wolves abound towards the north; and in winter they kill a great number of bears, foxes, wolves, and wild cats. The coppices and plains are full of ſmall, creſted patridges, which flock together in covies of 3 or 400: they are fat and well flavoured; and the trees afford lodgment to a vaſt variety of birds and fowl. As to the fertility of the ſoil in the country adjoining to the preſidio of Monterrey, it exceeds conception. The harveſts of maize, barley, wheat, and peas, can only be compared to thoſe of Chili; and the average produce of corn is from 70 to 80 fold. Fruit trees are hitherto ſcarce; but the climate is well adapted to them, being nearly that of the ſouthernmoſt provinces of France. The cold is never more ſevere, and the heats of ſummer are much more moderate, in conſequence of the perpetual miſts, which fecundate the earth with conſtant moiſture. The foreſts contain the pine-apple fir, cypreſs, ever-green oak, and weſtern plane-tree. La Pérouſe pays a tribute of ſingular reſpect to the monks of this preſidio; and contraſts their diſpoſition and conduct, very much to their advantage, againſt thoſe of the monks of Chili.

The huts of the Indian villages, in both Californias, are the moſt miſerable that can be conceived. Their form is circular, and ſix feet in diameter by four feet high. Some ſtakes about the ſize of the arm being fixed in the ground, and brought together in an arch at top, compoſe their frame, and eight or ten truſſes of ſtraw, badly arranged upon theſe ſtakes, defend the inhabitants more or leſs from the rain and wind. The Indians adhere to this mode of conſtructing their habitations, notwithſtanding the exhortations of the miſſionaries, alledging that they love the open air, and that they can eaſily ſet fire to their houſes when they are too much annoyed by fleas, to which vermin they are ſubject, and then rebuild them in an hour or two. Beſides, theſe habitations are moſt ſuitable to thoſe independent Indians who are perpetually changing their abode. The colour of theſe Indians, the houſe of the monks, their magazines built of brick and plaiſtered, the threſhing floor on which they tread out their corn, the cattle, the horſes, and in ſhort, every thing preſented the appearance of a plantation in St. Domingo, or any other colony. The men and women are aſſembled by the ſound of a bell, and a monk leads them to work, to church, and to all their employments. The monks are the temporal, as well as ſpiritual ſuperiors, and the whole produce of the earth is committed to their management. The day is divided into ſeven hours of work and two of prayer; but four or five on Sundays and feaſt-days, which are wholly devoted to reſt and religious worſhip. Corporal puniſhments are inflicted on the Indians of both ſexes, who neglect their pious exerciſes; and many crimes, which in Europe are referred to divine juſtice, are puniſhed with chains or the ſtocks. As ſoon as a new convert is baptized, he is under the obligation of a perpetual vow; and if he deſert the religious ſociety, and return to his relations, he is ſummoned three times to come back; and if he refuſe, a party of ſoldiers is ſent by the authority of the governor, to force him away from his family, and conduct him to the miſſions, where he is condemned to receive a certain number of laſhes. The Indians, like the miſſionaries, riſe with the ſun, and then go to prayer and to maſs. During this time, barley-meal is boiled in a cauldron, and the meſs, which the Indians call "atole," and which they much like, is ſeaſoned neither with butter nor ſalt. This repaſt occupies about three-quarters of an hour, after which all go to their reſpective occupations, under the ſuperintendance of one or two monks. The employment of the women, beſides that of conducting their houſehold affairs, is the management of their children, and the roaſting and grinding of their grain; they alſo ſpin their wool, and manufacture ſome coarſe ſtuffs. At noon the bells ring for dinner, and the Indians partake of a meſs ſimilar to that of their breakfaſt, called "pouſſole," except that it is thicker, and contains, beſides the corn and maize, peas and beans. From two o'clock they return to work till four or five, and cloſe the day with prayers, and with another meſs of atole. The diſtribution of theſe meſſes is faithfully made; and the leaſt diſhoneſty is puniſhed by the laſh, which is ordered by Indian magiſtrates, called "Caciques." The puniſhment inflicted on the women is private; but that of the men is public, that it may ſerve as an example. Their rewards conſiſt in ſmall diſtributions of grain; and on feaſt-days, their meſs is beef, which many eat raw.

Such is their honeſty, that no example occurs of their robbing one another, though they have no other door than a truſs of ſtraw laid acroſs the entrance when the whole family is abſent. The men in theſe miſſions have ſacrificed more to Chriſtianity than the women; for to them polygamy was allowed, and it was even the cuſtom to marry all the ſiſters of a family. The monks made themſelves the guardians of female virtue: for, about an hour after ſupper, they lock up all thoſe whoſe huſbands are abſent, as well as all girls above nine years old, and place them under the care of matrons during the day; but all theſe precautions are in ſome caſes inſufficient. The converted Indians retain all their ancient cuſtoms, that are not forbidden by their new religion; the ſame huts, the ſame games, and the ſame dreſſes. The richeſt wear a cloak of otter-ſkin, covering the loins, and reaching below the middle; others wear only a piece of cloth to cover their nakedneſs, and a little cloak of rabbit-ſkin, covering the ſhoulders, and reaching to the loins, and tied with a pack-thread under the chin. The women's dreſs conſiſts of a cloak of ſtag's ſkin badly tanned. Young girls under nine years old, have only a girdle round the loins, and the boys are wholly naked. The hair of both men and women is cut four or five inches from the roots. The Indians of the "Rancherias," or villages of independent Indians, having no iron utenſils, perform this operation with fire-brands, and paint their bodies red, which they change into black when in mourning. They retain an affectionate remembrance of their deceaſed friends, and are eaſily melted into tears by the mention of them: nevertheleſs, children ſcarcely know their own father, becauſe they deſert his hut as ſoon as they are able to provide for themſelves; but they are more durably attached to their mother, who brings them up with care and tenderneſs. The old men of the Rancherias, who are no longer able to hunt, live at the joint expence of the whole village, and are treated with general reſpect. Their arms are the bow and arrow, pointed curiouſly with a flint. Theſe Indians neither eat their priſoners, nor their enemies killed in war: although when they have conquered, and put to death ſome chiefs, and very brave men in the field of battle, they eat ſome morſels of their bodies, thus doing homage to their valour, and apprehending that ſuch food would increaſe their courage. They are accuſtomed, like the Canadians, to take off the ſcalp of the vanquiſhed, and to tear out their eyes, which they have the art of preſerving from corruption; and it is their practice to burn the dead, and to depoſit their aſhes in a morai. The mixed government exerciſed in the miſſions of California is, with regard to the Indians, a real theocracy; for they are taught to believe that their ſuperiors hold an immediate and conſtant intercourſe with God, and that they bring him down each day upon the altar. Under favour of this opinion, the fathers live in the midſt of the villages in perfect ſecurity, nor do they ſhut their doors during the night. Murder is very uncommon even among the independent tribes, and is puniſhed only by general contempt; but if a man falls under the united attack of ſeveral aſſailants, he is ſuppoſed to have deſerved his fate, as he had drawn upon him ſo many enemies. M. la Pérouſe obſerves, that the ſenſe of taſte is that which theſe people moſt delight in gratifying; and the word "Miſſich," which in their language ſignifies a good man, likewiſe denotes ſavoury food. Among other peculiarities of theſe people is their gaming; leſs remarkable for the ingenuity of their games than for the nature of the ſtakes. Among the Indians of the miſſions, the common ſtake is beads; but among the independent Indians, the favours of their women are the prizes. New California, we are told, cannot yet reckon a ſingle ſettler, notwithſtanding its fertility; except a few ſoldiers who are married to Indian women. La Pérouſe obſerves, that the adminiſtration of the villages converted to Chriſtianity would be more favourable to population, if property and a certain degree of liberty formed its baſis. However, ſince the eſtabliſhment of the ten different miſſions of North California, the holy fathers have baptized 7701 Indians of both ſexes, and have buried only 2388. Almoſt all the Franciſcan miſſionaries are Europeans, and they have a college and monaſtery at Mexico, whoſe guardian is, in America, the general of his order; and this houſe has its ſuperior in Europe.

The ſea-otter ſkins are as common in the northern parts of California, as in any other part of America; they are to be found as far to the ſouthward as 28° N. lat.; but the ſouthern ſkins are inferior in quality to thoſe in the ſeas that are frequented by the Ruſſians. The eaſtern and ſouthern coaſts of Old California are much richer in the varieties of its ſhells than the New, and furniſh oyſters, whoſe pearls are equal in beauty and ſize to thoſe of Ceylon, or the Perſian gulf.

There is, perhaps, no country where the various languages of the inhabitants are ſo extremely multiplied as in North California. The numerous tribes that divide that country live in an inſulated manner, although ſituate very near each other, and have each a ſeparate language. Monterrey, and the miſſion of San Carlos, which is dependent upon it, comprehend the country of the Achaſtlians, and the Ecclemachs. The languages of theſe people, partly, united in the ſame miſſion, would ſoon form a third, if the converted Indians diſcontinued their intercourſe with thoſe of the Racherias. As the Achaſtlians have few abſtract ideas, they have very few words to expreſs them; nor do they appear to diſtinguiſh by different names all the ſpecies of animals, or of common vegetables. They diſtinguiſh the plural from the ſingular, and conjugate ſome tenſes of verbs; but they have no declenſions, and their ſubſtantives are much more numerous than their adjectives. They never uſe the labials P and B, nor the letter X. The moſt common initial conſonants are T and K; but their terminations are very various. They uſe their fingers in counting as far as ten; few of them being able to do it by memory, or without the aſſiſtance of ſome external ſign. The country of the Ecclemachs extends above twenty leagues to the eaſtward of Monterrey. Their language is totally different from all thoſe of their neighbours, and has even a greater reſemblance to the languages of Europe than to thoſe of America. The dialect of this tribe, however, is more copious than that of the other nations of California, though it cannot be compared with the languages of civilized nations. Should it be inferred from hence, that the Ecclemachs are foreigners in this part of America, it muſt be at leaſt admitted that they have inhabited it for a long time; ſince they differ neither in colour, in countenance, nor in their general form, and external appearance, from the other nations of that country. La Pérouſe inſtituted a compariſon between the Aborigines of California, and thoſe of Chili, ſituate at the ſame diſtance from the line in the ſouthern with that of the others in the northern hemiſphere; and he obſerves that the Californians are taller, and the muſcles more ſtrongly marked; but they are not ſo courageous or intelligent. They have low foreheads, black and thick eye-brows, black and hollow eyes, a ſhort noſe depreſſed at the root, and their cheek-bones projecting. They have a mouth rather large, thick lips, ſtrong and fine teeth, and a chin and ears of the common form. They are extremely indolent and incurious, and almoſt ſtupid. In walking they turn in their toes, and even their ſtep, and by their infirm and tottering gait indicate their characteriſtic puſillanimity. The women have ſome qualities peculiar to themſelves, and not obſervable in thoſe of Chili. They are taller, and their limbs are more regularly formed; their figure is generally better defined, and their countenance leſs forbidding. The hair of the people of both theſe countries is nearly ſimilar; but the Californians have it in greater abundance than the natives of Chili. Many of the men, however, are devoid of beard, and the women have very little hair on any part of the body; but this is ſaid to be the effect of art, as both the men and women pluck off the hair with bivalved ſhells or a cleft ſtick.

Theſe Americans paint their ſkin by way of ornament. They alſo pierce their ears, and wear in them trinkets of various kinds and faſhions. Their ſkin is tawny, and their nails of a lighter colour than thoſe of the inhabitants of Chili. At Chili and California the appearance of the beard and the change of the voice announce the age of puberty in males about their 13th year. The girls attain to puberty about the age of eleven or twelve. Theſe nations have nearly the ſame paſſions, the ſame ſports, and the ſame mode of living; and they are equally violent in the expreſſion of joy and anger, which the ſlighteſt occaſion is ſufficient to excite. Their food is commonly game or fiſh; and their times of eating are ſometimes determined by their appetite; but in general each family aſſembles at the cloſe of the day to their common repaſt. The Californians make no uſe of vegetables, except a few pine-nuts, and other ſummer fruits, which, however, conſtitute no eſſential part of their food. Idleneſs makes them abſtemious, but an abundance tempts, and they become voracious gluttons. Theſe nations are divided into hordes, each of which commonly forms a little hamlet; and their habitations are huts or cabins of different ſhapes, and conſtructed of different materials. Polygamy is allowed among them, and their marriages laſt no longer than is agreeable to both parties. To the excluſive poſſeſſion of their women they attach little importance, often endeavouring to make a market of their favours, which they ſell for a piece of old iron, or a few glaſs beads. Each family ſeems to poſſeſs a government peculiar to itſelf; and has its chief, its huts, its canoes, its implements for the chace and for fiſhing, and, indeed, all the various means of defence or ſubſiſtence. Some chiefs ſeem to have the command of ſeveral families. Theſe chiefs excel the other inhabitants in ſtature, ſtrength and courage; they are generally covered with large ſcars, as tokens of their valour, and diſtinguiſhed by a kind of extraordinary decoration in their head-dreſs and habiliments. The dreſs of the women conſiſts of a leathern ſhift, deſcending to the middle of the leg, and a mantle of ſkins, which covers them from the ſhoulders to the knees. The men wear a ſimilar mantle, and have a ſhirt of leather, and buſkins of ſeal's ſkin; but their feet are commonly naked. As great changes of temperature are experienced in California at different ſeaſons of the year, the inhabitants are ſubject to diſeaſes peculiar to the country. Sore throats, catarrhs, pleuriſies, and peripneumonies, are the ordinary diſeaſes of the winter ſeaſon; for which they recur to decoctions made of plants, and applied to the parts affected. Ephemeral and intermittent fevers, and dyſpepſia, are chiefly prevalent in ſpring and autumn; and as remedies they excite vomiting by forcing the finger down the throat, and procure copious ſweats by a kind of ſtove baths. The diſeaſes moſt general in ſummer are fevers of various kinds, putrid, petechial, inflammatory and bilious, together with the dyſentery. To one or other of theſe the patient generally falls a victim, unleſs the efforts of nature are ſufficient to produce a ſalutary evacuation, by ſtool, urine, or perſpiration. Beſides theſe diſeaſes, the inhabitants of California are liable to nervous fever, rheumatiſm, prurient eruptions, ophthalmia, ſyphilis, and epilepſy. Syphilis ſeems never to have been introduced among the natives of California till after their communication with the Europeans, who ſettled in that part of the continent. The means of cure in which they moſt confide are the ſand-bath, which they call "tamaſeul," and a decoction of ſudorific plants taken alternately. The women, though liable to ſimilar maladies with thoſe of the men, ſuffer little inconvenience during the time of geſtation, and are almoſt always delivered with eaſe. As ſoon as the infant is born, the midwives tie the umbilical cord, plunge the child into cold water, and cleanſe it from the viſcid humour with which its body is covered. The moment the mother is delivered, ſhe bathes in the ſea or a neighbouring river, and is then ſeated on a hot ſtove, and covered with furs. When the ſweats ſubſide, and the ſtove cools, ſhe plunges herſelf again in cold water, and ſometimes repeats this proceſs for ſeveral ſucceſſive days. The time of ſuckling is unlimited; but it commonly extends to eighteen or twenty months; and the infants are ſwaddled by wrapping them up in furs, after having previouſly ſtretched out their arms and legs at full length, and fixed them in that ſituation by ſeveral bandages of leather. They then place the infant in a piece of bark, proportioned to its ſize, and of the form of a hollow tile, to which he is faſtened by ſtraps or bandages of leather.

As to the religion of the Californians it is not eaſy to determine concerning it; but it ſeems moſt probable that before their intercourſe with the Europeans they had no temples, altars, oratories, nor any other place ſet apart for religious exerciſes. No outward profeſſion of religion appeared in feſtivals, prayers, vows, or expiations. It is probable, however, that they had ſome confuſed notion of an inviſible being; but to what extent their ſpeculations carried them, it is impoſſible to ſay, as all our firſt relations concerning them have been tranſmitted to us by the jeſuits and other miſſionaries. In a country ſo extenſive and comprehending ſo many degrees of latitude, the climate muſt be very various; and the ſoil and its productions muſt depend on collaterial circumſtances connected with their ſituation, as it is nearer to the ſea and to the rivers, or more remote from them. In California, there falls in the morning a great quantity of dew, which, ſettling on the roſe-leaves, candies, and becomes hard like manna, having all the ſweetneſs of refined ſugar, without its whiteneſs. In the heart of the country, there are alſo plains of ſalt, quite firm, and clear as cryſtal, which, conſidering the vaſt quantities of fiſh on its coaſts, might render it an invaluable acquiſition to an induſtrious nation. The pearl-fiſhery on its coaſts, and its interior mines of gold, might alſo ſupply materials for a profitable commerce. The chief town of California is St. Juan; and the number of its inhabitants has been eſtimated at 300,000; but every calculation of this kind muſt be very vague and uncertain. For a further account of this country, and of the weſtern coaſt of North America, ſee New Albion. See alſo Francais, Francesso, Fur *trade*, Monterrey, Nootka, Norfolk-*Sound*, &c. Marchand's Voyage by Fleurieu, vol. i. La Pérouſe's Voyage, vol. i. and ii.

California, *gulf of*, called alſo *purple*, *vermilion* or *red ſea*, ſeems to be an æſtuary of two large rivers, and ſeparates California in part from Mexico. The coaſts of the peninſula, towards this gulf, are covered with inhabited iſlands, ſuch as thoſe of St. Clement, Paxaros, St. Anne of Cedars, ſo called from the number of theſe trees of a large ſize which it produces, St. Joſeph, and a multitude of others. But the iſlands beſt known are three lying off cape St. Lucas, towards the Mexican coaſt, which are called Les tres Marias, or the "Three Maries." Theſe are ſmall, but ſupply good wood and water, ſalt-pits, and abundance of game; and therefore the Engliſh and French pirates have ſometimes wintered there, when they have been bound on cruiſes in the South ſeas.

CALIGA, in *Roman Antiquity*, was the proper ſoldier's ſhoe, made in the ſandal faſhion, without upper leather to cover the ſuperior part of the foot, though otherwiſe reaching to the middle of the leg, and faſtened with thongs. The ſole of the caliga was of wood, like the ſabot of the French peaſants, and its bottom ſtuck full of nails; which clavi are ſuppoſed to have been very long in the ſhoes of the ſcouts and ſentinels; whence theſe were called by way of diſtinction, "caligæ ſpeculatoriæ;" as if by mounting the wearer to a higher pitch, they gave a greater advantage to the ſight: though others will have the "caligæ ſpeculatoriæ" to have been made ſoft and woolly, to prevent their making a noiſe. Plin. Nat. Hiſt. lib. ix. cap. 18. lib. xxxiv. cap. 14. Hard. Suet in Calig. cap. 9. and cap. 52.

From theſe caligæ it was that the emperor Caligula took his name, as having been born in the army, and afterwards bred up in the habit of a common ſoldier; hence called "Caligatus."

A ſort of caligæ was alſo worn by monks and biſhops, when they celebrated maſs pontifically. Du-Cange.

St. Jerome (Ad Euſtochium, de Cuſtod. Virg. t. i. p. 140.) uſes the word "caliga" to expreſs that covering for the feet which Chriſt forbade his diſciples to wear, when he ſent them to preach the goſpel in his life-time, and which is oppoſed to "ſandals," Mark vi. 9.; though St. Jerome, in the impetuoſity of his zeal, ſuppoſes the apoſtles were to walk at times abſolutely barefoot. Theſe caligæ then ſeem to mean buſkins, or rather ſhort boots, deſigned to cover the feet ſo entirely, as to guard them, as well as the lower part of the leg, from injury by ſtones, thorns, &c.; whereas ſandals conſiſted merely of ſoles at the bottom of the feet, faſtened by leathern thongs, which left the foot very much uncovered, and expoſed to injuries. St. Jerome annexes to theſe "caligæ" the epithet "latæ," broad, which does not ſeem to be appropriate; and, therefore, ſome have ſuppoſed a corruption in the preſent reading of *latæ* for *luteæ*, yellow; and this is the colour of the leather of which the Arabs make their boots.

CALIGATI, an appellation given by ſome ancient writers to the common ſoldiers in the Roman armies, by reaſon of the caliga which they wore.

The caliga was the badge, or ſymbol of a ſoldier; whence to take away the caliga and belt, imported a diſmiſſion or caſhiering.

CALIGINOSUS, in *Entomology*, a ſpecies of Carabus that inhabits America, the colour of which is black; thorax ſquare and ſmooth; antennæ pitchy. Fabr. &c. Obſ. This inſect is further diſtinguiſhed by having two impreſſed dots on the head.

CALIGO, or Caligatio, in *Medicine*, an opacity, or cloudineſs of the anterior ſurface of the cryſtalline, cauſing a dimneſs or ſuffuſion of ſight. The caligo is the ſame with what the Greeks calls αχλυς, achlys.

CALIGULA, Caius Cæsar, in *Biography*, the fourth Roman emperor, was the ſon of Germanicus and Agrippina, born A.U.C. 765, A.D. 12.; and derived his ſurname from "caliga," a kind of military boot, which he wore in conformity to thoſe of the common ſoldiers, and with a view of engaging their affections. At an early period he was a complete maſter of diſſimulation; he concealed his natural ferocity under an aſſumed modeſty; nor did he manifeſt any ſigns of ſorrow or reſentment, when his mother was condemned, and his brothers were exiled and impriſoned. In his 20th year he was the favourite of the people from the reſpect they entertained for the memory of his father; and on this account he was hated by Tiberius. Of this he was well apprized; and, therefore, during his reſidence with him at Capreæ, he had recourſe to every art for vanquiſhing the prejudice which the emperor had conceived againſt him, and for conciliating his favour. With this view he ſtudied the taſte, the humours, the language, and even the tone of voice of Tiberius, changing, as occaſions ſeemed to require, both his countenance and conduct, in order to fix his attachment; nor was he wanting in his endeavours to ſecure the intereſt of all who had acceſs to his grandfather. As a counterbalance to the power of Sejanus, who had ſunk in the eſtimation of Tiberius, and whom he determined to diſgrace, he reſolved to advance his obſequious grandſon; and having allowed him to aſſume the "toga virilis," he inveſted him with the dignity of pontiff, and intimated to the ſenate his deſign of appointing him his ſucceſſor to the empire. Tiberius, however, well knew the natural ferociouſneſs of his temper; but he hoped that his paſſion for muſic and dancing, and the debauchery to which he was addicted, would be the means of ſoftening his ſavage diſpoſition. His hopes indeed were deluſive; and he therefore augured the injuries he would commit, and called him a public peſt, that lived to plague him and mankind. To this purpoſe he deſcribed him as "a ſerpent that would be fatal to the Romans, and a Phaeton that would ſet fire to the univerſe." In a converſation about Sylla, when young Caius ridiculed his character, Tiberius, whoſe natural penetration led him into a thorough acquaintance with his character, obſerved to him; "You will have all Sylla's vices, and not one of his virtues." And, on another occaſion, when he had his two grandſons before him, he embraced Gemellus with tears in his eyes, and ſaid to Caius, whoſe countenance manifeſted diſpleaſure, "You will ſlay him, and another ſhall ſlay you." The firſt wife of Caius was Claudia, the daughter of Marcus Silanus, a ſenator of diſtinction; but his debauchery in his youth was ſuch, that he was detected by his grandmother Antonia, in ſcandalous familiarities with his own ſiſter Druſilla. Upon the death of Claudia, he intrigued with Ennia, the wife of Macro the prætorian prefect, who concurred in this infamous buſineſs, and, in conſequence of it, aſſiſted him by his influence in ſecuring the ſucceſſion. Although Tiberius, notwithſtanding his declared intention, heſitated about the appointment of a ſucceſſor, inſomuch that he is ſaid by will, to have joined with Caius his other grandſon Tiberius Gemellus, as co-heir; Caius was acknowledged and proclaimed emperor immediately on the death of his grandfather by the Prætorian guards, and Macro was ſent to the ſenate with Tiberius's will in order to have it annulled. In order to accompliſh this purpoſe, he repreſented, on the part of Caius, that Tiberius was not ſound in his underſtanding when he made it, and that this plainly appeared by his appointing a child to govern them, who was not yet old enough to ſit among them. The ſenators who hated Tiberius thought theſe reaſons ſufficient, and accordingly ſet aſide the will. This event happened A. U. C. 790, A. D. 37. The ſequel of this reign was marked with a variety of tranſactions, which indicated abſolute inſanity. At its commencement, indeed, it was the occaſion of univerſal joy and congratulation; ſo that in three months after the acceſſion of Caius to the empire, no leſs than 160,000 victims were ſacrificed in thanſgiving to the gods; and nothing was ſeen for ſeveral months but feaſting and rejoicing through the whole extent of the Roman empire. Caius began his reign by ſeveral popular acts, which ſeemed to encourage theſe high expectations. He profeſſed great reſpect for the ſenate, releaſed all that had been impriſoned by the orders of Tiberius, recalled all exiles, aboliſhed for the time to come all accuſations of high treaſon, and put a ſtop to all proceedings that had already began. He pretended to burn all papers relating to charges of this kind, left by Tiberius; but in the iſſue it appeared, that, whilſt he preſerved the originals, he burnt only copies. He alſo diſplayed a pious and affectionate reſpect to the memory of all his deceaſed relations, and treated thoſe who ſurvived with every token of honour. He diſcharged all the legacies that had been bequeathed by Tiberius and Livia; and exhibited his generoſity, as it was called, in largeſſes to the people, and in public ſpectacles which were conducted with extraordinary ſplendour and magnificence. He even affected a regard for liberty, by reſtoring to the people the right of election to certain offices, of which Tiberius had deprived them, and by allowing the works of ſeveral patriotic writers to be freely circulated; and with a pretended zeal for morals, he baniſhed all the miniſters of the infamous debaucheries of his predeceſſor. This conduct was in a high degree gratifying to the people; and a dangerous illneſs, with which the emperor was attacked at this period, cauſed general alarm, and produced expreſſions of concern and wiſhes for his recovery. As ſoon as he was reſtored to his uſual health, his conduct appeared to be quite changed, and to mark a character the moſt depraved and deteſtable. The firſt act by which he diſcovered his natural ferocity was the death of the young and inoffenſive Gemellus; and this was ſoon ſucceeded by that of his father-in-law Silanus, and of his benefactors Macro and his wife. Many ſenators and perſons of diſtinction were alſo ſacrificed to his political jealouſy; and others became victims either to the mere wantonneſs of ſport, or his innate love of cruelty. Of his inceſtuous paſſion he gave proof by marrying his ſiſter Druſilla, on occaſion of whoſe death he abandoned himſelf to the phrenzy of grief. As an inſtance of his inſanity, we may mention his claim of divine honours, together with his inſtitution of prieſts and erection of temples for the worſhip of his own divinity; whilſt he hurled defiance againſt Jupiter. Similar to this and more extravagant in degree, was the honour he paid to his horſe "Incitatus;" for which he erected a palace, aſſigned domeſtics, and a public table, and conſtructed a marble ſtable and ivory rack, giving him gilt barley and wine out of a golden cup, and ſwearing by his health and fortune; and, beſides, he is ſaid to have deſigned him for conſul. He married and repudiated ſeveral wives, and at length his attachment was permanently fixed to Cæſonia, who, without youth and beauty, and although ſhe had been the mother of three children by another huſband, contrived to engage his affection by a correſponding diſſoluteneſs of manners. Notwithſtanding innumerable enormities, which rendered him the juſt object of deteſtation, and for which the only plea muſt be that of inſanity; the Roman ſenate and people diſgraced themſelves by their baſe adulation and ſervile ſubmiſſion. Such was the degree of infatuation and depravity which this monſter of folly and iniquity diſplayed on a variety of occaſions, that he ſeemed to have loſt all ſenſe of ſhame; and to have manifeſted, without diſguiſe, his hatred of all human kind. He even lamented that his reign was not diſtinguiſhed by any of thoſe public calamities, which had happened under his predeceſſors; and he openly uttered that moſt execrable wiſh "that the Roman people had but a ſingle neck, which he might cut off at one blow."

His public tranſactions correſponded in the main tenor of them with his private conduct. In imitation of Xerxes, the eaſtern deſpot, he cauſed to be built, at an immenſe expence, a bridge of boats acroſs the neck of the bay from Baiæ to Puteoli. When he had twice triumphantly paſſed it at the head of his troops, the whole ſtructure was demoliſhed. Reſolving on an expedition into Gaul and Germany, he aſſembled a large army; but having paſſed the Rhine, and marched a few miles into Germany, he haſtily returned, and under an apprehenſion of danger, which was altogether unfounded, he was conveyed over the heads of the crowd that covered the bridge, and thus reached the other ſide in ſafety. On another occaſion he cauſed his troops to ſound a falſe alarm, and ſallying to the foreſt from which the noiſe proceeded,

ceeded, he employed his men in cutting down trees for erecting trophies on account of his ſignal victory. After his return he oppreſſed the province of Gaul with enormous exactions and confiſcations, in order to fill his exhauſted treaſury. In a pretended expedition againſt Britain, he marched his whole army to the coaſt oppoſite to the iſland, and having advanced in a magnificent galley to a ſmall diſtance from the ſhore, he ſuddenly returned and ordered a ſignal of battle to be given; after which the ſoldiers, who were aſtoniſhed at this farce, were directed to fill their helmets with cockle-ſhells; and the whole ended in a trifling donative to the victorious troops. This folly was ſucceeded by a very ſerious deſign of cruelty, which was that of maſſacring, or at leaſt of decimating all the legions of the German army, which had mutinied, in his fancy, againſt his father Germanicus; but the legionaries, ſuſpecting his intention, took up their arms; and the ſavage fled haſtily to Rome, and wreaked his vengeance on the paſſive ſenate. His natural ferocity was exaſperated by the diſcovery of a plot, which had been formed againſt him, for which many perſons ſuffered death, and his ſiſters were baniſhed and deſpoiled of their property. At length he ſeems to have reſolved upon the death of the whole ſenate and principal knights; but his deſigns were rendered abortive by the reſentment of Caſſius Chærea, tribune of a prætorian cohort, whom the emperor had made the ſubject of his indecent jeſts and raillery; accordingly he determined to diſpatch the monſter, and to make an effort for the reſtoration of a free government. Availing himſelf of the concurrence of ſome perſons of ſuperior rank, who had been inſulted and injured by the emperor, a conſpiracy was formed, of which Chærea was the principal agent. The games annually exhibited in January to the honour of Auguſtus were choſen for the ſeaſon of execution. While the emperor was paſſing from the theatre to the palace, in a gallery leading to the baths, Chærea gave him a wound in the neck. The other conſpirators then ruſhed on, and with redoubled blows diſpatched the monſter, in whoſe defence no perſon appeared. His mangled body remained on the ſpot till night, when his wife, or his friend, king Agrippa, cauſed it, half burnt, to be depoſited in the earth. In order completely to finiſh the race of the tyrant, Chærea deputed an officer to put to death his wife Cæſonia, and his infant daughter, who was ſaid to reſemble her father in ferocity. An univerſal hatred of the tyrant manifeſted itſelf immediately after his death. His ſtatues were demoliſhed, his acts abrogated, and his memory as much as poſſible extinguiſhed. After a reign of three years and ten months, A.D. 41, Caligula periſhed, and left behind him a character univerſally deteſted. It is ſaid that his form, countenance, geſture, and manners, exhibited traces that were ſhocking and portentous. Deſtitute of natural talents and education, he merely applied with ſome degree of diligence to the ſtudy of elocution; but his chief attention was directed to the arts of muſic, dancing, gladiatorial exerciſes, and public ſpectacles. He was capricious and mutable to a degree bordering on madneſs; and was conſtant only in preſerving ſome form of vice or extravagance. Seneca obſerves of him, "that he ſeems to have been brought forth by nature for the expreſs purpoſe of ſhewing how much miſchief could be effected by the greateſt depravity, ſupported by the higheſt power." Sueton. Dio. Caſſius. Crevier. Gen. Biog.

CALIGUS Arctus, in *Entomology*, the name by which Mülleri diſtinguiſhes the ſpecies of Monoculus pincinus. The Caligi of this writer conſiſt of thoſe Monoculi which have the eyes marginal, two ſetaceous antennæ, and from eight to ten legs.

CALILAYA, or Tayabas, in *Geography*, a province of the iſland Luçon or Manilla in the Eaſt Indies, adjoining to Balayan and Camarines, and extending to Cape Bondo, and up the country to Mauban, on the oppoſite coaſt of the iſland. It is larger than Balayan, and is more populous.

CALIMERE, *Point* or *Cape*. See Calymere *Point*.

CALIMNA. See Calmina.

CALIMUS. See Callimus.

CALIN, the name of a ſort of mixed metal, ſeemingly compoſed of lead and tin. It is prepared by the Chineſe, and they make ſeveral utenſils of it, as tea-canniſters, coffee-pots, and the like. In ſome places alſo they cover their houſes with it as we do with lead.

CALINACRON, in *Ancient Geography*, a promontory of Bithynia, at a ſmall diſtance from the Thracian Boſphorus; called alſo Melæna.

CALINDA, or Calydna, a maritime town of Aſia Minor, in Caria; ſeated on a ſmall navigable river at ſome diſtance from the ſea. It gave name to mountains ſituate on the N.W. of the town.

CALINDŒA, a town of Macedonia, in Mygdonia. Alſo, a town of India, on this ſide of the Ganges. Ptolemy.

CALINIA, in *Botany*. (Aublet, Juſſ.) See Doliocarpus.

CALINGÆ, in *Ancient Geography*, a people of India, on the ſouth-eaſt coaſt, on the ſide of the Ganges, mentioned by Pliny, and pertaining to the Brachmans.

Calingæ *Gangaridæ*, a people of India, different from the former, on this ſide of the Ganges, whoſe capital was Parthalis. Pliny.

CALINGAPATAM, in *Geography*, a town of Hindooſtan, in the circar of Cicacole, 12 miles E.N.E. of Cicacole. N. lat. 18° 18′. E. long. 84° 20′.

CALINGII, in *Ancient Geography*, a people of Arabia Felix, whoſe capital was Mariaba. Pliny.

CALINGON, *Segogora* or *Ponta de Palmeiras*, a promontory of India, on this ſide of the Ganges, S.W. of the moſt weſterly mouth of the Ganges, on the confines of the country of the Calingæ. Pliny places it at 625 miles from the mouth of the Ganges.

CALINI, or Callynuddi, in *Geography*, a river of Hindooſtan, which joins the Ganges near Canoge.

CALINIPAXA, in *Ancient Geography*, a town of India, on this ſide of the Ganges, mentioned by Pliny, and probably the ſame with Canoge, which ſee.

CALJONG-Campany, in *Geography*, a town of the iſland of Borneo.

CALIORDI, in *Ancient Geography*, a people of the Tauric Cherſoneſus. Pliny.

CALIPH, or Khalif, denotes a ſucceſſor of Mahomet, veſted with ſovereign dignity and abſolute authority, in the ſpiritual as well as temporal empire erected by that legiſlator. The word is originally Arabic, "khalifah;" which properly ſignifies a ſucceſſor or vicar. The caliphs among the Mahometans bear a near affinity to the popes among the Chriſtians who profeſs the catholic religion. After the death of Mahomet, who left no directions concerning a ſucceſſor, or at leaſt none but which were known to his wives, who were in the intereſt of Omar, very warm debates aroſe between the Mohajerin and the Anſars about the right of electing a khalif. The former claimed that right from their having attended Mahomet in his flight to Medina, and from having declared themſelves in his favour before any of the other Arabs joined him; but the latter founded their claims on their having ſupported him, when he was expelled his native city, and in their having enabled him to prevail againſt his enemies, when he and his followers were in a ſtate of perſecution. At length one of the Anſars propoſed to compromiſe this difference by requeſting that each of the contending parties might be allowed to chuſe a khalif. The propoſal, however, was not cordially approved by the Mohajerin; and Abubeker recommended two perſons, Omar Ebn Al Khattab and Abu Obeidah, to their choice, and propoſed that they ſhould recognize the one of theſe two perſons who obtained the ſuffrages of both parties. Omar, however, terminated the diſpute by ſwearing fealty to Abubeker, and his example was followed by all the Moſlems that were preſent; upon which, Abubeker was ſaluted khalif by both the Mohajerin and the Anſars, and acknowledged as rightful ſucceſſor of Mahomet. Abubeker, having been thus elected by the Muſſulmans, would aſſume no other title but that of *Khalifah reſſoul Allah*, that is, vicar of the prophet, or meſſenger of God. But Omar, who ſucceeded Abubeker, repreſented to the Mahometan chiefs, that if he took the quality of vicar, or ſucceſſor of Abubeker, the vicar or ſucceſſor of the prophet, the appellation of vicar would, in courſe of time, be repeated and multiplied without end; and, accordingly, at the motion of Mogairah, Omar aſſumed the title of *Emir al Moumenin*, that is, lord or prince of the believers; which appellation has been accepted and borne by all the legitimate caliphs or ſucceſſors of Mahomet, from that time; though they ſtill retained the title of caliph, without any other addition.

After the election of Abubeker, Ali Ebn Abu Taleb, who, by hereditary right, ought to have ſucceeded Mahomet, expreſſed his diſſatisfaction at the choice; but finding that the people in general were prepoſſeſſed in his favour, he acquieſced and oppoſed his reſignation of the government. The Schiites, however, maintain, that the ſupreme authority, both in ſpiritual and temporal concerns, rightly belonged to the deſcendants of Ali, and they do not acknowledge the three firſt ſucceſſors of Mahomet, viz. Abubeker, Omar, and Othman, as legitimate. The government of Abubeker commenced in the year of the hegira 11, A.D. 632; and terminated A.D. 634; when he was ſucceeded in the regal and pontifical dignity by Omar. This caliph, before his deceaſe, appointed 6 perſons to deliberate concerning the election of a ſucceſſor; all of whom had been intimately acquainted with Mahomet, and were ſtyled, by way of eminence, his "Companions." After his death they aſſembled for the choice of a new caliph: and Abdalrahman renounced his pretenſions on condition of being allowed to nominate one of the 5 remaining companions as emperor of the faithful. To this propoſal all agreed except Ali, who thought himſelf injured, becauſe he was not the immediate ſucceſſor of the prophet; and Othman was declared caliph, in the 24th year of the hegira, A.D. 644. Upon the death of Othman, Ali was unanimouſly elected to ſucceed him, in the 35th year of the hegira, A. D. 655. The ſeat of government during the 3 preceding caliphates had remained fixed at Medina from the death of Mahomet; but Ali removed it to Cufa. Ali was ſucceeded in the caliphate by his ſon Haſan in the 40th year of the hegira, A.D 660; but after a reign of about ſix months, he abdicated the government, and was ſucceeded in the 41ſt year of the hegira, A. D. 661, by Moâwiyah I. the firſt caliph of the houſe of Ommiyah; who transferred the ſeat of government to Damaſcus in Syria. The race of Ommiades terminated with Merwan II. in the 127th year of the hegira, A. D. 744; and was ſucceeded by the Abaſſides. The firſt caliph of this family was Abul Abbas al Saffah, who aſcended the throne of the Moſlems in the 132d year of the hegira, A. D. 749, and who removed the ſeat of government firſt to Cufa, then to Anbar, a city on the confines of Chaldæa and Arabia, and laſt of all to Haſchemiyah, a city built by himſelf near the Euphrates, not far from Anbar, and ſo denominated in honour of Haſchem, uncle of Mahomet, and one of his anceſtors; and from this circumſtance the Abaſſides obtained the appellation of Haſchemites. Abul Abbas was ſucceeded by his brother Abu Jaafar al Manſar, who was proclaimed caliph in the imperial city of Anbar, then the capital of the Moſlem empire, in the 138th year of the hegira, A. D. 754. He built the city of Bagdad, which afterwards became the cuſtomary reſidence of the Abaſſide caliphs, his ſucceſſors. This race terminated with Al Moſtaſem Billah, who was put to death by the Tartars, in the year of the hegira 656, A. D. 1258, when they captured the city of Bagdad.

At the end of the firſt century of the hegira, about A.D. 718, the caliphs were the moſt potent and abſolute monarchs of the globe. Their prerogative was not circumſcribed, either in right or in fact, by the power of the nobles, the freedom of the commons, the privileges of the church, the votes of a ſenate, or the memory of a free conſtitution. The regal and ſacerdotal characters were united in theſe ſucceſſors of Mahomet; and the Koran was the rule of their actions. They were the ſupreme judges and interpreters of that book held to be divine. They reigned by the right of conqueſt over the nations of the eaſt, to whom the name of liberty was unknown, and who were accuſtomed to applaud in their tyrants the acts of violence and ſeverity that were exerciſed at their own expence. Under the laſt of the Ommiades, the Arabian empire extended 200 days' journey from eaſt to weſt, from the confines of Tartary and India to the ſhores of the Atlantic Ocean. And if we retrench the ſleeve of the robe, as the long and narrow province of Africa was ſtyled by their writers, the ſolid and compact dominion from Fargana to Aden, from Tarſus to Surat, will ſpread on every ſide to the meaſure of 4 or 5 months of the march of a caravan. Under the reign of the Ommiades, the ſtudies of the Moſlems were confined to the interpretation of the Koran, and the eloquence and poetry of their native tongue. But the caliphs of the race of Abaſſides, after their civil and domeſtic wars, encouraged literature and ſcience. See ALMAMON and ALMANSOR.

After the period of the deſtruction of the caliphate by the capture of Bagdad, there were perſons who claimed the caliphate, under a pretence of belonging to the family of the Abaſſides, and to whom the ſultans of Egypt paid great reſpect at Cairo, as the true ſucceſſors of Mahomet; but this honour was merely titular, and the rights they claimed were only acknowledged in the province of religion; and though they bore the title of caliphs, they were nevertheleſs ſubjects, and dependents of the Sultans. In the year of the hegira 361, A. D. 971, a kind of caliphate was erected by the Fatimites in Africa and Egypt, and laſted till Saladin ſuppreſſed it by order of Noureddin, ſultan of Syria. There was alſo a caliphate in Africa and Spain, which commenced under the reign of Joſef. Hiſtorians alſo ſpeak of a caliphate in Yemen or Arabia Felix, eſtabliſhed by ſome princes of the race of the Aioubites, or Jobites. The emperors of Morocco aſſume the title of "grand cherifs" and pretend to be the true caliphs, or ſucceſſors of Mahomet, though under another name. Since the deſtruction of the caliphate, the Mahometan princes have a particular officer appointed in their reſpective dominions, who ſuſtains the ſacred authority of caliph. In Turkey he is denominated Mufti, and in Perſia Sadre.

One of the principal functions of the caliph, in quality of Imam or chief prieſt of the Muſſulman religion, was that of beginning the public prayers every Friday in the chief moſque, and of delivering the *khothbah*, which was a kind of ſermon. In later times they had deputies or aſſiſtants who performed the ſecond ſervice; but the firſt was always appropriated to the caliph in perſon. He was alſo obliged to conduct the pilgrims to Mecca, and to march at the head of the armies of his empire. The caliphs alſo granted letters-patent of inveſtiture, as well as ſwords, ſtandards, robes, &c. to the Mahometan princes, who, though they had thrown off the yoke of the caliphate, nevertheleſs held of it as vaſſals.

The caliphs uſually went to the moſques mounted on mules; and the ſultans Selgiucides, although maſters of Bagdad, held their ſtirrups, and led their mules by the bridles for ſome diſtance on foot, till ſuch time as they received intimations from the caliphs to mount on horſe-back. At one of the windows of the caliph's palace, there always hung a piece of black velvet, 20 cubits long, which reached to the ground, and was called the "caliph's ſleeve;" and the grandees of his court never failed to kiſs it with great reſpect every day. The honours paid to the caliphs were exceſſive, and produced in them a degree of pride, of which they did not ceaſe to exhibit tokens, even when their authority had declined and was reduced to its loweſt ſtate of degradation. In the period of their power, they affected very extraordinary magnificence and ſplendour. Abulfaragius relates, that the caliph Motazem had 700 women in his ſeraglio, and 300 eunuchs to guard them. But this ſplendour was much diminiſhed, and indeed, almoſt annihilated during the reign of the Bouides in Perſia, who ſtripped them of every thing, depriving them of their viſirs, and allowing them to retain no officer of higher rank than a ſecretary to take care of their affairs. At length, and particularly under the reign of Radi Billah, the 20th caliph of the Abaſſides, A. D. 934, the territories of the Mahometan empire were ſo diſmembered and divided, that this caliph was reduced to the ſole dignity of the caliphate, and the poſſeſſion of the city of Bagdad. But Baſſora, Vaſſith, and Abouaz, were under the dominion of the Bouides. They occupied the whole of Perſia; the Hamadanites reigned in Moſul and Meſopotamia; Akſchid was maſter of Egypt and Syria; the Fatimites poſſeſſed Africa; the Ommiades governed Spain; the Samanides had Khoraſan; the Carmathii were in peaceable poſſeſſion of Arabia Felix and Arabia Petræa; and the caliphs paid them tribute for the ſecurity of the pilgrims of Mecca: and, moreover, the Dilemites were the ſovereigns of Georgia and Tabriſtan. Such was the ſtate of the caliphate in the 325th year of the hegira, A. D. 936. After the Bouides made themſelves maſters of Bagdad, they were reduced to the mere exerciſe of the functions of the moſque; and theſe princes advanced or dethroned them at their pleaſure. At length, the period of their total overthrow by the Tartars, under the caliphate of Motazem, arrived, as we have already related; and their temporal power became extinct. Herbelot, Bib. Or. Gibbon's Hiſt. vols. ix. x. xi. Mod. Un. Hiſt. vols. i. ii. iii.

CALIPOS, or Calipus, in *Ancient Geography*, *Sadao*, a river of Luſitania, which roſe to the ſouth of the mountains on the northern boundary of Cuneus, and running northwards, watered the town of Salaria, and then turning to the weſt, diſcharged itſelf into the ſea.

CALIPPIA, an iſland of the Ægean Sea. Antonin. Marit. Itin.

CALIPPIC *period*, in *Chronology*, a ſeries of ſeventy-ſix years, perpetually recurring; which elapſed, the middle of the new and full moons, as its inventor Calippus, an Athenian, imagined, returns the ſame day of the ſolar year.

Meton, a hundred years before, had invented the period, or cycle, of nineteen years (ſee *Metonic* Cycle); aſſuming the quantity of the ſolar year $365^{d}\ 6^{h}\ 18'\ 56''\ 50^{3}\ 31^{4}\ 34^{5}$; and the lunar month $29^{d}\ 12^{h}\ 45'\ 47''\ 26^{3}\ 48^{4}\ 30^{5}$: but Calippus, conſidering that the Metonic quantity of the ſolar year was not exact, multiplied Meton's period by four, and thence aroſe a period of 76 years, called the Calippic.

At the end of this term it was neceſſary to retrench a day: ſo that his period was compoſed of four of thoſe of Meton, three of which conſiſted of 6940 days each, and one of 6939 days. For this purpoſe, it was ſufficient to change in the revolution of four periods one of the months from 30 to 29 days. The effect of this correction was to retard the anticipation of the new moons for more than 300 years, and at the ſame time to render the whole period more correſpondent to the motion of the ſun. The Calippic period, therefore, or the interval of four Metonic or lunar cycles, diminiſhed by a day, contains 27759 days; and ſince the lunar cycle contains 235 lunations, and the Calippic period is quadruple of this, it contains 940 lunations, conſiſting of about 27758 days $18^{h}\ 8'$; and 76 revolutions of the ſun compoſe a ſum of about 27758 days $10^{h}\ 4'$. The Callippic period began in the third year of the 112th olympiad, or the 4384th of the Julian period, B. C. 330, the 7th year of the 16th Metonic cycle. It is demonſtrated, however, that the Calippic period itſelf is not accurate; that it does not bring the new and full moons preciſely to their places: $8^{h}\ 5'\ 52''\ 60'''$, being the exceſs of 940 lunations above 76 ſolar years; but brings them too late, by a whole day, in 225 years.

This period was adopted by aſtronomers, and is frequently mentioned by Ptolemy. It correſponds to our lunar cycle, combined with our Julian years, 76 of which form the Calippic period; and the anticipation of the moon is the ſame in both. This anticipation, together with that of the equinoxes, gave riſe to the reformation of the calendar, A. D. 1582. See Calendar. The ancients were not unapprized of the defect of the Callippic period: at leaſt, it did not eſcape the penetrating ſagacity of Hipparchus, who undertook to correct it. His obſervations led him to perceive, that the ſolar and lunar years were ſomewhat leſs than Calippus had ſuppoſed them to be; and purſuing his calculation, which he conceived to be ſufficiently exact with regard to the moon, but more erroneous with reſpect to the ſun, he found that the anticipation of the one and of the other was about a day in four periods. He therefore quadrupled the cycle of Calippus, and retrenched from it the day which he had found in exceſs during four revolutions. This new period had the advantage of correſponding more exactly with the motion of the moon, which was not retarded more than half an hour in 304 years. But it anticipated the motion of the ſun about a day and a quarter, which was an error only equal to that of Calippus in a double interval. However, this invention ſhared the fate of many others, no leſs uſeful and alike neglected. The Grecians, accuſtomed to the cycles of Meton and of Calippus, diſregarded that of Hipparchus, although it was more perfect.

CALISIA, in *Ancient Geography*, a town placed by Ptolemy in the eaſtern part of Germany, and ſuppoſed by Cluvier to be Kaliſch in Poland.

CALISPERMUM, in *Botany*, (καλος, beautiful, and σπερμα, ſeed.) Boſc. Nouv. dict. Loureiro, Cochin. Claſs and order, *pentandria monogynia*.

Gen. Ch. *Calyx* with five equal diviſions, permanent. *Corol.* Petals five, ovate, concave. *Stamens* five. *Piſt.* germ. ſuperior; ſtyle one, ſtigma thick. *Peric.* Berry nearly round, one-celled, many-ſeeded.

Eſſ. Ch. *Corolla* five-petalled. *Berry* one-celled, many ſeeded.

Species. Caliſpermum *ſcandens.* A climbing ſhrub. *Leaves* alternate, ovate, lanceolate, ſcolloped, ſmooth. *Flowers* white, in nearly terminal racemes. A native of Cochinchina. We ſuſpect, but not having Dr. Smith's work at hand, have not the means of aſcertaining, that Loureiro's plant is the billardiera ſcandens of our excellent countryman figured by him in his plants of New Holland, and adopted by Willdenow. As that article has not been inſerted in our work in its proper place, we ſhall ſupply the omiſſion by giving it here.

Billardiera ſcandens, Willden. 440. Smith New Hol. 1. p. 1. Tab. 1. *Petals* five, alternating with the leaflets of the calyx. *Nectary* none. *Stigma* ſimple. *Berry* ſuperior, many-ſeeded. *Peduncles* ſolitary, one-flowered. *Leaves* ſomewhat hairy. If the plants ſhould turn out to be different, they ought certainly to be referred to the ſame genus, and then the trivial name which we have ventured to give to Loureiro's plant muſt be altered.

CALISSÆ, in *Ancient Geography*, a people of India on the other ſide of the Ganges. Pliny.

CALISTA, in *Fabulous Hiſtory*, the daughter of Lycaon, king of Arcadia, and one of the nymphs of Diana. Being beloved by Jupiter, he aſſumed the form of the goddeſs of chaſtity, and thus debauched her: but whilſt ſhe was bathing with her patroneſs, her diſgrace was revealed, and the incenſed deity converted her and the ſon with whom ſhe was pregnant into bears; upon which Jupiter, as the fable reports, compaſſionating her ſufferings, took them up into the heavens, and made them the conſtellations Urſa Major, and Urſa Minor.

CALISTE, in *Conchology*, a ſpecies of Venus, the ſhell of which is beſet with acute tranſverſe ſtriæ, becoming membranaceous in front; anterior ſlope ſhort, and the poſterior aperture inconſpicuous. Gmel. Schroet. &c. Inhabits the Red Sea.

CALITÆ, in *Ancient Geography*, a people of Africa in interior Libya. Pliny.

CALITOOR, in *Geography*. See Caltura.

CALIUR, in *Ancient Geography*, a town of India, placed by Ptolemy on this ſide of the Ganges.

CALIX. See Calyx and Chalice.

CALIXTINS, in *Eccleſiaſtical Hiſtory*, a name given to thoſe among the Lutherans, who follow the ſentiments of George Calixtus, a celebrated Lutheran divine, who was born near Sleſwick in Holſtein, in 1586; and having ſtudied at moſt of the proteſtant ſchools in Germany, was made profeſſor of theology at Helmſtadt in 1614, where he died in 1656. He was diſtinguiſhed by his zeal for forming an union between the Romiſh, Lutheran, and Reformed churches; or, at leaſt, for joining them in the bonds of mutual forbearance and charity. Calixtus was the firſt perſon that reduced theology into a regular ſyſtem, and gave it a truly ſcientific and philoſophical form. As he had imbibed the ſpirit of the Ariſtotelian ſchool, he arranged the ſubſtance of Chriſtianity according to the method of the Stagirite; and divided the whole ſcience of divinity into three parts, viz. the end, the ſubject, and the means. He was alſo the firſt who ſeparated the objects of faith from the duties of morality, and exhibited the latter under the form of an independent ſcience. Theſe innovations rendered him the object of much cenſure and oppoſition. In his attempt to reunite the ſeveral bodies of Chriſtians, and to comprehend the different churches in one profeſſion of religion, he was a principal promoter of that ſyſtem, which was called ſyncretiſm. See Syncretists. The controverſy which was thus occaſioned, ſubſiſted long after his death; and though he ſeemed, in his efforts for comprehenſion, to give advantage to the Romiſh church, no one attacked its tyranny and corruption with greater vigour. He was the author of many works, which it is now needleſs to enumerate. Moſheim, Eccl. Hiſt. vol. v.

The Calixtins are eſteemed a kind of Semi-Pelagians.

Calixtins alſo denote a ſect in Bohemia, derived from the Huſſites, in the fifteenth century, A. D. 1420, who aſſerted the uſe of the cup as eſſential to the euchariſt. And hence their name; which is formed from the Latin *calix*, a cup.

The Calixtins are not ranked by Romaniſts in the liſt of heretics, ſince in the main they ſtill adhered to the doctrine of Rome. The reformation they aimed at terminated in the four following articles.

1. That the word of God ſhould be explained to the people in a plain and perſpicuous manner, without the mixture of ſuperſtitious comments or inventions. 2. That the ſacrament of the Lord's ſupper ſhould be adminiſtered in both kinds. 3. That the clergy, inſtead of employing all their attention and zeal in the acquiſition of riches and power, ſhould turn their thoughts to objects more ſuitable to their profeſſion, and be ambitious of living and acting as became the ſucceſſors of the holy apoſtles. 4. That tranſgreſſions of a more heinous kind, or "mortal ſins," ſhould be puniſhed in a manner ſuitable to their enormity. In the two great factions of Calixtins and Taborites, into which the multitude was divided, there were ſome ſubordinate ſects, who differed in ſeveral other points. Moſheim, Eccl. Hiſt. vol. iii. See Taborites.

CALIXTUS, George. See Calixtins.

CALI YUG, in the *Aſtronomy* of the Hindoos, a period of time, the commencement of which forms an epoch, in which the planets were ſuppoſed to have been in a line of mean conjunction, in the beginning of Aries. The Caly yug is ſuppoſed to have begun 3102 years before the commencement of the Chriſtian æra, or 3101 years before the year of Chriſt's birth; or at the inſtant of midnight, between Thurſday the 17th, and Friday the 18th of February, O. S. in the year of the Julian period 1612, when the planets were ſuppoſed to have had this aſpect on the meridian of Lanka, about 75° 50′ E. of Greenwich: and the epoch founded on its commencement appears to have been fixed on by Varaha, the reputed author of the Suryá Siddhánta, and ſome other Hindu aſtronomers ſince his time; for though the planets were not then actually in a line of mean conjunction, yet, the differences between their reſpective poſitions, and that which was aſſumed, when divided among the years expired from that epoch to the time of Varaha, were conſidered as too ſmall to cauſe any conſiderable difference between the mean annual motions, and thoſe which it would be neceſſary to aſſume, ſo as to give the poſitions of the planets at that time, or even to cauſe any ſenſible error in their computed places deduced from thence for many years. For a farther account of this aſtronomical cycle, and its application to the Hindu chronology, &c. ſee Bentley on the Antiquity of the Suryá Siddhánta, in the Aſiatic Reſearches, vol. vi. p. 540, 8vo. See alſo Surya' Siddha'nta.

CALKA, in *Geography*. See Kalka.

CALKING, or Caulking, in *Sea Language*, &c. See Cauking.

Calking, in *Painting*. See Calquing.

CALKINS, or Calkers. a part prominent from a horſe-ſhoe, intended to ſecure the beaſt from ſliding.

The calkins are the end or extremity of horſe-ſhoes, turned or bent downwards, and forged to a ſort of point, to make the beaſt ſtep more ſafe and ſteady on the ice.

The inconvenience of calkins is, that they hinder the horſe from treading evenly on the ground, and thus occaſion wrenches on the foot, or ſtrains in the ſinews; eſpecially in ſtony ways, where the hardneſs of the bottom will not ſuffer the calkins to penetrate; beſides, they are apt to make a horſe cut.

Calkins are either ſingle or double, i. *e.* at one end of the ſhoe, or at both; the latter are reputed leſs hurtful, as they allow the creature to tread more even; ſome are made large and ſquare; the beſt are in form of the point of a hare's ear.

CALL, among *Fowlers*, means the noiſe or cry of a bird, eſpecially to its young, or its mate in coupling time.

The *call* of a bird, ſays the hon. Daines Barrington, in his Experiments, &c. on the Singing of Birds (Phil. Tranſ. vol. lxiii. p. 250), is that ſound which it is able to make when about a month old: it is, he ſays, in moſt inſtances, a repetition of one and the ſame note, is retained by the bird as long as it lives, and is common, generally, both to the cock and hen.

One method of catching partridges, is by the natural call of a hen trained for the purpoſe, which drawing the cocks to her, gives opportunity for entangling them in a net.

Calls are alſo a ſort of artificial pipes, made to catch ſeveral ſorts of birds, by imitating their notes. Different birds require different ſorts of artificial calls; but they are moſt of them compoſed of a pipe or reed, with a little leathern bag or purſe, ſomewhat in form of a bellows, which, by the motion given thereto, yields a noiſe like that of the ſpecies of bird to be taken. The call for partridges is formed like a boat, bored through, and fitted with a pipe, or ſwan's quill, &c. to be blown with the mouth, to make the noiſe of the cock partridge, which is very different from the call of the hen. Calls for quails, &c. are made of a leathern purſe in ſhape like a pear, ſtuffed with horſe hair, and fitted at the end with the bone of a cat's, hare's, or coney's legs, formed like a flageolet: they are played by ſqueezing the purſe in the palm of the hand, at the ſame time ſtriking on the flageolet part with the thumb to counterfeit the call of the hen quail.

In ſome countries hares are very numerous, and from May until Auguſt are taken with a call, which entices them within a proper diſtance of the ſportſman. This call is a ſqueaking ſound, firſt ſlow and then quicker, and is ſuppoſed to reſemble the call between the male and the female. In the country about Naples, where this practice obtains, both hares and partridges are ſo tame, that they will run under the carriage-wheels.

Call, in *Hunting*, ſignifies a leſſon blown upon the horn, to comfort the hounds.

Call, in *Mineralogy*, an Engliſh name for the mineral called Tungſten, or Wolfram, by the Germans.

Call, in *Sea language*, a ſort of whiſtle or pipe, of ſilver or braſs, uſed by the boatſwain and his mates to ſummon the ſailors to their duty, and direct them in their ſeveral employments. It is ſounded to various ſtrains, adapted to the different exerciſes, as hoiſting, heaving, &c. and the piping of it ſerves the ſame purpoſes among ſailors, as the beat of the drum among ſoldiers.

Call *of the houſe*, in a parliamentary ſenſe, has been ſometimes practiſed, to diſcover whether there be any in the houſe not returned by the clerk of the crown; but more frequently to diſcover what members are abſent without leave of the houſe, or juſt cauſe.

In the former caſe, the names of the members being called over, every perſon anſwers to his name, and departs out of the houſe, in the order wherein he is called. In the latter, each perſon ſtands up uncovered, at the mention of his name.

Call *of the plaintiff*, in Law. See Non-suit.

CALLA, in *Botany*, (derived, according to ſome authors, from *καλλος*, *beauty*; but profeſſor Martyn ſays, from καλλαιον, the wattles of a cock; the name occurs in Pliny.) Linn. gen. 1030. Schreb. 1388. Gært. 522. Juſſ. p. 24. Vent. vol. ii. p. 85. (Provenzalia, Petit. gen. 45. Anguina. Trew.) Claſs and order, *gynandria polyandria*, Linn. *monæcia monandria*, Schreb. *monæcia polyandria*, Dr. Smith, as appears from his remark on Arum in his Flora Britannica, and Engliſh Botany. Nat. ord. *piperitæ*, Linn. *Aroideæ* Juſſ. and Ventenat.

Gen. ch. *Cal.* ſpathe one-leaved, acuminate, ſpreading, permanent; ſpadix ſimple, erect, covered with fructifications. *Cor.* none. *Stam.* either placed above or intermingled with the piſtils; anthers ſeſſile, ſimple, truncate. *Piſt.* germ roundiſh obtuſe; ſtyle ſimple, very ſhort; ſtigma acute; with ſeveral permanent, compreſſed, truncate filaments intermixed with the germs. *Peric.* berry tetragonally-globular, one-celled (many celled, Gært.); *ſeeds* from ſix to twelve, erect, cylindrical, obtuſe at both ends.

Eſſ. Ch. Spathe ſpreading, ſpadix covered with florets; corolla none. Berries many-ſeeded.

Sp. 1. C. *æthiopica*, Linn. Sp. Gærtner, Tab. 84. fig. 2. La Marck, Pl. 739, fig. 2. (Arum Æthiopicum; Comm. hort. 1. p. 95. Tab. 50. Arum Africanum; Tournef. 159. Rai. Sup. 576.) "Leaves arrow-heartſhaped; ſpathe cowled; ſtamens placed above the piſtils," Perennial. *Root* thick, fleſhy, with a brown ſkin, and ſtrong, fleſhy fibres. *Leaves* in cluſters from the root, eight or nine inches long, of a ſhining green, ending in a ſharp point, which turns backwards on petioles more than a foot long; ſurrowed, and ſheathing at their baſe. *Scape* longer than the leaves, round, herbaceous, ſmooth, green. *Spathe* white, a little fleſhy, twiſted at the bottom, but ſpread open at the top, ſuddenly contracting, and ending in a point. *Spadix* cylindrical, yellowiſh, about half the length of the ſpathe. *Stamens* above, *piſtils* below ſet ſo cloſely together that they are not eaſily diſtinguiſhed. *Seeds* roundiſh, dark brown, ſmooth, having on the inner ſide a protuberant, compreſſed eye extending from the umbilical aperture to the top of the ſeed. Miller, La Marck, and Gærtner. A native of the Cape of Good Hope, ſent to Commelin in 1687, and cultivated by Mr. Miller in 1731. It flowers from January to May. 2. C. *paluſtris*, Linn. Sp. Pl. Flor. dan. Tab. 422. (Dracunculus paluſtris. Bauh. pin. 195. D. aquatilis. Dod. pempt. 331. Rai. Hiſt. 1210, Barrel, ic. 574. Anguina aquatica, Lob. ic. 600.) "Leaves heart-ſhaped; ſpathe flat; ſtamens and piſtils intermingled with each other." Perennial. *Root* creeping, from ſix to eight inches long, fixing itſelf to the earth by capillary fibres from its knots, and throwing out leaves and ſcapes at different diſtances. *Leaves* petioled, acuminate, green, ſmooth, alternately embracing the ſtem. *Stipules* two, bluntiſh-egg-ſhaped at the baſe of the petioles. *Scape* round, thick, ſucculent, ſmooth, bright green. *Spathe* roundiſh-egg-ſhaped, rolled up at the end into a bluntiſh ſpine, yellowiſh-green below. white and ſmooth above. *Spadix* egg-ſhaped, obtuſe. *Stamens* white.

Berries ſmall, four or five cornered, or round, wrinkled about the edge, ſmooth, ſoft, flat at the top, crowned with a ſhort ſtyle. *Seeds* from ſix to nine, ſometimes only from one to three, in a viſcid mucilage. A native of marſhes in Holland, Germany, and the whole north of Europe. Its roots are very acrid; but Linnæus informs us, that the Laplanders extract from them a fecula of which they make bread. 3 C. *orientalis*, Linn. Sp. Pl. (Arum Carſaami, Rauw. itin. 115. A. minus orientale, Mor. Hiſt. 3. 544. Rai. Sup. 580.) "Leaves egg-ſhaped." Perennial. *Petioles* long. *Scape* about ſix inches high; *flower* white. A native of the mountains about Aleppo. This ſpecies reſts entirely on the authority of Rauwolf; and, though admitted by Linnæus into his Species Plantarum, does not appear in the laſt edition of his Syſtema Naturæ, and has ſince been rejected by moſt of the editors of the Syſtema Vegetabilium. 4. C. *occulta*, Martyn's Miller. Loureiro Cochinch. 532. "Leaves heart-egg-ſhaped; ſpathe ſpiral; ſpadix with anthers and filaments intermingled at the bottom; anthers only at the top." Perennial. About a foot high, with ſcarcely any ſtalk. *Leaves* many, ſmooth, diffuſed; with long channelled petioles, dilated at the baſe, embracing the inner ones. *Spathe* long, concealing the flowers even in their ſtate of maturity. *Spadix* oblong. *Stigma* concave, trifid, ſeſſile. *Berry* three-lobed, three-celled, yellow, containing many ſeeds. A native of Cochinchina in moiſt places.

Propagation and Culture. The Æthiopica propagates very faſt by offsets, which ſhould be taken off about the end of Auguſt, and each planted ſeparately in a pot filled with kitchen-garden earth. They may be kept in the open air till winter, and then ſhould be removed under cover. The plant will live in the open air in mild winters, without any cover, in a warm border and dry ſoil; and may always be preſerved with a little ſhelter from hard froſt. The paluſtris muſt be planted in an artificial bog, or the mud of a pond, or tub ſet in water. Miller.

Calla-*Suſung*, in *Geography*, a town and capital of the iſland of Bouton, in the Indian ſea, ſeated about a mile from the coaſt, on an eminence ſurrounded with cocoanut trees. Its has a bad harbour with a rocky bottom. The inhabitants are Mahometans, and ſpeak the Malay language.

CALLABASH bay. See Calabash.

CALLAC, a town of France in the department of the North Coaſts, and chief place of a canton in the diſtrict of Guingamp; 3½ leagues N. of Roſtrenau. The place contains 1,543, and the canton 10,532 inhabitants; the territory includes 327½ kiliometres, and 9 communes.

CALLACALLES, a river of Chili which falls into the South Sea at Baldivia.

CALLAF, or Calaf, in *Botany*. (Alpin.) See Salix Ægyptiaca.

CALLAH, or Gellah, in *Geography*, a town of Africa, in the country of Algiers, 50 miles S. of Bona.—Alſo, a town of Africa, in the country of Algiers; 35 miles W. of Suef.

CALLAH, El, a town of Africa, in the weſtern province of Algiers, Tlemſan or Tremecen, ſituate 5 leagues to the N. E. of Maſcar, and 40 miles E. of Oran, on an eminence, as the Arabic name imports, and in the midſt of other mountains, which form part of Mount Atlas. It is larger than Maſcar, but a dirty ill-contrived town, without drains, pavement, or cauſeways. It is the greateſt market of this country for carpets and burnooſes. There are ſeveral villages of the ſame nature, and alike ſituate round about it, all of which are profitably employed in the ſame woollen manufactures. The Turks have here a ſmall garriſon and citadel; and, from ſome few large ſtones and pieces of marble of ancient workmanſhip, we may infer that it was formerly a city of the Romans; perhaps the "Gitlui," or Apſar," of Ptolemy.

CALLAICI, or Callæci, in *Ancient Geography*, a people of Spain, who inhabited the north-weſtern part of the country. Their name ſeems to have been formed from "Calle," which was that of one of their ports. There were ſeveral different people comprehended under this denomination; ſuch as the Bracari, Cælerini, Gravii, Simici, Querquerni, Artabri, and others. Ptolemy divides them into the "Callaici Bracarii," and "Callaici Lucenſes." The former extended themſelves from the Durius to the Minius; and the latter from the Minius to Aſtures. Their principal rivers were the Uia, Minius, and Durius; and their chief towns were Brigantium, Adrobicum, Lucus Auguſti, Iria Flavia, Tyde, Bracara Auguſta, Calle, and Aquæ Flaviæ.

CALLAN, a mountain in the county of Clare, Ireland, near the Weſtern Ocean, remarkable for a large ſtone or monument, ſuppoſed to have an inſcription in the *Ogham* or *Ogum* characters. An account of it may be found in the 1ſt vol. of the Tranſactions of the Royal Iriſh Academy, and in the 7th volume of the Archæologia; and ſome remarks on it Ledwich's Iriſh Antiquities.

CALLANORE, or Kullanore, a town of Hindooſtan, in the county of Lahore, ſeated on the Rauvee, about E. 30° N. from Lahore, or diſtant from it 35 common coſſes. N. lat. 32° 30′ E. lon. 74° 40′.

CALLAO, a ſea-port town of Spaniſh South America, in Peru, ſeated on a river of the ſame name near the Pacific Ocean, and ſerving as a port to the city of Lima, from which it is diſtant about 5 miles. The harbour of Callao is the largeſt, moſt beautiful, moſt convenient, and moſt ſecure in the South Sea; and the Spaniſh government has, at different periods, expended large ſums in improving and ſtrengthening it. The largeſt veſſels may lie with perfect ſafety in the road of this port, as the water is very deep, without rocks, and always tranquil. Two iſlands, named St. Lawrence and Callao, and the peninſula which nearly reaches them, defend veſſels from the ſouth wind; and though the road is open to the north and north-north-weſt, theſe winds ſo ſeldom blow here, or with ſuch inconſiderable force, that no danger is apprehended. The iſland of St. Lawrence breaks off the ſea from the S. W. to the S. E. In this port every neceſſary commodity which veſſels need, may be procured. The ſmall river that comes down from Lima, and diſcharges itſelf into the ſea under the walls of Callao, furniſhes plenty of good water; and a mole, on which cranes are erected, makes it eaſy for ſhips to load and unload. The town, which the Spaniards have conſidered as almoſt impregnable, was, before the calamity, which it ſuffered by an earthquake, fortified by baſtions and ſome batteries, which have never been thoroughly repaired; and it is defended by a garriſon. There are two fauxbourgs inhabited by Indians. The trade of Callao is conſiderable, in conſequence of its convenience as a port, and its vicinity to Lima, which ſee. This place, as well as the adjacent country, has frequently ſuffered much from earthquakes. The moſt dreadful earthquake, however, ſeems to have been that which commenced in 1746, and continued at intervals till 1747. On this occaſion the port of Callao was totally ſubmerſed; nothing remained except a piece of the wall of the fort of Santa Cruz, as a memorial of this terrible devaſtation. Of 23 ſhips and veſſels, great and ſmall, which were then in the harbour, 19 were wholly ſunk, and the other four were carried by the force of the waves to a great diſtance up the country. Of the number of inhabitants, amounting to about

4000, 200 only eſcaped; and 22 of theſe were preſerved by means of the above-mentioned fragment of a wall. Since that time Callao has been rebuilt upon the ſame plan, but a little farther from the ſea. S. lat. 12° 1′ 53″. W. long. 76° 58′.

Callao, as it is called by its inhabitants, but more generally known to Europeans under the name of **Campello**, is an iſland which lies oppoſite to, and about 8 miles to the eaſtward of, the mouth of a conſiderable river on the coaſt of Cochin-china, on the banks of which is ſituated the town of Faifoo, a place of ſome note, not far from the harbour of Turon. The bearing of the higheſt peak of Callao from this harbour is about S. E. at the diſtance of 30 miles. The extreme points of the iſland lie in N. lat. 15° 53′. and 15° 57′. The greateſt length is from N. W. to S. E. about 5 miles, and the mean breadth 2 miles. The only inhabited part is on the S. W. coaſt, on a ſlip of ground riſing gently to the eaſt, and contained between the bottom of a ſemilunar bay, and the mountains on each ſide of it. Theſe mountains, at a diſtance, appear like two diſtinct iſlands. The ſouthern mountain is the higheſt, and is about 1500 feet. The lower grounds contain about 200 acres. This ſmall but enchanting ſpot is beautifully diverſified with neat houſes, temples, clumps of trees, ſmall hillocks ſwelling from the plain, and richly decorated with ſhrubbery and trees of various kinds; among which the elegant areca, riſing like a Corinthian column, is eminently conſpicuous. A rill of clear water oozing from the mountains, is carried along the upper ridges of the vale, whence it is occaſionally conveyed through ſluices, for the purpoſe of watering the rice grounds, and for which it ſeems to be amply ſufficient. The houſes, in general, were clean and decent: a few were built with ſtone, and covered with tiles. One, probably the manſion of the chief perſon of the iſland, was incloſed by a ſtone wall, and the acceſs to it was through a gate-way between two ſtone-pillars. The houſe was divided into a number of apartments, arranged with taſte and convenience. This building ſtood at the head of the principal village, conſiſting of about 30 habitations built of wood, chiefly the bamboo. Behind the village, and on the ſide of the hill, was a cave, acceſſible only by one path through a range of rocks; and within the cave, near its mouth, was a ſmall temple, commanding a view of the whole vale. Several other temples were diſperſed over the plain, all of which were open in front, with a colonnade before them of round wooden pillars, painted red and varniſhed. The number of houſes on the iſland ſcarcely exceeded 60. Behind every houſe, not immediately in the principal village, were incloſures of ſugar-canes, tobacco, and other vegetables, growing in great luxuriance. The mountains were covered with verdure, and ſeemed well calculated for rearing goats, of which the iſland produced a few. Beſide the principal bay, there were ſeveral ſandy inlets, in any of which boats might eaſily land; but a communication between them by land is very difficult, if not impracticable, on account of the ſteep and rugged ridges which ſeparate them from each other. Hence it appears that very ſlight works, and an eſtabliſhment of a few men would be ſufficient for the defence of the iſland; a great part of its coaſt being impregnably fortified by nature. The depth of water in the bay and road is ſufficient for ſhips of any burden, and it affords perfect ſhelter from every wind except the S.W. to which quarter it was directly open. The French, it is ſaid, aware of the inſecurity of trading to Tung quin and Cochin china without ſome independent ſettlement, had formerly in contemplation to purchaſe the ſmall iſland of Callao, lying a few miles to the ſouthward of Turon. But the want of ſhelter in the S.W. monſoon would ſoon induce them, if they were once in poſſeſſion of Callao, to ſeek for a further ſettlement near it, upon the main-land of Cochin-china. Embaſſy to China, vol. i.

CALLARIAS, by ſome called *aſcellus callarius*, in *Ichthyology*, a fiſh of the truttaceous kind, called by Aldrovandus *tinca marina*, and by Rondeletius and Geſner *phycis*. It uſually grows to about a foot in length, and is in ſhape ſomething flattiſh; it is covered with ſmall ſcales, and is of a greyiſh colour, but ſomewhat purple on the head; its tail is roundiſh, not forked; it is a very well taſted fiſh, and is common in the Mediterranean, and brought to market at Rome, Venice, &c.

CALLAS, in *Ancient Geography*, a river of Greece, in the iſland of Euboea.

Callas, in *Geography*, a town of France, in the department of the Var, and chief place of a canton in the diſtrict of Draguignan, 1½ league N.E. of it. The place contains 2,108, and the canton 8,186 inhabitants: the territory comprehends 272½ kiliometres, and 7 communes.

CALLATII, and **Callantii**, in *Ancient Geography*, a people of India, who have the cuſtom, according to Herodotus, of eating their parents.

CALLATIS, **Calatis**, or **Calantra**, a town ſeated on the weſtern coaſt of the Euxine ſea, ſouth of the mouth of the Iſter, and 300 ſtadia diſtant from Tomi. See **Calatis**.

CALLE, **John Francis**, in *Biography*, a French mathematician, was born on the 25th of October 1744, at Verſailles, where he received a good education, and acquired an early taſte for the mathematics. In 1768 he came to Paris, where he had an opportunity of being more thoroughly inſtructed. In 1774 he formed ſome diſtinguiſhed pupils for the ſchool of engineers, where the examinations were ſtrict, and admiſſion difficult to be obtained. In 1779 he gained the prize propoſed by the Society of Arts at Geneva, for eſcapements. In 1783 he completed his edition of "Gardiner's Tables of Logarithms," which were exceedingly convenient, of great utility, and very correct; and which poſſeſſed advantages above all the others. In 1788 he was appointed profeſſor of hydrography at Vannes, afterwards at Dunkirk; and in 1792 he returned to Paris, and was for a few years profeſſor *des ingenieurs geographes* at the depôt of war. This place having been ſuppreſſed, he continued to teach in Paris, where he was always conſidered as one of the beſt mathematical maſters to whom pupils could apply.

In 1795 he publiſhed the new ſtereotype edition of the "Tables of Logarithms," conſiderably enlarged with logarithmic tables of the ſines, according to the new decimal diviſion of the circle. Theſe are the firſt which ever appeared. Towards the end of 1797 he preſented to the National Inſtitute the plan of a new telegraph and a telegraphic language, accompanied with a dictionary of 12,000 French words adapted to it by a combination worthy of ſo able a mathematician.

Theſe labours had injured his health; he had been a long time aſthmatic, and, notwithſtanding his condition, he publiſhed, that year, an excellent memoir on finding the longitude at ſea, under the modeſt title of "A Supplement to the Trigonometry and Navigation of Bezout." He died on the 14th of November 1798, leaving behind him a daughter, born at Vannes in 1793. According to a tradition in the family, he was deſcended from Deſcartes. Lalande's Hiſt. Aſtron. for 1798.

Calle, in *Ancient Geography*, *Porto*, a town of Hiſpania Citerior, to the ſouth, near the mouth of the river Durius, on the frontiers of Luſitania. This town, at firſt a ſmall port, became afterwards conſiderable among the Callaici, to whom it belonged. It is now called Puerto by the Portugueſe, and Port-a-Port, or Porto by the French. From this name Calle, and that of Portus, the appellation of Portugal is ſaid to be derived.

CALLE, *La*, in *Geography*, a town of Africa, in the province of Conſtantina, ſurrounded on three ſides by the ſea, and defended on the fourth ſide by a ſtrong wall. This place is inhabited by 3 or 400 Corſicans and Provençals; and it is the chief factory of the French African company on this coaſt. The edifices belonging to the company are the only regular buildings; the reſt of the inhabitants, compoſed of the ſcum of the populace of Marſeilles, live in wretched huts. They are employed in packing and unpacking of goods, in the coral fiſhery, and in taking care of the cattle; they likewiſe perform military duty, and daily mount guard. Beſides the advantage of the coral fiſhery, and of the whole trade of the circumjacent country, the French have alſo at Bona, Tuckuſh, Sgigata, and Cull, the monopoly of corn, wool, hides, and wax; for which they pay yearly to the government of Algiers, to the kaide of Bona, and to the chiefs of the neighbouring Arabs, 30,000 dollars, *i. e.* about 5000 guineas of our money.

CALLEGAES, a name anciently given by the Spaniards to the Abipons, on account of their ſingular practice of eradicating the hair over their foreheads, ſo as to produce the appearance of baldneſs: but their features reſemble the European, and the noſe is commonly of an aquiline form. They carefully eradicate the beard, and mark their foreheads and temples with particular ſcars, by way of ornament. The males are accuſtomed from childhood to the uſe of the bow. Hunger alone dictates the time to eat; and they conſume vaſt quantities of animal food. They preſerve cleanlineſs by frequent bathing in the lakes and rivers. They have no idea of a monarch, but are ruled by many caciques, which they call "capitas," from a Spaniſh term. They ſeldom marry till the huſband and bride have exceeded their twentieth year; and the lady is purchaſed from her relations at the price of four horſes, and woollen cloths of various colours, ſomewhat reſembling Turkey carpets. They pretend to expedite the birth by a mixture of cabbage juice and wine; and on the birth of a cacique's eldeſt ſon they obſerve many ceremonies. They chiefly bury their dead under the ſhade of trees; and the horſes of a chief or warrior are ſacrificed on the occaſion. The bones are afterwards diſinterred, and carried to a conſiderable diſtance. For other particulars concerning them; ſee ABIPONIANS.

CALLEN, a poſt-town of the county of Kilkenny, province of Leinſter, in Ireland. It was a borough before the union, and was often diſtinguiſhed for the violence of the conteſts, having been of the kind called potwalloping, in which every houſekeeper has a right to vote. It is of great antiquity, having been made a borough by William, earl Mareſchal, a deſcendant of Strongbow, in 1217, but it does not appear to have been ever a town of much importance. The preſent number of houſes is 582, of which 46 only pay the window tax; the population is about 3500, which is a conſiderable increaſe ſince 1731. It has no manufacture, except a diſtillery, and ſome lace made there, yet it has fine ſtreams of water, and is in the neighbourhood of a bog, which ſupplies abundance of fuel. There are ſeven fairs, ſome of which are remarkable for the ſale of horſes, and others of turkeys, which are brought up here to be ſent to Briſtol. The liberties of the town include 3660 acres of rich ground, with a lime-ſtone bottom, of which 1400 acres only are productive. The crops of wheat grown here are very fine. A common of 1500 acres formerly belonged to the town's people, which has been reduced by encroachments to about half the number, and the encloſure of the reſt on a juſt plan would be of great uſe. Indeed a reſident and improving landlord might render this town very flouriſhing. Though the adjoining country is fertile and populous, the whole diſtrict of Callen, with five adjoining pariſhes, are united under one rector, who reſides near Callen, the old church of which is in good preſervation. Theſe ſix pariſhes contain 41 proteſtant families, moſt of which live in the town. There are the ruins of an abbey, and three caſtles, with ſome veſtiges of walls, which are ſaid to have been deſtroyed by Cromwell. There is alſo a moat, the perpendicular height of which is 40 feet, and the flat ſummit 138 feet by 72. A curious charter given to this town by William earl Mareſchal, may be ſeen in Coxe's hiſtory of Ireland, the privileges conferred by which, though ſaid to be of all kinds which it became burgeſſes to poſſeſs, and the granter to beſtow, were leſs than thoſe now enjoyed by the meaneſt ſubject of the United Kingdoms. Some other particulars might be collected from Tighe's Account of Kilkenny, and the old hiſtories, if it were neceſſary. Callen is on the road from Dublin to Cork, being 65½ Iriſh miles, S.W. from the capital. N. lat. 52° 32′. W. long. 7° 34′.

CALLEN, the name of a river in the county of Armagh, in Ireland, near which the city of Armagh is ſituated, and which flows through a remarkably fertile country. It joins the Blackwater near Moy.

CALLENBERG, a town of Germany, in the circle of Upper Saxony, and lordſhip of Schonberg; 4 miles N. E. of Zwickau.—Alſo, a chain of mountains of Germany, commencing about 5 miles from Vienna, and traverſing the dutchy of Stiria.

CALLENDER, in *Geography*, a town of Scotland, in the county of Perth, ſeated on the river Teith; 11 miles N.W. of Stirling, and 30 W. S. W. of Perth.

CALLENDER, in *Manufactures*. See CALENDER.

CALLET, in *Ancient Geography*, a town of Spain, in Bœtica, and in the juriſdiction of Aſtigi, according to Pliny.

CALLEVA ATREBATUM, a town of Britain, in the country of the *Atrebatii*, placed, in Antonine's Itinerary, in his ſeventh route from Regnum to Londinium, between Venta Belgarum and Pontibus, 22 miles from the former, and at the ſame diſtance from the latter. Dr. Stukley places it at Farnham; and Mr. Horſley at Silcheſter.

CALLIÆ, a town of Peloponneſus, in Arcadia. Pauſanias.

CALLIAGH-CRUM, in *Geography*, a rock near Binwyhead, in the county of Mayo, in Ireland. N. lat. 54° 21′. W. long. 9° 35′.

CALLIAN, a town of France, in the department of the Var; 10 miles N.E. of Draguignan.

CALLIAN, or *Gallian*, a river of Hindooſtan, the mouth of which is on the ſide of the ſound, formed by Bombay, Salſette, and the neighbouring ſhores of the continent, oppoſite to the fort of Tannah. The ruins of Callian, noticed by Fryer, are probably thoſe of the Calliana of the Periplus. Mar. Eryth.

CALLIANEE, a town of Hindooſtan, in the country of Dowlatabad. It is large and populous, conſiſting of one long ſtreet filled with ſhops; the houſes are conſtructed of roſe-wood, and covered with thatch; 65 miles W. of Beder, and 85 E. of Viſiapour. N. lat. 17° 45′. E. long. 76° 54′.

CALLIAQUA, a town and harbour at the S.W. end of the iſland of St. Vincent, in the Weſt Indies. The harbour is the beſt in the iſland, and draws thither moſt of the inhabitants and the greateſt part of the trade.

CALLIBER, or CALLIPER. See CALIBER.

CALLIBLEPHARA, from καλλος, *beauty*, and βλεφαρον, *eye lid*, in the *Medicinal Writings of the Ancients*, a name given to certain compoſitions intended to make the eye-lids beautiful; and as the eye-lids are ſubject to be deformed ſeveral ways, there were ſeveral different ſorts of theſe medicines.

CALLIBOGIE SOUND, in *Geography*, lies to the N.E. from the neareſt entrance into Savannah river, in the ſtate of Georgia, in North America, behind Hilton-head iſland. The latitude there is 32° 4′ N. W. long. 81° 12′.

CALLICA, in *Ancient Geography*, a town of Aſia, in Bithynia, placed by Ptolemy at ſome diſtance from the Euxine Sea.

CALLICARIA, a promontory of India, on this ſide of the Ganges, according to Ptolemy.

CALLICARIS, a town of India on this ſide of the Ganges. Ptolemy.

CALLICARPA, in *Botany*. (ſo named from its beautiful fruit.) Linn. gen. 135. Schreb. 175. Willd. 209. La Marck, Ill. 183. Gært. 588. Juſſ. p. 107. Vent. v. ii. p. 318. Claſs and Order, *tetrandria monogynia*. Nat. Ord. *Dumoſæ*, Linn. *Vitices*, Juſſ. *Pyrenaceæ*, Vent.

Gen. Ch. *Cal.* perianth one-leaved, bell-ſhaped, four-cleft, or four-toothed. *Cor.* of one petal, tubular, ſhort; border four-cleft, obtuſe. *Stam.* filaments four, longer than the corolla; anthers egg-ſhaped. *Piſt.* germ ſuperior, roundiſh; ſtyle thread-ſhaped; ſtigma thickiſh, obtuſe. *Peric.* berry globular, ſmooth. *Seeds* four, oblong, rather compreſſed, callous.

Eſſ. Ch. *Calyx* four-cleft; *corolla* four-cleft; *berry* four-ſeeded.

Sp 1. C. *americana*, Linn. Sp. Gært. Tab. 94. fig. 5. La Marck Illuſt. Pl. 69. f. 1. (Johnſonia, Miller; ſphondylococcos, Mitch. eph. nat. cur. 8. 208. Burchardia, Duham. arb. 1. 111. Tab. 44. Pluk. alm Tab. 136. fig. 3. Cateſb. Car. 2. Tab. 47. Gron. virg. 138.) "Leaves egg-ſhaped, acute, ſerrated, rather downy beneath; berries glomerated." Lam. A ſhrub from three to ſix feet high. *Branches* round, or a little compreſſed, pubeſcent, and ſomewhat cottony near the ſummit. *Leaves* oppoſite, petioled, green above, but downy on the nerves, and entirely covered with a ſhort, whitiſh down beneath, from four to five inches long, and two inches broad. *Flowers* ſmall, reddiſh, or purple, in ſmall, axillary, branched, oppoſite corymbs ſcarcely longer than the petioles, with downy peduncles. *Berry* ſuperior, the ſize of a ſmall pea, globular, pulpy; at firſt red, afterwards deep purple; one-celled. Lam. and Gært. A native of Carolina, and profeſſor Martyn ſays, alſo of Cochinchina, but quotes no authority. The ſeeds were ſent to Miller by Cateſby, in 1724; and the plants raiſed from them flouriſhed in the open air till the ſevere froſt of 1740, when moſt of them periſhed. They are eaſily raiſed from ſeeds on a moderate hot-bed; but as the young plants are tender, they ſhould be placed under a frame before the firſt autumnal froſts, and ſhould be kept ſheltered during the winter, having freſh air whenever the weather is mild. The following ſpring they ſhould be tranſplanted into freſh pots, or into the nurſery bed in a warm ſituation; in three or four years they will have acquired ſtrength enough to live in the open air through the winter; but in ſevere froſts the ſurface of the ground about their roots ſhould be covered with old tan, and their tops protected by ſtraw or fern. Miller. 2. C. *cana*, Willd. (C. tomentoſa, La Marck, Encyc. i. 556.) "Leaves ovate-lanceolate, ſerrated, very white, with down underneath; berries ſmall, diſtinct." A ſhrub very diſtinct from the preceding, but ſo much reſembling it, that La Marck found it difficult to form a ſatisfactory ſpecific character. *Flowers* ſmaller, but more numerous, and in looſer corymbs. *Stamens* twice as long as the corolla. A native of the Eaſt Indies, communicated to La Marck by Sonnerat. 3. C. *lanata*, Willd. La Marck, Illuſt. (C. tomentoſa, Murray, Syſt. Veget. p. 153. Gmel. p. 246. Gært. Tab. 94. f. 5. C. foliis integerrimis lanatis. Mant. 331. Tomex tomentoſa, Linn. Sp. Pl. p. 172. Arbor malabarica, Illa dicta. Burm. Zeyl. 26. ind. 36. Cornutia corymboſa, La Marck, Encyc. vol. i. p. 54.) "Leaves egg-ſhaped, entire, downy, underneath; ſmaller branches, petioles and peduncles woolly." Lam. *Branches* obtuſely four-angled. *Leaves* oppoſite, large, petioled, acuminate, green, and a little wrinkled above, reſembling thoſe of viburnum lantana, but more pointed. *Flowers* ſmall, white with a tinge of red, in ſhort axillary and terminating corymbs. *Corolla* ſcarcely a line long; *calyx* very woolly; obſcurely four-toothed, ſpreading. *Berries* ſmall, blackiſh, half bedded in the permanent calyx. A native of the Eaſt Indies, communicated to La Marck by Sonnerat. 4. C. *macrophylla*, Willd. Vahl. Symb. 3. p. 13. Tab. 53. "Leaves lanceolate-elliptical, ſcolloped, attenuated, wrinkled above, white, with down underneath: branches downy." Perennial. A native of the Eaſt Indies. 5. C. *ferruginea*, Willd. Martyn. Swartz, prod. 31. "Leaves broad-lanceolate, ſerrated, rather rugged underneath: cymes terminating and axillary." Perennial. A native of Jamaica. 6. C. *reticulata*, Willd. Martyn, Swartz, 31. "Leaves elliptic-lanceolate, a little ſerrated, wrinkled, white, with down underneath." Perennial. A native of Jamaica. 7. C. *longifolia*, Willd. La Marck, Pl. 69. fig. 2. "Leaves long, lanceolate, a little toothed, green on both ſides; corymbs, or rather panicles, ſmall, axillary." Perennial. Leaves ſeven or eight inches long, an inch and a half broad, oppoſite, petioled, acuminate, thin, nearly ſmooth, except when young. *Calyx* ſhort, but ſlightly four toothed; ſtamens twice the length of the corolla. *Style* as long as the ſtamens; ſtigma truncate. A native of Malacca, communicated by Sonnerat. 8. C. *integrifolia*, Willd. Jacq. am. 15. Tab. 173. fig. 7. "Leaves egg-ſhaped, acute, very entire, a little downy underneath; racemes denſe, axillary and terminating; tube of the corolla four times longer than the calyx." Perennial. A native of woods about Carthagena, in South America. 9. C. *villoſa*, Willd. Vahl. Symb. 3. p. 14. "Leaves oblong-egg-ſhaped, very entire, reticulated beneath with downy veins; racemes axillary; pedicles many-flowered." Perennial. It differs from all the other ſpecies in its long peduncles, not dichotomouſly branched. 10. C. *japonica*, Willd. Thunb. jap. 60. "Leaves oblong, acuminate, ſerrated in the middle, ſmooth." *Stem* ſhrubby, erect, ſmooth; branches oppoſite, round, ſmooth, purple, divaricated. *Leaves* oppoſite, on ſhort petioles, green above, pale underneath, nerved, two inches long. *Flowers* white, axillary, panicled, very ſmall, panicle trichotomous, ſupra-decompound, ſomewhat faſtigiate; bractes linear; peduncles half an inch long, with very ſhort pedicles; filaments inſerted into the germ, very ſhort, anthers oblong; germ ſuperior; ſtyle awl-ſhaped, ſhorter than the corolla; ſtigma ſimple, acute. A native of Japan. 11. C. *umbellata*, Martyn's Miller, Lonr. Cochinch. 70. "Leaves between top and egg-ſhaped, ſmooth, alternate; umbels ſeſſile." A middle ſized tree with aſcending branches. *Leaves* quite entire, reflexed at the edge. *Flowers* ſmall, in five-flowered umbels, almoſt at the end of the branches; calyx bluntly four-cleft; corolla bell-ſhaped, with a ſhort tube; ſtamens and ſtigma ſeſſile. *Berry* fleſhy, roundiſh, ſmall. A native of Cochinchina in woods. 12. C. *triloba*, Martyn's Miller, Loureiro, Coch. 70. "Stem climbing; leaves three-lobed; peduncles dichotomous." A long branching ſhrub, climbing by bifid tendrils. *Leaves* ſerrated, ſmooth, on long petioles. *Flowers* axillary, pale. *Berry* roundiſh. A native of Cochinchina and China. 13. C. *paniculata*, La Marck, Encyc. "Leaves oblong, lanceolate, very entire, downy underneath; flowers very numerous, in terminating panicles." *Branches* woody, ſlightly four-angled, two of the oppoſite ſides larger than the others, clothed with a ſhort down near the ſummit. *Leaves* oppoſite, petioled, ſmooth, and wrinkled above, downy, and white underneath, three or four inches long, ſix or ſeven lines broad. *Flowers* ſmall; calyx ſhort, downy; corolla a little larger than the calyx; ſtamens a little longer than the corolla; germ ſuperior; ſtyle very ſhort; bractes very ſmall, ſtraight, pointed, one at each diviſion of the peduncles. A native of Africa, about the Cape of Good Hope. Communicated by Sonnerat. As La Marck is unacquainted with the fruit, he does not abſolutely pronounce it a callicarpa, but obſerves, that if its fruit be not a four-ſeeded berry, it will probably prove a budleia. In the Illuſtrations of genera, publiſhed afterwards, he expreſſes a doubt whether it be not ſcoparia arborea of the Supplementum Plantarum; but in that caſe, the leaves muſt be alternate, and not oppoſite, as he has deſcribed them.

CALLICHORUM, or CALLICHORUS, in *Ancient Geography*, a river of Aſia Minor; placed by M. D'Anville in the eaſtern part of Bithynia, with a northern courſe into the Euxine Sea, to the eaſt of Heraclea, among the Caucones.

CALLICHTHYS, in *Ichthyology*, a ſpecies of SILURUS, diſtinguiſhed by having the ſecond dorſal fin one-rayed, a double row of ſcales on the ſides, beards four. Linn. Gronov. &c. Plecoſtomus cirris 4 longis of Seba. This fiſh inhabits ſmall running ſtreams in Europe, and it is affirmed, that when theſe are dried up, they crawl acroſs meadows in ſearch of water.

CALLICOCCA, in *Botany*, Schreb. 316. Brotero, Linn. Tranſ. v. vi. p. 137 (Cephaelis, Willd. 357. Tagopomea Lam. Illuſt. 413. Pl. 152.) Claſs and order, *pentandria monogynia*. Nat. Ord. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Involucre of one or more leaves, incloſing numerous ſeſſile flowers on a chaffy receptacle; perianth five-toothed, ſuperior. *Cor.* monopetalous; tube cylindrical, ſwelling upwards; border five-parted, ſpreading. *Stam.* filaments five or four, capillary; anthers oblong, erect. *Piſt.* germ inferior; ſtyle capillary, bifid; ſtigmas obtuſe. *Peric.* Berry angular or wrinkled, one-celled. *Seeds* two, flat on one ſide, convex on the other, angular.

Eſſ. Ch. *Flowers* in heads, involucred. *Corolla* tubular. *Berry* angular below, or wrinkled, two-ſeeded. *Receptacle* chaffy, nearly allied to morinda.

Sp. 1. (Cephaelis *violacea*, Swartz prod. 45. fl. ind. occ. i. p. 439. Tapogomea violacea: Aubl. Guian. 1. p. 157. Tab. 60.) "Heads globular, terminal; involucres five-leaved; leaves oblong, ſmooth." Willd. *Leaves* nerved. *Flowers* and *fruit* of a violet colour. A native of Guiana and the Weſt Indies. 2. C. *tomentoſa*, (Cephaelis, Vahl. eclog. 1. p. 19. Tapogomea Aubl. Guian. i. p. 160. Tab. 60.) "Heads globular in terminal corymbs; involucre two-leaved; leaves oblong, pubeſcent." Willd. Leaflets of the involucre large, heart-ſhaped, acuminate, of a purpliſh violet colour. A native of woods in Guiana and the Iſland of Trinidad. 3. C. *punicea*, (Cephaelis glaberrima, Vahl. eclog. 1. p. 19.) "Heads terminal, erect; involucres two-leaved; leaves lanceolate-elliptical, ſmooth and gloſſy on both ſides." *Branches* roundiſh, perfectly ſmooth of a pale purple colour. *Leaves* oppoſite, petioled, narrowed at the baſe and the ſummit, acute, perfectly entire, nearly veinleſs above, ſlightly veined underneath. *Stipules* tubular, ſhort, entire. *Peduncle* four inches long, ſtiff, terminal between two little branches, a little thicker than the lateral branches, angular, purple. *Head* the ſize of a wallnut. *Involucre* large, heart-egg-ſhaped, ſcarlet, ſcarcely veined. Outward chaffy leaflets larger than the others, oblong. Vahl. A native of Jamaica. 4. C. *elata*, (Cephaelis Swartz,) "Heads globular, terminal; peduncles elongated; involucre two-leaved; leaves ſmooth." Such is the ſpecific character given by Swartz, and copied by Willdenow; but it certainly does not give a ſufficiently diſtinct difference from the preceding. A native of the high mountains in Jamaica. 5. C. *axillaris*, Swartz. "Heads axillary, ſeſſile." A native of St. Kitt's. 6. C. *purpurea* (Tapogomea purpurea, Aubl. Guian. t. 63. p. 3.) "Heads terminal, naked; leaves oblong, coloured, pubeſcent, underneath; ſtem creeping, downy." Willd. *Leaves* with a white line above, and a reddiſh pubeſcence underneath. A native of woods in Guiana. 7. C. *alba*, (Tapogomea, Aubl. Tab. 64. fig. 4.) "Heads terminal, naked; leaves egg-ſhaped, pubeſcent underneath; ſtem creeping, ſmooth." Willd. A native of woods in Guiana. 8. C. *glabra*, (Tapogomea, Aubl. Tab. 63.) "Heads terminal, naked; leaves oblong, ſmooth, ſtems erect; little branches pubeſcent." Willd. Heads of the flowers hirſute. Aubl. A native of Guiana. 9. C. *carapichea*, (Cephaelis involucrata, Willd. Carapichea guianenſis, Aubl. Tab. 64. Tapogomea, Lam. Illuſt. Pl. 152. f. 3.) "Heads terminal, globular; involucre four-leaved, unequal: leaves oblong, acuminate." A ſhrub five or ſix feet high. *Stem* cylindrical, knotty, branched. *Leaves* oppoſite, petioled, entire, ſmooth. *Stipules* intrafoliaceous, lanceolate, acuminate, with two ſmall glands at their baſe. *Flowers* ſmall, white; peduncle curved; ſtamens exſerted; two leaves of the involucre very long, lanceolate. *Fruit* an angular, two-celled, two-valved, capſule, with a ſingle ſeed in each cell. Lam. A native of Guiana. The trivial name involucrata, given by Willdenow, is groſsly improper in a genus in which moſt of the ſpecies are involucred. 10. C. *evea*, (Cephaelis tetrandria, Willd. Evea guianenſis Aub. Tab. 39. La Marck, Illuſt. 154. Pl. 59. Encyc. 2. 399.) "Heads axillary, globular, peduncled, involucre four-leaved; flowers tetrandrous." Willd. A ſhrub ſeven or eight feet high, branched from the bottom. *Branches* oppoſite, knotty, four-cornered. *Leaves* oppoſite, ovate-lanceolate, acuminate, entire, ſmooth, even, on ſhort petioles. *Stipules* intrafoliaceous, ſhort, pointed, caducous. *Heads of flowers* oppoſite, ſituated rather above the axils of the leaves. *Leaves of the involucre* oval, pointed; the two outward ones larger. *Scaly leaflets* ſix or ſeven, between the involucre and the flowers. *Fruit* unknown. A native of Guiana. As there is another tetrandrous ſpecies we have changed the trivial name. 11. C. *patabea*, (Cephaelis ſeſſiliflora, Willd. Patabea coccinea, Aubl. Tab. 43. La Marck. Illuſt. 173. Pl. 65. Poiret. Encyc. 5. 52.) "Heads terminal, globular, ſeſſile, naked; flowers tetrandrous." Willd. A ſhrub four or five feet high. *Branches* compound, oppoſite, knotty. *Leaves* oppoſite, entire, ſmooth, acuminate. *Stipules* intrafoliaceous, awl-ſhaped, rather large, *Heads of the flowers* terminal, ſituated in the axils of the upper pair of leaves; corolla red; filaments ſhort. *Fruit* unknown. A native of Guiana. We have changed the trivial name of this as well as of the two preceding, and for a ſimilar reaſon. 14. C. *ipecacuanha*, Brotero, Linn. Tranſ. vol. vi. Tab. 2. (Ipecacuanha fuſca, Piſ. Braſ. p. 101. It. Marg. Braſ. p. 17.) "Stem aſcending, ſomewhat ſhrubby, ſarmentous; leaves ovate-lanceolate, a little pubeſcent underneath; ſtipules deeply laciniated; head terminal, peduncled; involucre four-leaved, leaflets a little heart-ſhaped; corolla five-cleft; chaffy bractes large." *Root* ſimple or a little branched, roundiſh, moſt frequently perpendicular; ſometimes, but rarely, ſlightly oblique; from two to four inches long, or more; ſlender upwards, the thickneſs and form of the ſtem; two or three lines thick below, irregularly bent, brown without; divided into numerous prominent, unequal, ſomewhat wrinkled rings; of an acrid, bitter taſte, but ſcarcely any ſmell; when dry the bark is thick, hard, brittle, brown without, white within, of a gummy reſinous nature, incloſing a ſmall, woody, white, nearly inſipid, mucilaginous fibre, from which it is eaſily ſeparated into numerous rings, which are ſmooth at their edges. *Stem* ſomewhat ſhrubby, firſt procumbent, then erect, ſometimes creeping at the baſe, round, about the thickneſs of a common quill; ſmooth and without leaves below, brown, and knotty with the ſcars of fallen leaves, the internodes upwards gradually decreaſing in length; near the top pubeſcent, green, leafy; for a year or two ſimple; then throwing out a few leaflets, rather crooked, knotty runners, taking root irregularly at the knots, and producing one or two new ſtems about half a foot from each other. *Leaves* from four to eight near the ſummit of the ſtem, oppoſite, ſpreading, three or four inches long, one or two broad, perfectly entire; deep green above and beſprinkled with roughiſh points, ſmooth, or rarely beſet with a few ſcattered hairs; underneath pale green, and ſomewhat pubeſcent; with a rather elevated rib, and alternate, nearly parallel, lateral veins curved at the end; petioles ſhort, channelled, a little hairy. *Stipules* two, extrafoliaceous, preſſed cloſe to the ſtem, deeply cut into awl-ſhaped diviſions, ſlightly adhering to the petioles, about equal to them in length, and with them ſheathing the ſtem, ſhrivelling. *Flowers* aggregate in a ſolitary head, peduncled, terminal, and a little drooping; peduncle round, pubeſcent, about half an inch long; florets ſeſſile, from fifteen to twenty-four, ſeparated by chaffy leaflets or bractes; bractes the length of the involucrum and florets, pubeſcent, very entire, ſeſſile, green, varying in form, ſometimes longiſh-egg ſhaped, ſometimes rather obtuſely lanceolate, and ſometimes, but rarely, in ſize and figure reſembling the leaflets of the involucre. *Involucre* four-leafed; leaflets a little heart-ſhaped, acute, entire, almoſt ſeſſile, ſlightly waved, hairy; the two outer ones largeſt, and all a little longer than the florets. *Calyx*, perianth, ſuperior, permanent, membranous, white, very ſhort, with five blunt teeth. *Corolla* monopetalous; tube cylindrical, long, a little ſwelling upwards, woolly about the throat; border ſhorter than the tube; with five egg-ſhaped, acute, recurved ſegments. *Stamens*, filaments five, capillary, ſhort, inſerted on the upper part of the tube; anthers oblong, linear, erect, projecting beyond the top of the tube. *Piſtil*, germ egg-ſhaped, not angular; ſtyle thread-ſhaped, the length of the tube, ſurrounded at the baſe with a ſhort, nectariferous rim; ſtigmas two, oblong, rather thick, blunt, the length of the anthers. *Pericarp*, berry one-celled, with two ſeeds, roundiſh, neither furrowed nor angular, crowned with the calyx, purpliſh red, ſoft, and finally becoming wrinkled and black. Thoſe which fall before they are ripe, when they grow dry, have a ſingle furrow on each ſide, occaſioned by the ſeparation of the ſeeds, as they lie with their flat ſides towards each other. *Seeds* two, elliptical, ſmooth, a little twiſted; flat on one ſide, with a longitudinal, ſomewhat elevated line running down the middle; convex on the other, with a furrow near the apex. A native of moiſt woods in Pernambucco, and other provinces of Brazil, flowering from November to March, and ripening its berries in May. Deſcribed by Felix Avellar Brotero, profeſſor of botany at Coimbra, with the aſſiſtance of obſervations made in Brazil on living plants, by Bernard Gomes, a reſident medical botaniſt. It is called ipecacuanha by the natives in ſome parts of Brazil; poaia do matto by thoſe of the ſouthern provinces; and cipo by others, which is the name often given it by the Portugueſe ſettlers.

Though the root of this plant has been known in Europe about 150 years, and has been in general uſe as a valuable medicine nearly as long; and though figures of it were early publiſhed by Piſo and Margraave, modern botaniſts have known little of its botanical characters, and were long unable to determine the genus to which it ought to be referred. Linnæus, in a paper publiſhed in the third volume of "Amenitates Academicæ," gave it as a trivial name to a ſpecies of Euphorbia, a native of Virginia and Carolina, the root of which is there uſed as an emetic; but this was ſoon diſcovered not to be the real ipecacuanha. In his ſecond Mantiſſa, he gave the ſame trivial name to a ſpecies of Viola, a native of Brazil, the root of which he ſuppoſed to be the white ipecacuanha of the ſhops. Decandolle, in a paper publiſhed in the "Bulletin des Sciences par la Société Philomatique," and re-publiſhed entire in the "Nouveau Dictionaire d'Hiſtoire Naturelle," ſays, there are three ſpecies of Viola which produce the white ipecacuanha: the *calceolaria* of the ſpecies Plantarum, a native of Guiana and the Antilles; the *ipecacuanha* of the Mantiſſa, and the *parviflora* of the Supplementum Plantarum, both natives of Brazil. The roots of theſe, and eſpecially the laſt, are ſometimes mingled in commerce with the true or brown ipecacuanha; but they are a fraudulent adulteration, and do not poſſeſs its active properties. They may be diſtinguiſhed by their colour; but moſt certainly by the ſize of the woody part, which in theſe is always conſiderably thicker than the bark; whereas, in the true ipecacuanha, it is much leſs; and, as deſcribed by Brotero, is only a fibre (filum). The roots of ſome ſpecies of Aſclepias, Cynanchum, Dorſtenia, and Ruellia, have likewiſe received the name of ipecacuanha, on account of their poſſeſſing ſome of the ſame qualities; but in this there is no deception, as they have been honeſtly called falſe or ſpurious ipecacuanhas.

Some time before the year 1781, Mutis, then travelling in South America, ſent to the younger Linneaus a deſcription formed from a ſpecimen in full flower, which the governor of the province of Girong had received from Canaverale on the river Magdalena, and which an empiric of the country, to whom it was ſhewn by Mutis, poſitively aſſerted to be the genuine ipecacuanha, having frequently gathered it in the neighbourhood of Simites, where it grows wild in great abundance, and whence it is regularly ſhipped at Mompoxia, as an article of commerce for Europe. From this deſcription, Linnæus judged it to be a ſpecies of Pſychotria, a genus formed by his father for two or three plants that are natives of the Eaſt and Weſt Indies, and publiſhed it as ſuch in the "Supplementum Plantarum;" at the ſame time expreſſing a doubt whether it were really the ipecacuanha of Piſo and Margraave; but alſo adding, that, from its reſemblance to their figures, he was rather inclined to believe it the ſame.

In the year 1793, Dr. Woodville was favoured by ſir Joſeph Banks with a ſpecimen preſerved in ſpirits, which had been ſent from Brazil. A drawing taken from it was engraved and publiſhed in his Medical Botany. It was without a flower, but as its root was entire, there was no doubt of its being the real plant. Its genus, however, ſtill remained in a ſtate of uncertainty; for Dr. Woodville was of opinion that he could not "implicitly follow the authority on which Mutis received the information." The lovers of natural hiſtory are, therefore, highly obliged to profeſſor Brotero for his ſatisfactory monograph on the ſubject, read at a meeting of the Linnæan Society in February 1801; and which, as no deſcription of the plant has hitherto appeared in Engliſh, we have tranſlated with little abridgment from the original Latin. Mr. Brotero does not ſeem to have been acquainted with the communication of Mutis to the younger Linnæus; or, if we ſuppoſe that he muſt have formerly ſeen it in the Supplementum Plantarum, a work in the hands of every botaniſt, he had certainly forgotten it when he compoſed his diſſertation. On comparing the two deſcriptions, there appear one or two important, and a few ſlighter differences; but there is ſo great a general reſemblance, as to make it evident that they are very nearly allied to each other, and to render it probable that they belong to the ſame natural genus, and poſſeſs the ſame qualities in perhaps an equal degree.

In the deſcription given by Mutis, there is no mention of an involucre; and the bractes which ſeparate the florets are ſaid to be ſo ſmall as to be ſcarcely diſcernible. The firſt affects the genus as it has hitherto been characterized by all authors; and as we, in conformity with them, have given it above. The other is only a ſpecific difference; but we ſuppoſe it will be acknowledged to be a ſtrongly marked one. The ſtipulæ in Mutis's plant are awl-ſhaped and horizontal; in that of Brotero, they are deeply laciniated, and preſſed cloſe to the ſtem. In the former, the flowers are ſtated to be axillary, and to have only from two to five flowers, which are not deſcribed as forming a head: but a ſimple inſpection of Brotero's figure will make it manifeſt that they may be called either terminal or axillary with nearly equal propriety; and their number may be a variable circumſtance depending on ſoil and ſituation; or, if conſtant, may be introduced with advantage into the ſpecific character. In all other reſpects, they are ſo much alike that the deſcription of one will ſerve for the other. The credit of the Brazilian empiric, which ſeems to have ſuffered in the eſtimation of a regular European phyſician, by that degrading appellation, is therefore eſtabliſhed. The ſtipules of Sir Joſ. Banks's plant, as figured by Dr. Woodville, agree in ſhape with thoſe deſcribed by Mutis, and are ſtrikingly different from thoſe figured by Brotero; the root alſo of the former is more knotted and irregular in its ſurface. It may then, we apprehend, be fairly concluded, that there are at leaſt two diſtinct ſpecies; and nothing forbids their being placed under the ſame genus, as nature certainly dictates, but the want of an involucre in that deſcribed by Mutis. The preſence or abſence of an involucre is, however, a circumſtance which ought not to enter into the eſſential part of a generic character. The genus Cornus might be cited as a familiar caſe in point; but callicocca itſelf, as it actually now ſtands in authors, is a ſufficient inſtance. For though Schreber, La Marck, and Willdenow, all agree in aſcribing to it an involucre, as an eſſential character, Schreber inconſiſtently adds, in a note, that it is in ſome caſes without one, and of Willdenow's 12 ſpecies, four are expreſsly ſaid, to have naked heads or to be deſtitute of an involucre. Whether La Marck includes in his tapogomea any ſpecies of a ſimilar deſcription we cannot determine, as the alphabetical part of the Encyclopedie is not ſo far advanced; and though he has figured it in his Illuſtrations, and given what he thought its eſſential character in the ſynoptic table, at the head of the claſs, the enumeration of the ſpecies remains unpubliſhed. The three ſpecies figured by him have a very conſpicuous involucre. Two of them we have not ventured to quote; of the carapichea, Willdenow's involucrata, there can be no doubt. Upon the whole, it ſeems to be evident, that the involucre ought to be excluded from the generic character. The eſſential difference between it and morinda will then entirely reſt on its flat, chaffy, or, as it might perhaps better be called, bracteated receptacle; which, at leaſt as far as precedent goes, will be deemed a ſufficient diſtinction. Pſychotria differs from both in not having the flowers in heads on a common receptacle. Mutis in his deſcription of his pſychotria emetica does not mention a common chaffy receptacle; but the ſeſſile flowers on a common peduncle, with a bracte to each flower, clearly imply it, and ſhew that the ſpecies is properly a callicocca. We ſhall therefore add, 14 C. *mutiſii*, (pſycotria emetica, Linn. jun. Sup. Pl. p. 144.) "Heads naked, peduncled, few-flowered; leaves lanceolate, ſmooth; ſtipules entire, awl-ſhaped; corolla five-cleft: chaffy bractes very ſmall." A native of Brazil. All the known ſpecies are perennial.

We have followed Screber and Wildenow with little heſitation in uniting the tapogomea, patabea, and evea of Aublet, though La Marck has kept them ſeparate. A difference merely in number cannot warrant the conſtruction of a new genus. Of the carapichea we have much doubt, on account of the important difference in the fruit. La Marck made it a diſtinct genus in the alphabetical part of the Encyclopedie, but has figured it as a ſpecies of his tapogomea in the Illuſtrations, which muſt be conſidered as his lateſt deciſion on the ſubject. Nor can the genus of patabea and evea be abſolutely fixed, till we become acquainted with their fruit.

CALLICOE, in *Manufactures*, a ſpecies of cotton cloth, originally imported from the Eaſt Indies, from the kingdom of Calicut, on the coaſt of Malabar, whence the name Callicoe is derived.

The term is now generally applied to cotton cloths of Engliſh manufacture, and comprehends many varieties of fineneſs and texture. Engliſh calicoes were firſt manufactured at Blackburn in Lancaſhire, about 30 years ago, and have ſince become one of the leading articles of national induſtry, affording employment in the various details of ſpinning, weaving, bleaching, dying, &c. to a conſiderable portion of the population of that county. See COTTON MANUFACTURES.

CALLICOE PRINTING. See PRINTING.

CALLICOLONA, in *Ancient Geography*, a hill of Aſia Minor, in the Troade, and in the vicinity of Simois, according to Homer. It is mentioned by Strabo.

CALLICRATES, of *Tyre*, in *Biography*, an hiſtorian who flouriſhed under Aurelian, and wrote his life; but he is ſaid to have dwelt too much in trifling incidents. Vopiſcus ſtyles him the moſt learned of all the Greek hiſtorians of his time.

CALLICRATES, an Athenian architect and ſculptor, who lived about 472 years before Chriſt. He is ſaid to have engraved ſome of Homer's verſes on a grain of millet, and to have made an ivory chariot which might be concealed under the wing of a fly, and an ant of ivory in which all the members were diſtinct. Ælian, however, juſtly cenſures him for employing his talents in performances ſo trivial and uſeleſs, and yet ſo difficult.

CALLICRATIDAS, a Lacedæmonian general, who ſucceeded Lyſander in the command of the Athenian fleet. He was eminently diſtinguiſhed not only for his valour and military ſkill, but for his ſimplicity, integrity, and magnanimity. When he arrived at Epheſus to take the command, Lyſander adopted every baſe and treacherous method in his power to embarraſs him; and with this view ſent back to Cyrus, the ally of Sparta, the money which he had given to him for the naval ſervice, and, at parting, he ſaid to his ſucceſſor with a ſneer; "Let us now ſee, Callicratidas, how you can defray the charges of your army." This hoſtile meaſure involved him in difficulties, more eſpecially as he could not recur to thoſe means of relief which Lyſander did not ſcruple to adopt. At length, when all his reſources were exhauſted, he repaired to the court of Cyrus in order to ſolicit pecuniary aſſiſtance. But, treated with neglect, and diſappointed in his expectations, he returned to Epheſus; determining, however, not to procure relief, urgent as his neceſſities were, by doing any thing that would entail diſgrace on his country or on himſelf. Cyrus, on ſubſequent deliberation, ſent after him a ſupply of money for the payment of his troops, together with preſents for himſelf. The former he retained, but returned the latter with this memorable meſſage: "That there needed no private friendſhip between Cyrus and him, becauſe as long as the king obſerved the conditions of his treaty with the Lacedæmonians, he ſhould think himſelf bound by it." He then attacked and defeated Conon the Athenian general, and beſieged him in Mitylene. Hearing afterwards that the enemy's grand fleet was at Arginuſæ, oppoſite to Leſbos, where he was ſtationed, he reſolved to engage it. Whilſt he was ſacrificing in the morning, the ſoothſayer informed him, that, if he fought, the fight would in the iſſue be proſperous, but that the admiral would loſe his life; to this declaration he replied, without any apparent concern; "Let us fight then; Sparta will not loſe much in loſing me; but ſhe would forfeit her honour, if I retired in the ſight of the enemy." An obſtinate engagement enſued, in which Callicratidas was ſunk with his ſhip; B. C. 405; and, notwithſtanding the ſoothſayer's prediction, the Lacedæmonians were defeated with great loſs. Anc. Un. Hiſt. vol. v. p. 454.

CALLICULA Mons, in *Ancient Geography*, a mountain of Italy in Campania.

CALLIDROMUS, a mountain in the Locride at the foot of which was the paſſage of Thermopylæ.

CALLIDRYS. See Calidris.

Callidrys, in *Ornithology*, a name given by Bellonius and ſome other authors, to our common red-ſhank; Scolopax Calidris.

Callidrys *nigra*, of Bellonius, ſuppoſed by ſome to be the ſame bird as *Tringa canutus* of modern ornithologiſts, or what we call the knot, but this is doubtful.

CALLIFÆ, in *Ancient Geography*, a town of Italy in Samnium, in the country of the Hirpini. Livy.

CALLIGA, a town of India, on this ſide of the Ganges. Ptolemy.

CALLIGICUM, a promontory of India, in the peninſula on this ſide of the Ganges, which terminated the Argaric gulf to the north-weſt.

CALLIGONUM, in *Botany*, (from καλλος and γονυ, implying a beautiful jointed ſtructure,) Linn. Gen. 680. l'Heritier in Linn. Tranſ. vol. i. p. 177. Willd. 961. (Pallaſia. Schreb. 834.) Claſs and order, *dodecandria tetragynia*. Nat. ord. *Holoraceæ*, Linn. *Polygoneæ*, Juſſ.

Gen. Ch. *Cal.* perianth one-leafed, top ſhaped at the baſe, with a five parted border; ſegments nearly equal, roundiſh, ſpreading, finally a little reflexed, permanent; the two outer ones a little ſmaller than the others. *Corol.* none, unleſs the calyx be conſidered as ſuch. *Stam.* filaments about ſixteen, diverging, capillary; pubeſcent, and a little thickened near the bottom; ſlightly united at their baſe in the form of a nectary; anthers roundiſh, two-celled, peltate. *Piſt.* germ ſuperior, egg-ſhaped, four-ſided, acuminate; ſtyles four, ſometimes only three, thread-ſhaped, ſpreading, a little united at the baſe, ſcarcely longer than the filaments; ſtigmas capitate. *Peric.* none, except the cruſt of the nut. *Seed*, nut with a juiceleſs inſeparable cruſt or ſhell, oblong, four-ſided, four-winged, one-celled, without valves; wings either membranaceous, longitudinally two-parted, toothed, and curled; or rough with branched briſtles, kernel of the ſame form.

Eſſ. Ch. *Calyx* five-parted, *corolla* none, filaments about ſixteen, a little united at the baſe, germ ſuperior, four-ſided, ſtyles three or four, nut four-winged, one-celled. l'Herit.

Sp. 1. C. *polygonoides*, Linn. Sp. Pl. (polygonoides, Tourn. Corol. 47. Tab. 478. Itin. Orient. vol. ii. p. 536. with a figure.) "Fruit latticed; briſtles branched, rigid." l'Herit. A ſhrub three or four feet high. Stem as thick as the human arm, zigzag, hard, brittle, covered with a reddiſh bark, divided and ſubdivided into many ſimilar branches, which at length put out numerous jointed twigs of a ſea-green colour, an inch or fifteen lines long, and half a line thick, which Tournefort calls leaves, and ſays are ſo like thoſe of Ephedra, that it is not poſſible to diſtinguiſh them without ſeeing the flowers. *Flowers* at the joints of the upper ramifications, on ſlender, ſhort peduncles, pale green in the middle, white at the edges, permanent; filaments white; anthers purple. *Fruit* half an inch long, four lines thick, conical, deeply furrowed lengthwiſe: angles terminated by wings cut into fine fringes. La Marck calls it a capſule. Found by Tournefort near the river Araxes in Armenia. 2. C. *comoſum*, Willd. l'Heritier in Linn. Tranſ. "Fruit latticed; briſtles, branched, ſoft." l'Herit. Perhaps only a variety of the preceding. They exactly reſemble each other, except in the briſtles of the fruit, which in this are ſofter, and implicated or buſhy; whereas in the preceding they are more rigid and perfectly diſtinct. Found by Lippi in Egypt, and by Louiche Deſfontaines in Barbary. 3. C. *pallaſia*, Willd. l'Heritier. Linn. Tranſ. vol. i. and Stirp. vol. ii. p. 37. La Marck Illuſt. Pl. 410. (Pterococcus aphyllus. Pallas, Voyag. ii. p. 738. Tab. 8. French tranſlation, p. 473, and 549. Pl. xvi. Pallaſia caſpica, Linn. Supp. 252. Savigny in Encyc. Pallaſia Pteroccoccus. Pallas Fl. Roſſ. ii. p. 70. Tab. 77, 78.) "Wings membranaceous, curled, toothed," l'Herit. A ſhrub three or four feet high. *Root* thick, woody, an inch and half in diameter, ſtriking deep into the ſand, with a tuberoſe head. *Stems* numerous, about the thickneſs of a finger, erect, branched, ſpreading, dichotomous, brittle, with a grey, ſtriated bark. *Branches*, alternate, round, zigzag, jointed, a little knotty, without leaves; putting out every ſpring, at each joint, from ſix to ten cloſe ſet, herbaceous, ruſh-like ſhoots, ſometimes ſimple, ſometimes branched, of a fine green, and nearly glaucous colour, a few of which ſurvive the winter, and are hardened into branches; the reſt periſh, and leave a knotty ſcar. *Stipula* membranaceous, obſcurely trifid, ſhrivelling, ſurrounding the joint as in the polygonums. *Leaves* alternate, ſeſſile, ſolitary, at each joint of the herbaceous ſhoots; round, awl-ſhaped, fleſhy, reſembling the ſhoots, half an inch long. Pallas ſays there are no leaves, but l'Heritier affirms that they were actually preſent in plants cultivated by himſelf, which flowered and ripened their fruit. *Flowers* numerous in cluſters, from three to five together; lateral or axillary within the ſtipules, on the young or woody branches, as well as on the herbaceous ſhoots; white, with a greeniſh tinge in the middle. *Stamens* ten, the length of the calyx, and withering with it as the fruit increaſes, without falling off; filaments briſtle-ſhaped, thickeſt at the baſe, downy; anthers nearly globular, two-celled. *Germ* conical, four-ſided, rarely three ſided, the bifid angles prolonged ſo as to form the wings of the fruit. *Wings* ſomewhat oval, of a cinamon colour, ſtriated and ſplit near the edges, ſpreading

ing on each ſide, ſo as to conceal the nut. When the root is cut acroſs there exudes from it copiouſly a clear gum, which has the properties of gum tragacanth. Infuſed in water it ſwells and is changed into a ſweetiſh mucilage, which does not ſoon grow dry; and if expoſed to heat, ferments in a few days and acquires a vinous flavour. Found by Pallas in the ſandy deſarts between the Volga and the Iaick. It was at firſt thought by him to be a new genus; but afterwards recollecting the genus calligonum of Linnæus, he fell into the oppoſite error, and ſuppoſed it to be the ſame ſpecies with the Armenian plant found by Tournefort. The younger Linnæus alſo took it for a new genus, and in honour of Pallas called it pallaſia. They both attribute to it not a one-leafed calyx, but a five-petalled corolla. It is called *rynpeſki* by the inhabitants of the country between the Volga, the Iaick, and the Caſpian Sea; and torluk by the Kalmuck and Kirkiſian Tartars, who make tobacco pipes of its long internodes. L'Heritier and Pallas. Theſe three ſpecies are ſo ſimilar to each other in their general habit and ſtructure, that their ſpecific difference can be taken only from the fruit. 4. C. *aſperum*, Martyn's Miller. Lour. Cochin. "Leaves egg-ſhaped, rough; racemes ſubdivided; fruit double." *Stem* ſhrubby, climbing, but without tendrils, long, branched. *Leaves* entire, alternate. *Flowers* white, in terminating racemes. *Calyx* five-leaved, green, tipped with red; leaves roundiſh, concave, ſpreading. *Corolla* commonly none, but ſometimes there are four, round, concave, ſpreading petals. *Stigma* ſeſſile, blunt, deeply two-parted. *Stamens* numerous on the receptacle. *Fruit*, a berry, ſometimes ſingle, ſometimes double, one-celled, with many ſeeds. A native of Cochinchina in woods. We have placed it here rather than omit it, but from its fruit and general habit, it does not appear to be a calligonum; nor ought a variable circumſtance to form part of the ſpecific character.

CALLIGRAPHUS, anciently denoted a copyiſt, or ſcrivener, who tranſcribed fair, and at length, what the notaries had taken down in notes or minutes. The word is compounded of καλλος, *beauty*, and γραφω, *I write*. The minutes of acts, &c. were always taken in a kind of cypher, or ſhort-hand; ſuch as the notes of Tyro in Gruter: by which means the notaries, as the Latins called them, or the σημειογραφοι and ταχυγραφοι, as the Greeks called them, were enabled to keep pace with a ſpeaker, or perſon who dictated. Theſe notes, being underſtood by few, were copied over fair, and at length, by perſons who had a good hand, for ſale, &c. and theſe were called calligraphi; a name frequently met with in the ancient writers. In the Palæographia of Montfaucon (lib. i. c. 8.), we have a catalogue of all the known calligraphi.

CALLIGRAPHY, the art of fair writing.

Callicrates is ſaid to have written an elegant diſtich on a ſeſamum ſeed. Junius ſpeaks of a perſon, as very extraordinary, who wrote the apoſtles creed, and beginning of St. John's Goſpel, in the compaſs of a farthing. What would he have ſaid of our famous Peter Bale, who in 1575 wrote the Lord's prayer, creed, ten commandments and two ſhort prayers in Latin, with his own name, motto, day of the month, year of the Lord, and reign of the queen, in the compaſs of a ſingle penny, inchaſed in a ring and bordure of gold, and covered with a cryſtal, all ſo accurately wrought, as to be very legible?

CALLII, in *Ancient Geography*, a promontory of Africa, in Marmarica; and alſo a village ſituate towards the north-eaſt of this promontory. Ptolemy.

CALLIMACHUS, in *Biography*, a celebrated architect, painter, and ſculptor of Corinth, flouriſhed about the year B. C. 540. To him is aſcribed the invention of the Corinthian order. See ABACUS. He alſo made a golden lamp for the temple of Minerva at Athens, which he furniſhed with a wick of aſbeſtos, that it might burn without waſting. Callimachus acquired the name of κακιζο-τεχνος, from being unable to pleaſe himſelf by his works.

CALLIMACHUS, a celebrated poet, grammarian, and critic, was a native of Cyrene in Libya, flouriſhed in the reigns of Ptolemy Philadelphus and Ptolemy Euergetes, being one of the keepers of the Alexandrian library, and died about the year 244 B C. He was the ſon of Battus and Meſatme, whence Ovid denominates him "Battiades." Strabo (lib. xvii.) informs us, that he claimed deſcent from king Battus, who was the founder of Cyrene. He was a diſciple of Hermocrates the grammarian, and excelled no leſs as a critic than a poet. Before he was recommended to the favour of Ptolemy Philadelphus, he taught ſchool at Alexandria, and had the honour of educating Apollonius, the author of the Argonautics. His poetical compoſitions were chiefly ſhort pieces, as hymns, elegies, and epigrams; and when it was objected to him by his enemies that his Muſe could not undertake any conſiderable work, he made uſe in reply of the ſaying which has become proverbial "A great book is a great evil." His powers, however, were manifeſted by two works of greater extent, entitled "Hecate," and "Aitia." The characteriſtics of thoſe poems of Callimachus, which have reached our times, are elegance and poliſh, and choice of expreſſions; and theſe correſpond to the character given of him as a poet by Ovid (Amor. eleg. 15. lib. 1.):

> "Battiades toto ſemper cantabitur orbe;
> Quamvis ingenio non valet, arte valet."
> "The ſtrains of Battus' ſon ſhall ne'er depart;
> If not in genius, he excels in art."

Quinctilian, in his "Inſtitutiones Oratoriæ" (l. x. c. i.), applauds Callimachus as the prince of elegiac poets, among the Greeks. Mad. Dacier, in the preface to her edition of his poems, ſays, that, among the writings of ancient Greece, there is nothing more elegant and polite than theſe compoſitions of our author. To the ſame purpoſe her father, Tanaquil Faber, in his "Abregé des Vies des Poetes Grecs," declares, that Callimachus's manner of writing is neat and ſtrong, and that Catullus and Propertius frequently imitate him, and ſometimes tranſlate him. Accordingly the "Coma Berenices" of the former is a tranſlation from Callimachus. Of the various editions of this writer we may mention Mad. Dacier's, 4to. Paris, 1674; Bentley's, 8vo. London, 1741; Grævius's, 8vo. Utrecht, 1697; Erneſti's, 8vo. L. Bat. 1761; Loeſner's, 8vo. Lipſ. 1774. We have a tranſlation of the works of Callimachus into Engliſh verſe, with notes, &c. by Dr. Tytler, 4to. Lond. 1793. Gen. Dict.

CALLIMUS, in *Phyſiology*, a ſtony ſubſtance found in the cavity of the ætites, or eagle ſtone.

The word is alſo written *calimus*, and in ſome copies of Pliny *calainus*; which latter reading Salmaſius receives.

The callimus fills the hollow of the ætites, much as the yolk does the white of an egg.

The geodes, inſtead of a callimus, or ſolid ſtone, have a looſe, ſandy, chalky, or earthy ſubſtance, and the enhydri a liquid ſubſtance.

CALLINGER, in *Geography*, a town of Hindooſtan, in the circar of Bundelcund; 72 miles W.S.W. of Allahabad.

CALLINGTON, is an ancient ſmall borough town of Cornwall, England. Its ſituation is low, the ſurrounding country bleak and barren, and its houſes are moſtly ſmall indifferent buildings. Here is a cloth manufactory, which furniſhes employ to ſome of the poor inhabitants. It has a weekly market on Wedneſday, and two annual fairs. Callington being only a member of the pariſh of South-hill (where the church is ſituated) has a chapel of eaſe within the precincts of the town. The earlieſt mention of this place on record occurs in the time of Henry III. who in the 52d year of his reign granted the privilege of a market to Reginald de Ferrars, who was then lord of the manor. The town was conſtituted a borough in the 27th year of Elizabeth, when it obtained the privilege of ſending two members to parliament, which right has continued to the preſent time. The borough is governed by a portreeve, but it does not poſſeſs any charter of incorporation. The elective franchiſes of the inhabitants are not clearly aſcertained; but the preſent cuſtom limits the right of election to the burgage-tenures paying ſcot and lot, and the number of voters is about fifty.

On the higheſt part of Hengeſton-downs near Callington St. Kit's-hill, which conſiſts entirely of granite. Near the top, a ſhaft has been ſunk for digging tin, and it is found that the lode of ore is impregnated with wolfram united with quartz. Callington contains 145 houſes, and 819 inhabitants. It is 216 miles W. from London.

CALLINICON, or **Callinicum**, in *Ancient Geography*, called alſo *Leontopolis*, a town of Aſia, ſituate on the left of the Euphrates, near Nicephorium. Procopius informs us, that Coſroes, king of Perſia, took and razed this place.

CALLINICUS, in *Biography*, a native of Heliopolis in Syria, who deſerted from the ſervice of the caliph to that of the emperor, and who imparted the ſecret of compounding and directing the Greek fire, to which the deliverance of Conſtantinople in the two ſieges, A.D. 716—718, has been aſcribed. See *Greek* Fire.

Callinicus, furnamed *Sutorius*, was a native of Petra in Arabia; but ſpent the greateſt part of his life at Athens. He wrote the hiſtory of Alexandria in 10 books, quoted by Jerome, and publiſhed ſeveral other pieces on various ſubjects. He flouriſhed in the reign of Antoninus. Suidas, vol. ii. p. 232.

CALLINUS of Epheſus, a very ancient Greek poet, ſaid to be the inventor of elegiac verſe; ſome ſpecimens of which are to be found in the collection of Stobæus. He flouriſhed about 776 years B. C.

CALLINUSA, in *Ancient Geography*, a promontory of the iſle of Cyprus, according to Ptolemy, marked on the chart of M. d'Anville on the northern coaſt towards the weſt. In ſome charts it is called "Capo Eleni," and in others "Alexandretta."

CALLIONYMUS, in *Ichthyology*, a genus of fiſhes, in the order *Piſces jugulares*, the character of which is as follows: upper lip doubled, or folded in two plaits; eyes approximate; branchioſtegous, or gill membrane, with ſix rays; aperture for breathing in the neck; gill covers ſhut up; body naked; ventral fin very remote.

The ſpecies of this genus are lyra, dracunculus, indicus, baikalenſis, ocellatus, ſagitta, and japonicus.

CALLIOPE, in *Entomology*, a South American ſpecies of Papilio, deſcribed by Linnæus, and delineated in Clerk's Icon. t. 41. and alſo by Seba and Cramer. The wings of this inſect are yellow, with three ſtreaks on the anterior pair, and three bands on the poſterior ones of black.

Calliope, in *Ancient Geography*, a town of Aſia in Syria, which was one of the principal fortreſſes of the Parthians againſt the Medes, according to Pliny.

Calliope, in the *Pagan Mythology*, the chief of the nine Muſes, called by Horace *Regina*. The diſtinguiſhing office of this Muſe was to record the worthy actions of the living; and accordingly ſhe is repreſented with tablets in her left hand.

Such may be ſeen on the marble apotheoſis of Homer, and upon the ſarcophagi of the capitol and of the Mattei palace, which repreſent the Muſes. To Calliope, repreſented by ſome writers as the mother of the Corybantes and Syrens, but more commonly as the mother of Orpheus, is aſcribed the invention of heroic poetry; and her name, according to Diodorus (Bib. Hiſt. l. iv. & vii.), was derived from her fine voice, ἀπὸ τῆς καλῆς ὀπὸς. From this etymology it has been inferred that Calliope is the ſymbol of rhetoric and eloquence; but Euſtathius (Il. A. v. 1.) aſſerts that ſhe was the emblem of heroic poetry, the moſt noble and moſt ancient ſpecies of poetry. As to her fine voice, ſhe poſſeſſed this talent in common with her other ſiſters. Upon the medals of the Pomponian family, ſhe is deſigned by a head crowned with laurel, with a roll or volume from which ſtrings are ſuſpended, in the field of the medal.

CALLIPÆDIA, the art of getting or breeding fine and beautiful children. The word is formed from καλος, *fair*, and παις, *puer*, either boy or girl. We find divers rules and practices relating to this art, in ancient and modern writers.

The Jews are ſaid to have been ſo ſolicitous about the beauty of their children, that care was taken to have ſome very beautiful child (ſuch as was Jochanan, the diſciple of Judah, author of the Miſchna) placed at the door of the public baths, that the women at going out, being ſtruck with his appearance, and retaining the idea, might all have children as fine as he. The Chineſe take great care of their breeding women, to prevent uncouth objects of any kind from ſtriking their imagination: and muſicians are employed at night to entertain them with agreeable ſongs and odes, ſetting forth the duties and comforts of a conjugal and domeſtic life, that the infant may receive before its birth good impreſſions, and come forth not only well-formed in body, but ſuitably diſpoſed in mind.

Callipædia, nevertheleſs, ſeems to have been firſt erected into a juſt art by Claude Quillet de Chinon, a French abbot, who, under the fictitious name of Calvidus Lætus, has publiſhed a fine Latin poem, in four books, under the title of *Callipædia, ſeu de pulchræ prolis habendæ ratione;* wherein are contained all the precepts of the art. Paris, 1656, 8vo. & Lond. 1708, 8vo. It was tranſlated into Engliſh verſe by Mr. Rowe.

CALLIPHAE, in *Mythology*, one of the Ionides.

CALLIPIA, in *Ancient Geography*, a fountain of Epheſus ſo called by Pliny, and denominated "Alitea" by Pauſanias.

CALLIPIDÆ, a people of Scythia near the Palus-Mæotis. According to Herodotus they were a colony of Greeks, eſtabliſhed in Scythia. Pomponius Mela aſſigns them the ſpace that lay betwen the Axiaces and Hypanis or Bogus.

CALLIPOLIS, denoting *beautiful city*, a name given to ſeveral towns, on account of the peculiar advantages of their ſituation or ſtructure. Thus Callipolis was the name of a city on the Cherſoneſus of Thrace, near the Helleſpont, and oppoſite to Lampſacus. See Gallipoli.—Alſo, a town of Sicily, on the eaſtern coaſt, north of Catana and of the river Acis.—Alſo, a town of Caria.—Alſo, a town of Magna Græcia, at the extremity of a peninſula in the country of the Salentins, in the gulf of Tarento.—Alſo, a town of Peloponneſus.—Alſo, a town of Greece in Ætolia, ſeparated from Naupacta by a high mountain, called "Corax."—Alſo, a town of Aſia, towards Galatia and Armenia.

—Alſo, a town of Spain, near the Mediterranean ſea, between mount Sallus and Tarracona.

CALLIRHOE, formed of καλος, *beautiful*, and ξεω, *to flow*, a fountain of Greece at the gate of Calydon, in Ætolia.—Alſo a fountain of Attica, called "Enneacrunos," from its 9 ſprings or channels.—Alſo, a lake of Aſia in Meſopotamia, near which was ſeated the city of Antioch.—Alſo, a mineral fountain of Paleſtine, before the town of that name, and the fortreſs Machærus, according to Pliny.—Alſo, a town of Arabia, included in the territory of Moab, ſituate near the Aſphaltite lake, and famous for its warm baths. According to Joſephus, Herod the Great, in his laſt illneſs, was conveyed hither. Ptolemy places it on the eaſt of Jordan and of the Dead Sea.

CALLIRRHOE, in *Entomology*, a Fabrician ſpecies of Papilio (*Dan. Cand.*) peculiar to Aſia. The wings are entire, with the tip of the anterior pair, and ſix ſpots on the poſterior ones, black.

CALLISIA, in *Botany*, Linn. 63. Schreb. 87. Lam. Illuſt. 84. Juſſ. 45. Claſs and order, *triandria monogynia.* Nat. ord. *Enſatæ*, Linn. *Junci*, Juſſ.

Gen. Ch. *Cal.* perianth three-leafed: leaves linear-lanceolate, keeled, erect, permanent. *Corol.* petals three, lanceolate, acuminate, erect, ſpreading at the top, the length of the calyx. *Stam.* filaments three, capillary, longer than the corolla, dilated at the top into a roundiſh lamina: anthers double, globular, fixed to the inſide of the lamina. *Piſt.* germ ſuperior, oblong, compreſſed: ſtyle capillary, the length of the ſtamens: ſtigmas three, ſpreading, pencilform. *Peric.* capſule, egg-ſhaped, compreſſed, acute, two-celled, two-valved; valves contrary. *Seeds* two, roundiſh. Nearly allied to commelina, and differing from it chiefly in the want of the three barren filaments, tipped with croſs-ſhaped glands, called nectaries by Linnæus.

Eſſ. Ch. *Calyx* three-leafed. Petals three. Anthers double. Capſule two celled.

Sp. 1. C. *repens*, Linn. Sp. Pl. Læf. it. 305. Lam. Illuſ. Pl. 35. fig. 1. (Hapalanthus, απαλος ανθος, tender flower, Jacq. Amer. 11. tab. 11. ſecond edition: 12 tab. 14.) "Flowers axillary, nearly ſeſſile; ſtem ſmooth." Lam. Illuſt. *Root* annual. *Stem* herbaceous, tender, creeping from the joints, rather erect at top, a little branching at the baſe. *Leaves* alternate, egg-ſhaped, acuminate, ſomewhat heart-ſhaped at the baſe, ſheathed, thickiſh, ſhining, growing near together as they approach the top of the ſtem. *Flowers* ſmall, generally three together from each ſheath of the upper leaves, tender, greeniſh. 2. C. *umbellulata*, Lam. Pl. 35. fig. 2. "Little umbels lateral and terminal; ſtem downy near the top; peduncles downy." *Stem* branched. *Leaves* egg-ſhaped, acuminate, petioled; but thoſe near the top of the ſtem ſeſſile and lanceolate, ſheathed. *Umbels* ſimple, from two to five-flowered, but the flowers are occaſionally ſingle; flowers on rather long peduncles, diandrous. Deſcription formed from La Marck's figure. Both the ſpecies are natives of South America and the Weſt Indies. The firſt was introduced into England in 1776 by Dr. Fothergil.

CALLISTA, in *Botany*, a genus formed by Loureiro for a paraſitical plant which grows on the trunks of old trees, and which might have been referred to Epidendrum. He gives it the following character. Claſs and order, *gynandria monandria.* *Cal.* none, but inſtead of it ſeveral ovate-lanceolate ſcales. *Cor.* petals five, ſpreading: three ſeſſile ovate-oblong: two oppoſite, unguiculated, larger, ſwelling at their baſe. *Nectary* tubular, within the petals and attached to their baſe, large, two-lipped: upper lip, oblong, fleſhy, with two horns at its baſe; lower lip, entire, downy, funnel-ſhaped. *Stamen* one, attached to the upper extremity of the nectary; anther operculated, two-lobed. *Piſt.* germ inferior, twiſted, thread-ſhaped: ſtyle and ſtigma none, unleſs we conſider as ſuch a furrow which paſſes from the ſtamen to the germ. *Fruit* generally abortive. *Root* a linear bulb. *Stem* thick, furrowed. *Leaves* alternate, lanceolate, entire, ſtriated, thick, hard, ſheathing. *Flowers* white, in long, lateral, drooping, ſimple racemes. Boſc. Nouv. Dict.

Callista, in *Ancient Geography*, a name formerly given to an iſland of the Grecian Archipelago, afterwards called *Thera*, and now *Santorin*, which ſee.

CALLISTHENES, in *Biography*, a Greek philoſopher and hiſtorian, was a native of Olynthus, and a diſciple and kinſman of Ariſtotle. By the influence of this philoſopher he was appointed to attend Alexander in his expedition to the eaſt; but his free ſpirit and republican ſentiments, together with a conſiderable degree of ſelf-importance, and of auſterity of temper, rendered him very unfit for the attentions and obſequiouſneſs of a courtier. Ariſtotle had taken pains to ſoften the ſeverity of his diſpoſition; his efforts, however, were ineffectual; and therefore, foreſeeing the pernicious conſequences that would unavoidably reſult from the liberty he aſſumed of ſpeaking his mind on all occaſions, he frequently repeated to him the following verſe of Homer, (Il. xviii. v. 95.)

"Ω κύμορος δή μοι, τέκος ἔσσεαι, οἵ ἀγοξεύας."
"My ſon, thy freedom will abridge thy days."

This prediction was verified by the event. Having frequently offended Alexander by his unſeaſonable reflections and remonſtrances, he rendered him altogether implacable by oppoſing his frantic aſſumption of divine honours. Calliſthenes not only abſtained from joining with Anaxarchus and the ſervile throng who flattered his pretenſions and bent before him the ſupple knee, but remonſtrated on the ſubject in a ſpeech full of ſtrong argument and liberal ſentiments. "If," ſaid he, "in the land of barbarians, their modes of thinking are to be adopted, I beſeech you, Alexander, to recollect Greece, for the ſake of which the conqueſt of Aſia and this whole expedition have been undertaken! Conſider, whether on your return, you will compel the free Grecians to adore you, or, exempting them from the diſhonour, will load with it your Macedonians alone; or ſhall the Greeks and Macedonians pay you only human honours, while the barbarians worſhip you according to their barbarous cuſtoms?" See the whole ſpeech in Arrian's Exped. Alex. lib. iv. p. 165, &c. ed. Gronovii. This ſpirited remonſtrance was unpardonable. A pretext was ſoon found in the conſpiracy of Hermolaus for implicating Calliſthenes in a charge of treaſon, though probably he had furniſhed no other occaſion for it beſides that of unguarded language againſt tyranny. He was immediately arreſted with the other perſons that were accuſed, though his fate was for ſome time ſuſpended. Hiſtorians are not agreed as to the mode in which his life terminated; but moſt of them concur in informing us that he was carried about with the army as an object of terror. Ariſtobulus ſays that under this ignominious treatment he died of a diſeaſe: Ptolemy relates that he was tortured and crucified: and Juſtin repreſents him as being disfigured and confined in an iron cage with a dog for his companion, till Lyſimachus freed him from his ſuffering by giving him poiſon. However this be, his death, in conſequence of the charge brought againſt him, is certain, B. C. 328; and it fixes on the memory of Alexander an indelible ſtain. The "Hiſtory of the Actions of Alexander," written by Calliſthenes, is cited by many of the ancients, and ſeems to have been the production rather of an orator, than of a judicious hiſtorian. Polybius charges him with a total ignorance of tactics in his deſcription of the battle between Darius and Alexader. He compoſed many other hiſtorical works, which are not now extant. The moſt conſiderable was, a "Hiſtory of Greece," comprehending 30 years from the peace of Antalcidas. He alſo wrote a "Hiſtory of the Trojan War." A "Periplus," "Perſics," "Macedonics," "Thracics," and "Metamorphoſes," are alſo aſcribed to a writer of his name. His "Apophthegms" are alſo mentioned; among which was a ſaying formerly famous in the ſchools—"that human life is governed by fortune, not by wiſdom." Arrian, ubi ſupra. Plutarch in Alex. apud oper. t. i. p. 695, &c. Quintus Curtius. Juſtin. Voſſ. Hiſt. Græc. Fabr. Bib. Græc. Gen. Biog.

CALLISTIA, Καλλιϛεια, in *Antiquity*, a Leſbian feſtival, wherein the women preſented themſelves in Juno's temple, and the prize was aſſigned to the faireſt.

The word is formed from καλλος, *beauty*, q. d. beauty's rewards. The like conteſt of beauty was held at the feſtival of Ceres Eleuſinia, among the Parrhaſians, firſt ſet on foot by Cypſelus, whoſe wife Herodice was honoured with the firſt prize. Another obtained among the Elians, where the conteſt was among the men, the moſt beautiful of whom was preſented with a ſuit of armour, which he conſecrated to Minerva, to whoſe temple he walked in proceſſion, adorned with ribbons, and crowned with a myrtle garland. Pott. Arch. Græc. lib. ii. cap. 20.

CALLISTRATIA, in *Ancient Geography*, a town of Aſia in Galatia, according to Ptolemy; but it rather belonged to Paphlagonia. It was ſituated on the coaſt of the Euxine ſea, S. E. of the promontory of Cerambis, and S. of that of Zephyrium.

CALLISTRATUS, in *Biography*, an Athenian orator who flouriſhed about the year B. C. 340. After having acquired great reputation and authority in the government of his country, he ſhared the fate of others of a ſimilar deſcription, and was baniſhed. He is probably the ſame perſon that is mentioned by Demoſthenes (Orat. adv. Polyclem,) who was baniſhed to Methone in Meſopotamia, and whom the Athenians had twice condemned to death. The ſucceſs of his pleading in a public cauſe of importance, which Demoſthenes attended in his youth, and the glory acquired by it, induced this young diſciple of Plato to abandon the ſtudy of philoſophy, and to devote himſelf entirely to that of oratory. Calliſtratus is ſaid to have manifeſted great abhorrence when, under a ſentence of exile, ſome perſon expreſſed a wiſh, that the Athenians might ſoon be obliged to reſtore the exiles. Similar to this was the conduct of Rutilius, who retorted againſt one who propoſed to comfort him by repreſenting to him, that a war would ſoon break out, which would occaſion all the exiles to return; "What have I done to thee, that thou ſhouldſt wiſh me a return worſe than my baniſhment? I chuſe rather that my country ſhould bluſh at my baniſhment, than mourn at my return." Plut. in Demoſthen. apud opera, t. i. p. 847. Seneca de Benef. l. vi. c. 37. Gen. Dict.

CALLISTUS, Johannes Andronicus, a learned Greek philoſopher, was a native of Theſſalonica, and ſettled at Conſtantinople, where he was a profeſſor of the Peripatetic philoſophy, and acquired a high reputation for learning. Upon the capture of this city in 1453, he fled with many others into Italy, and fixing his firſt reſidence at Rome, taught the Greek language and read lectures upon Ariſtotle's philoſophy. From hence, for want of due encouragement, he removed to Florence, where he had a vaſt concourſe of diſciples. After ſpending ſeveral years in Italy, he cloſed his life in France. Calliſtus was one of thoſe learned Greeks to whom we are indebted for the introduction of learning into the weſt. Some Greek MSS. bearing his name are ſtill extant; and particularly one in the royal library at Paris, entitled, "A Monody upon the Miſeries of Conſtantinople." Some philoſophical and moral pieces in MS. are alſo aſcribed to him. Biog. Dict.

CALLITRICHE in *Botany* (from καλλος and θριξ, fine hair, but there does not appear any peculiar propriety in the appellation). Linn. Sp. Pl. Claſs and order, *monandria digynia*. Nat. ord. *Holoracæa*, Linn. *Naiades*, Juſſ. *Incertæ ſedis*, Vent.

Gen. Ch. *Cal.* none. *Cor.* petals two, incurved, acuminate, channelled, oppoſite. *Stam.* filament one, long, recurved: anther ſimple. *Piſt.* germ roundiſh; ſtyles two, capillary, recurved; ſtigmas acute. *Peric.* capſule roundiſh, quadrangular, compreſſed, four-ſeeded. Lam. Juſſ. *Peric.* none; unleſs the proper tunic of the ſeeds be ſo called. *Seeds* four, naked, ſemi-elliptical, lenticularly compreſſed, furniſhed on the outer ſide with a broadiſh membranaceous margin, diſpoſed in a kind of compreſſed croſs ſo as to appear in pairs, of a pale bay colour. Gært. Dr. Smith.

Eſſ. Ch. *Calyx* none. *Petals* two. *Stigmas* acute. *Seeds* four, compreſſed, with a winged margin on one ſide.

Obſ. The corolla of Linnæus and the Engliſh authors. is conſidered by La Marck, Juſſieu, &c. as a two-leafed calyx.

Species, C. *aquatica*, Hudſ. 439. Smith Flor. Brit. v. i. p. 8. Eng. Bot. Pl. 722. Lam. Il. pl. 5. (C. verna and autumnalis, Linn. Stellaria, Rai. Syn. 289. Alſine, Ger. em. 614. Lenticula, Loes. Pruſſ. 140. tab. 38.) Water-ſtarwort, or ſtar-headed water-chickweed. Annual. *Roots* fibrous, ſimple. *Stems* ſlender, branched, leafy, ſmooth; floating by means of its thickſet broad upper leaves, till the impregnation is accompliſhed; then each flower ſinks, by the elongation of the top of the ſtem, where new ones are produced, and finally the whole herb ſubſides to the bottom, takes root there, ripens, and ſows its ſeeds. The young plants ſoon riſe to the ſurface, and appear to be nouriſhed from the water by ſimple ſlender roots from each joint of the ſtem, which do not reach the ground till the plant ſubſides. The earlier leaves are oppoſite, ſpatula-ſhaped, entire, three-nerved; but thoſe produced in autumn, after the herb ſinks, are linear, ſingle-nerved, and emarginate, which occaſioned the diſtinction of this ſpecies into two. *Flowers* axillary, ſolitary, ſeſſile, ſmall, whitiſh. Dr. Smith. If the claſs Polygamia were preſerved, as eſtabliſhed by Linnæus, this plant would indiſputably belong to it, ſome of its flowers being hermaphrodite, others with only ſtamens, and others with only piſtils. Linnæus ſtates the flowers of his autumnalis to be all hermaphrodite, but, according to Dr. Smith, the plant does not flower in that ſtate. Dillenius ſeems to have been the firſt that doubted whether there were more than one ſpecies. See his edition of Ray's Synopſis. Very common in England, and the greater part of Europe, in ditches and ſtanding waters.

Callitriche, in *Zoology*, the name under which the green ape of the Engliſh writers (*Simia ſabæa* of Schreber Saeugth) is deſcribed by Buffon.

CALLITRICHUM, in *Botany* (J. Bauh. Moriſ. Ray. See Melissa *pyrenaica*.

CALLITRICHUS, in *Zoology*, ſynonymous with Callitriche, a ſort of monkey of a yellowiſh green colour with black flattiſh face, called by Pennant the green monkey. This is the animal named *ſimia ſabæa* by Schreber. See Simia Sabæa.

CALLITRIX, in *Zoology*, Simia callitrix magnitudine magnorum cynocephalorum, Alpin. Aeg. See Simia Silenus.

CALLIXENE, in *Botany*. (La Marck, Juſſ.) See Enargea.

CALLIXTUS, or Callistus, I., pope, in *Biography*, ſucceeded Zephyrinus in the year 219. Some have ſaid that he built a church to the memory of the Virgin Mary, which is now known by the name of Santa Maria in Tranſtevere, or St. Mary beyond the Tiber: but it is more certain that he incloſed a large piece of ground in the Appian way as a burying-place for the Chriſtians. The ſtory of his martyrdom, with its attendant circumſtances of cruelty, is not very probable, as Alexander Severus was tolerant and favourable to the Chriſtians. He died in 223. Bower's Hiſt. of the Popes, vol. i.

Callixtus II., pope, was Guy of Burgundy, the ſon of William the Great, count of Burgundy, and nearly related to the emperor Henry. Before his election to the papacy he was archbiſhop of Vienne; and on the death of Gelaſius at Clugni, in 1119, he was unanimouſly choſen to ſucceed him by all the cardinals, except thoſe who were of the emperor's party, who adhered to the anti-pope Maurice Burdin, or Gregory VIII. This was a happy choice both for the church and ſtate. Soon after his election, Callixtus held a council at Rheims, in which the emperor, who refuſed to renounce the right of inveſtiture, was ſolemnly excommunicated. From Rheims the pope repaired to Giſors in Normandy, in order, by means of an interview with Henry, king of England, to mediate a reconciliation between him and Louis king of France; but his conciliatory efforts were ineffectual.

From Normandy he paſſed over into Italy, and having obtained ſome forces from the Norman princes in Apulia, he beſieged his rival Burdin, who had retired to Sutri, took him priſoner, and thus terminated the ſchiſm. Earneſtly deſirous of peace with the emperor, he ſent legates into Germany, and a peace was concluded at a general diet held at Worms, in 1122. The emperor was allowed the right of receiving an oath of allegiance from biſhops and abbots elect, and of conferring on them the regalia, for which they were to do him homage; whilſt he conſented to ſurrender the ceremony of inveſtiture by the ring and croſier, which was regarded as an emblem of the conveyance of ſpiritual authority. The articles of agreement, ſettled by the pope and emperor, were approved by the general council held at Lateran in the following year, and remain ſtill in force. After a pontificate of nearly ſix years, this pope died in 1124, and left a great character for moderation and liberality, and a ſtrict obſervance of the canons. Thirty-ſix letters of this pope are preſerved; and other works in MS. on the miracles of ſaints, &c. are attributed to him. Bower, vol. vi. Moſheim, Eccl. Hiſt. vol. iii.

Callixtus III., pope, was advanced to the pontifical chair in 1455, at the age of 76 years. His name was Alphonſo Borgia; he was deſcended of an ancient family, and born at Xativa, in Spain. Before his election he was ſecretary to Alphonſo king of Arragon, and employed in terminating the ſchiſm occaſioned by the anti-pope Clement VIII.; and for this ſervice he was preferred by pope Martin to the ſee of Valencia. Immediately after his elevation to the papacy, he exerted himſelf in reſtraining the progreſs of the Turks under ſultan Mahomet II., who had taken Conſtantinople, and threatened all Chriſtendom. For this purpoſe he fitted out a ſmall fleet, which retook ſome of the iſlands of the Archipelago; and by means of a cruſade, which he cauſed to be preached throughout Europe, he raiſed a conſiderable army, which was committed to the conduct of the famous Hunniades. Notwithſtanding a victory obtained at Belgrade in 1456, which obliged Mahomet to raiſe the ſiege of that city, and the remembrance of which the pope immortalized by ordering the feſtival of the "Transfiguration of Chriſt" to be religiouſly obſerved thoughout all the weſtern world, the Turkiſh army proceeded in its conqueſts. The pope's attention was ſoon occupied by other concerns. Having ambitious deſigns in favour of his nephew, whom he had created duke of Spoleto, he quarrelled with his former patron the king of Arragon, and refuſed to grant to his natural ſon Ferdinand the inveſtiture of the kingdom of Naples. On the deceaſe of Alphonſo, he declared openly againſt Ferdinand, and would have kindled a civil war in the kingdom, if his death, which happened in 1458, had not prevented it. Callixtus is repreſented by contemporary writers as a man of abilities, of great addreſs and experience, and one of the beſt canoniſts of his time: but like other popes, he was betrayed into improper conduct by nepotiſm. His only literary remains are ſome epiſtles and bulls. Bower, vol. vii. Moſheim, vol. iii.

CALLO, in *Geography*, a plain in the juriſdiction of Quito, South America, ſo called from a palace of the Yncas, which bears this appellation, and the ruins of which are ſtill ſeen at the extremity of the plain running northward from Latacunga. See Quito.

Callo *port*, lies on the coaſt of Chili, in the ſouth Pacific Occean, four leagues N. from Solango iſland. S. lat. 1° 10′. W. long. 80° 9′.

CALLONIANA, in *Ancient Geography*, a town of Sicily, according to the Itinerary of Antonine, thought to be the ſame with the Caulonia of Steph. Byz.

CALLONITIS, in *Geography*, a country of Aſia, in Aſſyria, on the confines of Media, near mount Zagrus.

CALLOO, a fortreſs of the Netherlands, on the Scheldt, where the Dutch were defeated by the Spaniards in 1638; five miles W. of Antwerp. N. lat. 51° 15′. E. long. 4° 10′.

CALLOSA, in *Entomology*, a ſpecies of Apis of a ſhining black-blue colour, with a white lip, and callous dot of the ſame on each ſide of the thorax, before the wings. This in an inſect of ſmall ſize, and inhabits Italy. Fabricius.

CALLOSITY, in *Surgery*. See Callus.

CALLOSUM *corpus*, in *Anatomy*, denotes a whitiſh, hard ſubſtance, joining the two hemiſpheres of the brain, and appearing when the two hemiſpheres are drawn back. See Brain.

CALLOT, James, in *Biography*, a celebrated draughtſman and engraver, was deſcended from a noble family, and born at Nancy in Lorraine, in 1593. His paſſion for the arts was ſo ſtrong, and diſcovered itſelf at ſo early a period of his life, that at the age of 12 years, he ſecretly left his father's houſe, and determined to ſeek improvement in Italy. But being deſtitute of money, he joined a company of Bohemians (or of ſtrolling gypſies), with whom he travelled as far as Florence. Here he was taken notice of by an officer of the grand duke, and placed for inſtruction under Remigio Canta Gallina, who was both a painter and engraver. When he left Gallina, he purſued his journey to Rome; but meeting with ſome merchants from Nancy, who knew him, they took him back to his family. Soon after he made a ſecond elopement, and from Turin he was brought home by his brother. At length, his father finding that his inclination for the arts was invincible, acquieſced in his indulgence of it, and ſent him to Rome; where he aſſiduouſly applied to drawing, under Giulio Parigii. Being deſirous of acquiring a facility in handling the graver, he put himſelf under the inſtruction of Philip Thomaſſin, and having made conſiderable improvement, he afterwards went to Florence,

rence, where he was employed, and particularly encouraged by the great duke Coſmo II. At this city he firſt began to etch, and he executed ſeveral ſmall ſubjects with great ſucceſs. Upon the death of the duke, for whom he performed many curious works, he returned to Nancy, married, and became a great favourite with the duke of Lorraine, who granted him a penſion. In this interval of his life, he deſigned and engraved the ſiege of Breda; and at Paris he engraved for Louis XIII. the ſieges of Rochelle and of the iſland of Rhé and ſeveral others. On occaſion of the troubles of Lorraine, which terminated with the ſiege and capture of Nancy, he determined to return with his wife to Florence; but death prevented the execution of his purpoſe, March 28, 1635. After the reduction of Nancy in 1631, he was deſired by Louis XIII. to draw and engrave the ſiege of that place; but this buſineſs he declined, alleging that he did not think it conſiſtent with the reſpect which he entertained for his prince, and the love which he bore to his country, to repreſent any thing that ſhould appear to their diſgrace. When a courteſan inſiſted on his gratifying the king's wiſhes, and enforced the requiſition with a menace, that he ſhould be compelled to obey, he boldly replied, "I will ſooner diſable my right hand, than be conſtrained to do any thing contrary to my honour." The king was pleaſed with this magnanimous reply, and offered him a penſion of 3000 livres if he would attach himſelf to his ſervice. Callot gratefully refuſed the offer, preferring the love of his country to the amaſſing of a fortune.

This artiſt engraved in ſeveral ſtyles; the firſt of which was an imitation of his maſter Canta Gallina. He afterwards worked altogether with the graver; but without ſucceſs. His next ſtyle was the mixture of the point and the graver, with coarſe broad hatchings in the ſhadows. But his beſt manner is that, which appears to have been executed with the greateſt freedom, by which he has expreſſed, as we may ſay, with a ſingle ſtroke, variety of character, and correctneſs of deſign. He is ſaid to have been the firſt who uſed hard varniſh in etching, which has been found much ſuperior to that which was before adopted. The fertility of invention, and the vaſt variety, found in the works of this excellent artiſt, are aſtoniſhing. It could hardly have been ſuppoſed poſſible to combine ſo great a number of figures together as he has done, and to vary the attitudes, without forced contraſt, ſo that all of them, whether ſingle figures or groups, may be eaſily diſtinguiſhed from each other, even in the maſſes of ſhadow; more eſpecially when it is conſidered that they are often excedingly minute. On a curſory view of ſome of his moſt admired pieces, the whole appears confuſed and without harmony; but a careful examination diſcovers the richneſs, the beauty, the taſte, and the judgment which are beſtowed on the diſpoſition of the figures, the management of the groups, and the variety and propriety of the attitude. The works of this maſter are very numerous and various. In repreſentation of all the varieties of human life, from beggars and peaſants to knights and nobles, he excelled: characteriſing all with the niceſt touches of nature. Of his ſubjects many are of the moſt painful and ſhocking kind, ſuch as public executions, the miſeries of war, and the like; many are groteſque and fanciful, and exhibit a ſtrong imagination.

The number of Callot's works is ſaid to amount to 1500 prints. His etchings are moſt eſteemed, and collections of them are deemed very valuable. Strutt enumerates the following prints; viz. "The Murder of the Innocents," of which that engraved at Florence is the moſt rare; a fine impreſſion of it being found with difficulty:—"The Marriage of Cana in Galilee," from Paolo Veroneſe;—"The Paſſion of Chriſt," the firſt impreſſions of which are very ſcarce;—"St. John in the Iſland of Palma;"—"The Temptation of St. Anthony;"—"The Puniſhments," exhibiting the execution of ſeveral criminals; and—"The Miſeries of War;"—"The great Fair of Florence;"—"The little Fair," otherwiſe called "The Players at Benti," one of the ſcarceſt of Callot's prints;—"The Tilting, or the New Street at Nancy;"—"The Garden of Nancy;"—"View of the Pont Neuf;"—"View of the Louvre;" and "Four Landſcapes." Callot was very regular in his mode of living, and exact in his religious obſervances. Felibien. Strutt.

CALLOUS, in *Surgery*, denotes indurated or hardened. See CALLUS.

CALLOUS *eggs*, *ova calloſa*, the longer and better ſort, ſuppoſed to contain male chicks; having a denſer white, and richer flavour than the reſt. See EGG.

CALLULO, in *Geography*, a town of Aſiatic Turkey in the province of Diarbekir; 60 miles N.W. of Rabba.

CALLUNBORG, or KALLUNBORG, a town of Denmark; 60 miles W. of Copenhagen.

CALLUS, in *Surgery*, is a preternatural hardneſs or induration of any fleſhy part of the body; and not unfrequently, this term is applied to the ſubſtance by which fractured bones are ſpontaneouſly united to each other. In this latter ſenſe, we ſay "the *callus* has not formed;" *i. e.* the bony union is incomplete: "The *callus* is exuberant;" *i. e.* the oſſific matter is very abundant.

A calloſity, or preternatural hardneſs of the ſkin takes place either from external friction (as in the formation of CORNS), or from an internal cauſe, which probably conſiſts in a morbid action of the exhalent arteries. In the hard and thickened ſtate of the ſkin which conſtitutes the diſeaſe named a CORN (which ſee), there is found to be an accumulation of dry cuticular ſubſtance, in numerous layers, ſomewhat reſembling an onion. The lamina of horny cuticle which forms on the hands and feet of hard-working people, is entirely devoid of ſenſation, and may therefore be ſcraped or cut with impunity.

Mr. Leewenhoek examining the callus formed on the hands and feet, obſerved that it was a ſubſtance compoſed of ſeveral layers of particles ſo looſely connected, that it was a wonder they could hang together; on putting a piece of this into fair water, after it had ſtood a conſiderable time to ſteep, he found that the particles of which it was compoſed, would eaſily ſeparate from one another with a little touch of a quill, and theſe ſeparated particles put into a drop of water, and examined before the microſcope, were found to be all of the ſame regular ſhape, which was like that of a weaver's ſhuttle, being broad in the middle, and pointed at each end, with a line in the middle like thoſe upon the uppermoſt, or outſide ſkins of fruits, or of our bodies, but generally irregular. Theſe pieces were thick in proportion to their ſize; and when they are put into water and ſeparated again, they naturally form a great number of other particles, all of which are of the ſame regular figure with the original piece. Phil. Tranſ. N° 373. p. 160.

By this we ſee the reaſon of the increaſe of thickneſs of the ſkin of the hands of thoſe who labour hard, and of the feet of ſuch people as walk much, which is wholly owing to the addition of a vaſt number of theſe ſhuttle-like particles, which form combinations together; but theſe ſo looſely, that it is no wonder they are ſo eaſily ſeparated on moiſtening.

The way to avoid ſuch calloſities of the ſkin is to waſh and ſcrape the cuticle very frequently; and there can be no doubt that even corns might be generally prevented, if perſons would always uſe eaſy ſhoes from their infancy. Women, we find, are chiefly troubled with ſuch painful calloſities of their feet, from wearing tight ſhoes, and allowing their toes to preſs one upon another.

Surgeons apply the term *callous*, adjectively, to the edges of old ulcers, when they are become thickened and inſenſible. This kind of induration is unfavourable to a cure, and ſhould be removed by the knife or cauſtic, if it cannot be ſoftened by emollient poultices, &c. See ULCER.

CALLUS, when ſpoken of bone, is in reality nothing more than the new oſſific ſubſtance formed by a proceſs of nature very ſimilar to the growth of any other part of the body; but the ancients had an idea of boney callus being formed by the effuſion and gradual conſolidation of a glutinous matter, like the white of an egg; and they ſuppoſed that all fractured bones were ſoldered, as it were, by the intervention of this jelly, as two boards are glued together by a carpenter. See OSSIFICATION.

It is not always in the power of ſurgeons to reſtrain or command the growth of callus; for ſometimes a broken bone, for want of due action in its veſſels, will remain ſeveral months diſunited; and, at other times, the callus becomes ſo exuberant as to cauſe an unſightly enlargement of the bone, around the broken extremities. One of the moſt effectual modes of reſtraining the growth of callus, is to keep a conſiderable degree of preſſure over the part by means of a bandage; which, by diminiſhing the diameters of the blood veſſels, will leſſen their action. See FRACTURE.

To facilitate the growth of callus on the union of broken bones, the patient ſhould take ſtrengthening remedies, and be put on a generous diet; and if this does not produce the intended effect, the broken extremities of the bones may be rubbed together, or friction may be kept up externally, ſo as to cauſe a moderate degree of inflammation. Several ſurgeons, on finding that a fractured bone would not unite, have made an inciſion down to the bone, and ſawn off a portion of it, or raſped it with a rough file, in order to excite the veſſels to action; in ſome of theſe caſes the oſſific proceſs has been revived, and a union has taken place, but generally this experiment has failed, as the growth of bone is more ſlow and difficult to produce than the regeneration of ſoft parts, on account of their difference in ſtructure.

CALLYCHTHIS. See CALLICTHYS.

CALLYDIUM, in *Ancient Geography*, a ſtrong caſtle of Aſia Minor, ſeated on one of the ſummits of Mount Olympus in Phrygia.

CALLYONIMUS, in *Botany*. (Geſ. Hor.) See CONVALLARIA *majalis*.

CALLYSIND, in *Geography*, a river of Hindooſtan, which runs into the Chumbul, in the circar of Kotta.

CALM, in *Sea Language*, that ſtate of the air and water when there is no wind ſtirring. A calm is more terrible to a ſea-faring man than a ſtorm, if he has a ſtrong ſhip and ſea-room enough, for under the line exceſſive heat ſometimes produces ſuch dead calms, that ſhips are obliged to ſtay two or three months without being able to ſtir one way or other. Two oppoſite winds will ſometimes make a calm. This is frequently obſerved in the gulf of Mexico, at no great diſtance from the ſhore, where ſome guſt or land wind will ſo poiſe the general eaſterly wind, as to produce a perfect calm.

Calms are never ſo great in the ocean as in the Mediterranean, by reaſon the flux and reflux of the former keep the water in a continual agitation, even where there is no wind; whereas there being no tides in the latter, the calm is ſometimes ſo dead, that the face of the water is as clear as a looking-glaſs; but ſuch calms are almoſt conſtant preſages of an approaching ſtorm. On the coaſts about Smyrna, a long calm is reputed a prognoſtic of an earthquake.

When a ſhip is cloſe under the lee of another, the windward veſſel is ſaid to *becalm* the leeward.—A ſhip is alſo ſaid to be *becalmed* when near the land, which keeps the wind from it.

It is not uncommon for the veſſels to be calmed or becalmed, as the ſailors expreſs it, in the road of the conſtant Levantine winds, in places where they ride near the land. Thus between the two capes of Cartooche toward the main, and cape Antonio in Cuba, the ſea is narrow, and there is often a calm produced by ſome guſt of a land wind, that poiſes the Levantine wind, and renders the whole perfectly ſtill for two or three days.

In this caſe the current that runs here is of uſe to the veſſels, if it ſets right; when it ſets eaſterly, a ſhip will have a paſſage in three or four days to the Havannah; but if otherwiſe, it is often a fortnight or three weeks ſail; the ſhip being embayed in the gulf of Mexico.

When the weather is perfectly calm, no wind at all ſtirring, the ſailors try which way the current ſets by means of a boat which they ſend out, and which will ride at anchor, though there is no bottom to be found, as regularly and well as if faſtened by the ſtrongeſt anchor to the bottom. The method is this: they row the boat to a little diſtance from the ſhip, and then throw over their plummet, which is about forty pounds weight; they let this ſink to about two hundred fathom; and then, though it never reaches the bottom, the boat will turn head againſt the current, and ride as firmly as can be.

CALM *Latitudes*, are ſituated in the Atlantic ocean, between the tropic of Cancer, and the latitude of 29° N., or they denote the ſpace that lies between the trade and variable winds, becauſe it is frequently ſubject to calms of long duration.

CALM *Point*, in *Geography*, lies on the N.W. coaſt of North America, within Briſtol bay, on the north ſide.

CALMAR, a ſea-port town of Sweden, in the province of Smaland or Smoland, near the Baltic Sea, ſeparated from the iſle of Oeland by a ſtrait, about ſeven miles broad in the narroweſt part, and ſtrongly fortified by walls, ditches, a caſtle, and redoubts. It is about a mile in circumference, and contains 450 houſes. The ſtreets croſs each other at right angles. The inhabitants carry on a ſmall trade, exporting chiefly planks, alum, and hemp, and poſſeſs, beſides ſmall craft, about 70 veſſels, from 100 to 300 tons burthen. Near the town is the caſtle, ſtanding on an eminence, and the only remains of its ancient magnificence. The building has been conſtructed at different intervals, and exhibits a motley mixture of Gothic and Grecian architecture. Over one of the doors is an inſcription, John III. 1568. But part of the manſion muſt be much older, as the apartment in which the deputies of the three kingdoms, Sweden, Denmark, and Norway, uſed to aſſemble for the election of their common ſovereign ſtill ſubſiſts: it is 94 feet long and 30 broad. This palace, once the reſidence of the celebrated Margaret, and remarkable in the hiſtory of this country, is converted into a diſtillery. Calmar is celebrated for the union, which took place in it, in 1397, and which ſtipulated, that the ſame monarch ſhould rule over Denmark, Sweden, and Norway, and be choſen by the deputies from the ſtates of the three kingdoms aſſembled at Calmar. During the whole period in which theſe regulations ſubſiſted, Sweden was a tributary kingdom to the ſovereigns of Denmark;

mark; the union was upheld by the vigor and abilities of Margaret; but under her weak and unwarlike ſucceſſors, it entailed on Sweden all the horrors of foreign invaſion and inteſtine diſcord. From this ſtate of alternate oppreſſion and anarchy. it was reſcued by the valour and prudence of Guſtavus Vaſa, on whom the gratitude of the Swedes conferred the dominion of the country which he had delivered: they renounced, in his favour, the right of electing their kings, and declared the crown hereditary in his male iſſue, A.D. 1516. See Sweden. N. lat. 56° 40′ 30″. E. long. 16° 21′ 45″.

CALMET, Don Augustin, in *Biography*, a celebrated commentator on the Bible, was born near Commerci, in Lorraine, in 1672, and became a Benedictine of the congregation of St. Vannes, in 1688. Having paſſed through the uſual courſe of philoſophy and theology, he was employed in teaching them to the younger part of the community, till in 1704 he ſettled as ſub-prior in the abbey of Munſter, in Alſace, where he preſided over an academy of 8 or 10 monks devoted to the ſtudy of the Scriptures. There he compoſed his commentaries on the Scriptures, publiſhed in French from 1707 to 1716. In 1718 he was appointed to the abbacy of St. Leopold in Nancy; and in 1728 he was elected abbot of Senones. The title of a biſhop *in partibus* was offered him, but he declined accepting it. After a courſe of literary labour, in which he diſplayed great erudition and induſtry, though not always equal taſte and judgment, he died, highly eſteemed, in 1757. His principal works are, "A Literal Commentary on all the Books of the Old and New Teſtament," 23 vols. 4to. reprinted in 26 vols. 4to. and 9 vols. folio; and abridged by Rondet, in 14 vols. 4to. "The Diſſertations and Prefaces of theſe Commentaries, printed ſeparately, with 19 new Diſſertations," 3 vols. 4to.; "The Hiſtory of the Old and New Teſtament," 2 vols. 4to.; reprinted in 4 vols. 4to., and 7 vols. 12mo.; "Hiſtorical, critical, and chronological Hiſtory of the Bible, with Figures," 4 vols. folio.; in which the matter of the commentaries is reduced to alphabetical order, in the form, and under the title of a dictionary, publiſhed in 1730, in 4 vols. folio. Although the author's commentaries did not eſcape cenſure, and were treated by father Simon with a conſiderable degree of aſperity and contempt, yet, being diſtinguiſhed by moderation and exemption from polemical diſputes, they were peruſed by Proteſtants as well as Roman Catholics; the work became very popular; and within a few years after its publication, there were ſeveral editions of it in French, Latin, Dutch, Italian, Spaniſh, Engliſh, and other languages; and it is ſtill conſidered as a ſtandard work. It has been much and deſervedly valued on account of many excellent elucidations which it contains of difficult paſſages in the Holy Scriptures, beautiful delineations of Oriental manners, and lively, entertaining hiſtories extracted from authors little known even among the learned. A new and valuable edition of it with conſiderable retrenchments and additions, and a new ſet of plates, under the direction of Mr. C. Taylor, appeared in London in 1797, &c. The additions form a ſeparate volume under the title of "Fragments," with a great variety of appropriate and well executed engravings. Other works of Calmet are "Eccleſiaſtical and civil Hiſtory of Lorraine," 3 vols. folio; reprinted in 5 vols.; "Catalogue of Writers of Lorraine, folio; "Univerſal Hiſtory, ſacred and profane," 15 vols. 4to.; "Diſſertations on the Apparitions of Angels, Demons, and Spirits, and on the Vampiers and Ghoſts of Hungary," a ſmall collection of reveries; and "Literal, Hiſtorical, and Moral Commentary on the Rule of St. Benedict," 2 vols. 4to. containing much curious information on ancient cuſtoms. Calmet deſerves notice alſo as a writer on Hebrew muſic in his commentary on the pſalms; as a ſmall volume, intitled "Treſor d'Antiquitez," compiled from his ſacred writings, not only concerning the muſic of the Hebrews, but ancient muſic in general, with repreſentations of muſical inſtruments, was publiſhed at Amſterdam, in 1722.

Ancient muſic, in general, is almoſt become an unprofitable and hopeleſs ſtudy; but that of the Hebrews, the moſt ancient of all, is now included within the confines of conjecture; and Don Calmet's conjectures are perhaps, as probable as thoſe of any one of the numerous authors who have written on the pſalms, and exerciſed their ſagacity and ingenuity in expounding and defining what ſome have long ſince thought involved in cimmerian darkneſs. However, Kircher, Merſennus, and Don Calmet, have thought otherwiſe; but whether they have taught their readers to ſee in the dark, as ſome animals are ſuppoſed to do, we are unable to ſay.

CALMENDA, in *Geography*, a town of Portugal, not far from Braga.

CALMINA. See Calamo.

CALMINERA, Cape, lies on the coaſt of Coromandel, in N. lat. 10° 15′. E. long. 79° 40′. a few leagues S. of Negapatnam.

CALMINT, a town of France, in the department of the Upper Garonne; 7 leagues S.S.E. from Toulouſe.—Alſo, a town of France, in the department of the Aveiron, 2½ leagues S. of Rhodez.

CALMUCS. See Kalmucs.

CALN, East and West, two townſhips of Cheſter county, Pennſylvania, in North America.

CALNE, a market and borough town of Wiltſhire, in England, is ſituated on the banks of the Marlen river. This ancient borough was endowed with peculiar privileges, previous to the Roman conqueſt, and according to the domeſday-book it never yielded or paid taxes, "ſo that it is not known how many hides are therein." The kings of the Weſt Saxons had a palace here; and from the names of Caſtle ſtreet and Caſtle-field, it is generally imagined that a caſtle reared its maſſive walls in the neighbourhood of the town. Here was alſo an hoſpital of black canons, dedicated to St. John, and valued, at the diſſolution, at 2l. 2s. 8d. per annum. Calne is an ancient borough by preſcription, and ſends two members to parliament, who are elected by fifteen voters; the firſt return was made in the reign of Edward I. The corporation conſiſts of two guild ſtewards, who are choſen annually, and an unlimited number of burgeſſes. Previous to February 25, 1723, the privilege of election was veſted in all the inhabitants having right of common; but it was then determined, that the power of chooſing members reſided with the ancient burgeſſes only; and that the right of returning members was in the guild ſtewards. The manor, prebend, and parſonage of Calne, are held by leaſes for ſeveral lives, from the dean, chapter, and treaſurer of Sarum. In the reign of Edward the martyr, a great ſynod or convocation was held here, at the inſtigation of Dunſtan, archbiſhop of Canterbury, to determine the controverſy between the monks and ſecular prieſts, which had commenced in the ſynods at Wincheſter, and Catlege, in Cambridgeſhire. From the importance of the queſtion, the principal nobility, as well as the biſhops and ſeculars, attended. During the debate, while biſhop Beornhelm was pleading for the prieſts, the timbers of the aſſembly room gave way, and the ſtructure fell to the ground; moſt of the ſeculars were buried beneath the ruins;

but the ſeat of Dunſtan, preſident of the ſynod, and chief advocate for the monks, alone ſtood firm. This circumſtance, in that age of ſuperſtition, was conſtrued into an interpoſition of Heaven in their favour; but ſubſequent writers have aſſigned a more natural reaſon, and have not heſitated to aſſert, that Dunſtan had cauſed the beams to be ſawn aſunder, taking care that his own ſeat ſhould remain fixed. This account ſeems, from the ſanguinary diſpoſition of Dunſtan, to be moſt probable. Calne has, of late years, greatly increaſed in ſize and population; it contains 781 houſes, and 3767 inhabitants, moſt of whom are employed in the manufacture of broad-cloth, ſerges, and other articles of the cloathing buſineſs. Here are three meeting-houſes for Preſbyterians, Anabaptiſts, and Quakers. The church is a large ſtructure, dedicated to St. Mark, with a handſome ſquare tower at the north-eaſt end. The town is plentifully ſupplied with water from two ſtreams, one iſſuing from the foot of the hills near the village of Calſton, the other from Cherill; theſe rivulets unite, and run through the centre of the town, giving motion to many fulling and griſt-mills. A free-ſchool was founded here by John Bentley, eſq. of Richmond in Surrey; who, by his will, dated September 29, 1660, gave certain lands, called Frickett's Fields, adjoining to Lincoln's Inn, then worth about 500l. for its erection and maintenance for ever. By the donations of ſir Francis Bridgman, knt. certain exhibitions are eſtabliſhed at Queen's College, Oxford, for the benefit of boys born in the county of Wilts, and educated in this free-ſchool. "The maſter to keep a regular grammar ſchool, and teach ſeven boys the Latin and Greek tongues, and otherwiſe qualify them for the Univerſity."

About three miles eaſt of Calne, on the ſide of the London road, is a monument, which attracts not only the notice of all travellers on this road, but alſo the obſervation of people over the north part of Wilts, and many parts of the adjoining counties. This is the figure of a large White Horse, that was formed by paring off the turf from the ſide of the chalk-hill; the horſe is repreſented in a trotting poſition, and executed with a pretty correct outline; it was cut at the expence of Dr. Allſup, of Calne, about twenty-five years ago, and meaſures from the head to the tail about 157 feet.

About two miles weſt of the town is **Bowood**, the ſeat of the marquis of Lanſdown. The houſe is a large, commodious, but irregular ſtructure, and contains ſome fine pictures, among which is a valuable collection of portraits of eminent characters. The park and pleaſure grounds are extenſive, and diverſified with much beautiful ſcenery. A diſtinguiſhed feature, and ornament of theſe grounds, is a large lake, which winding beneath ſome fine hanging woods, conſtitutes an intereſting object; at the head of this lake is a ſingularly pictureſque caſcade, which, though wholly artificial, is juſtly admired for its approximation to the irregularities of nature.

CALNEH, in *Scripture Geography*, a city in the land of Shinaar, built by Nimrod, and at one time the ſeat of his empire (Gen. x. 10.); ſuppoſed to be the Chalno or Calno of Iſaiah, (ch. x. 9.) and the Channeh or Canneh of Ezekiel, (ch. xxvii. 23.) Theſe prophets join it with Haran, Eden, Aſſyria, and Chilmad, which traded with Tyre; and hence it is inferred, that it muſt have been ſituated in Meſopotamia. It is ſaid by the Chaldee interpreters, and alſo by Euſebius and Jerom, to be the ſame with Cteſiphon, which was ſeated on the Tigris, about three miles diſtant from Seleucia, and for ſome time the capital of the Parthians. This opinion is confirmed by the name Chalonitis, evidently derived from Chalne or Chalno, which was given by the Greeks to the country about Cteſiphon. Wells's Geog. of the Old Teſtament, vol. i. p. 229.

CALOBRA, in *Geography*, the moſt conſiderable harbour in the iſland of Majorca, both for its ſecure entrance, and the fine country that ſurrounds it; as well as for the ſprings of freſh water that are near it.

CALODENDRUM, in *Botany*, (καλος, *beautiful*, δενδρον, a *tree*.) Schreb. gen. 384. Thunb. gen. 41. Willd. 437. Juſſ. 427. Claſs and order, *pentandria monogynia*. Nat. ord. *incertæ ſedis*. Juſs.

Gen. Ch. *Cal.* perianth one-leafed, permanent, five-parted; ſegments egg-ſhaped, acute, beſet with ſtrong hairs on the outſide; the edges ſlightly revolute. *Cor.* petals five, lanceolate, obtuſe, ſpreading, channelled, keeled, waved, pubeſcent, three times the length of the calyx: nectaries five, fixed to the receptacle within the petals, and ſhaped like them, linear-lanceolate, awl-ſhaped at the tip, terminated by a gland, ſmooth, ſilvery-glandular, narrower than the petals, but of the ſame length. *Stam.* filaments five, equal, the length of the corolla, one of them generally barren; anthers egg-heart-ſhaped, furrowed, fixed longitudinally to the filaments. *Piſt.* germ pedicelled, capitate, beſet with ſharp points, ſuperior: ſtyle fixed to one ſide of the germ, thread-ſhaped, the length of the ſtamens; ſtigma ſimple obtuſe. *Peric.* capſule peduncled, egg-ſhaped, bluntly five-angled, beſet with ſtrong points, five-furrowed, five-celled, five-valved. *Seeds* in pairs, ſomewhat triangular, convex on the back, ſmooth.

Eſſ. Ch. *Calyx* five-parted. Petals five. Nectaries five. Capſule five-celled, five-angled.

The corolla, nectary, and ſtamens, all vary in the number of their parts, which are ſometimes four, generally five, and very rarely ſix; ſo that in fact the capſule alone forms the eſſential character.

Sp. C. *capenſe*, Thunb. Diſſ. p. 43. La Marck in Journ. Hiſt. Nat. pl. 3. (Dictamnus capenſis, Linn. Supp. Vahl. Symb. 3. p. 58.) A tree. *Branches* oppoſite, or three together. *Leaves* oppoſite, petioled, egg-ſhaped, entire, evergreen. *Flowers* in terminal panicles, on oppoſite, one-flowered peduncles. A native of the Cape of Good Hope. La Marck, in the Journal d'Hiſtoire Naturelle, has noticed its near affinity to dictamnus, under which genus the younger Linnæus and Vahl have placed it.

CALOGERI, Καλογεροι, or Caloyers, monks, or religious, in Greece, both male and female; inhabiting particularly mount Athos, but diſſeminated alſo throughout all the churches of the Eaſt. They follow the rule of St. Baſil, and make vows like the weſtern religious. Tournefort ſays, the females are moſt of them only a more moderate ſort of Magdalens, who, as they grow old, make a vow to practiſe thoſe virtues they had much neglected in their youth; and retire into convents to lead a life ſomewhat leſs ſcandalous than before, under the eyes of a ſuperior or *hegumeniſſa*, who is far from being too ſevere.

Amongſt theſe monks, whatever their name imports, it is not uncommon, ſays Sonnini, (Travels in Greece, p. 228.) to meet with young boys, from 10 to 12 years old, clothed in their habit, which conſiſts of a plain, long, black, gown, confined by a girdle. Theſe friars, he ſays, are very dirty, and very ugly, from the habit which they contract of neglecting their exterior, and of taking care neither of their beard nor hair. Their character, he adds, is formed of hypocriſy, haughty and groſs ignorance, meanneſs and treachery; though they wiſh to be reckoned to poſſeſs great knowledge, and a reputation for ſanctity, in order to ſecure from the people attention and reſpect. Their vows are obedience, chaſtity, and abſtinence. The firſt and laſt of theſe tows are obſerved with ſufficient exactneſs; but the ſecond is more generally diſregarded; and ſome of them are accuſed of a degree of brutality, in the infringement of laws which nature, more powerful than all the inſtitutions of convents, diſavows. The Caloyers, in ſome places, are divided into Cænobites, Anachorites, and Aſcetics, or hermits; the life of which laſt is the moſt ſevere and recluſe.

The Turks alſo uſe the word Caloyers for their derviſes, or religious muſſulmen. See Dervis.

CALOGERIZA, in *Geography*, a town of European Turkey, in the province of Bulgaria; 64 miles E. of Sofia.

CALOGERO, St. a town of Sicily, in the valley of Mazara; 24 miles E. of Mazara, and 2 N.E. of Sacca or Sciacca.—Alſo, a mountain of Sicily, one of the higheſt in the iſland, next to Ætna, on the ſummit of which is a reſidence of hermits.

CALOGURO, St. a cape on the eaſt coaſt of Sicily; 9 miles E. of Lentini.

CALOIERA, a ſmall Greek iſland in the Archipelago; 5 leagues ſouth of Andros.

CALOITIAM, in *Zoology*, a ſpecies of Trichoda of a broadiſh oblong ſhape, with ſhining horns on the anterior part. *Mill. Hiſt. Verm.* This kind is found in water wherein vegetables have been infuſed. It is flat, obtuſe at both ends, with a black ſpot and a few briſtles near the poſterior extremity.

CALOMEL, in *Pharmacy*. See Mercury.

CALONE, in *Ancient Geography*, a place of Germany, on the route from Lugdunum Batavorum, to Argentoratum, between Gelduba and Vetera. Itin. Anton. Cellarius places it at Kalen-Haſen; but M. d'Anville refers it to a paſſage of the arm of the river Kelnet or Kendel. It was near the Rhine in Germanica Secunda, S.E. of Colonia Trajana.

CALONERY Point, in *Geography*, a cape on the eaſt coaſt of the iſland of St. Vincent; one mile S. of Young Point.

CALONI, a town of European Turkey, in the iſland of Metelin, in a gulph to which it gives name, in which are two Greek convents.

CALONNEA, in *Botany*, (Buchoz.) See Galardia.

CALONOSOS, in *Ancient Geography*, a mountain of Arabia, at the entrance of the Perſic gulf. Arrian.

CALOO Sand, lies on the coaſt of Holland, between the Bodkil to the ſouthward, and the eaſt Gat channel to the northward.

CALOPHYLLUM, in *Botany*, (καλὸς *beautiful*; φυλλον, *a leaf*.) Linn. gen. 658. Schreb. 1587. Willd. 1026. Gært. 242. Juſſ. 258. Lam. Illuſt. Pl. 459. (Calaba, Plum. gen. 18. La Marck, Encyc. vol. i. p. 552. Boſc. Nouv. Dict. vol. iv. p. 99.) Claſs and order, *polyandria monogynia*, Linn. *Polygamia monœcia*, Schreb. Nat. ord. *Guttiferæ*, Juſſ.

Gen. Ch. *Cal.* four, two or one-leafed; leaves roundiſh, concave, coloured, deciduous, ſometimes wanting. *Cor.* petals four, roundiſh, concave, ſpreading. *Stam.* filaments numerous, thread-ſhaped, ſhort; anthers oblong, erect. *Piſt.* germ ſuperior, roundiſh; ſtyle thread-ſhaped, the length of the ſtamens, or none. *Peric.* drupe globular, fleſhy. *Seed*, nut globular, rather acuminate, large.

Eſſ. Ch. *Cor.* four-petalled. *Cal.* four-leaved, coloured. Drupe globular.

Sp. 1. C. *inophyllum*, Linn. Sp. Pl. Gært. Tab. 43. fig. 1. La Marck, Pl. 459. (Ponna or ponna-maoam, Rheed. mal. 4. Tab. 38. Rai. Hiſt. 1525. Bintangor maritima, Rumph. amb. 2. Tab. 71. Arbor indica, mali medicæ amplioribus foliis, Pluk. alm. 41. Tab. 147. fig. 3. Inophyllum, Burm. Zey. 130. Tab. 60. β. C. calaba, Jacquin, Amer. 267. Tab. 165.) "Leaves inverſely egg-ſhaped, obtuſe; fruit ſpherical, yellowiſh." Lam. A large tree. *Trunk* thick, covered with a blackiſh, cracked, almoſt ſcaly bark, and ſupporting a vaſt umbrageous head. *Young branches* quadrangular. *Leaves* four or five inches long, and nearly three inches broad, oppoſite, obtuſe, ſometimes emarginate, entire, ſmooth on both ſides, ſhining, coriaceous, on ſhort petioles, and remarkable for the numerous, extremely fine, lateral, parallel nerves, which Burman fancied to reſemble the fibres of a muſcle diſſected longitudinally, and thence called the tree inophyllum. *Flowers* white, fragrant, growing on the ſmall branches in ſhort, oppoſite, axillary racemes, or rather, if La Marck's figure be accurate, umbels; ſome with only ſtamens mixed with the others in the ſame raceme or umbel. *Fruit* very reſinous or oily; kernel at firſt ſweet, afterwards bitter. La Marck obſerves, that the calaba of Jacquin can ſcarcely be called a variety, differing only in being rather ſmaller in all its parts, and, as Jacquin ſuſpected, having none of the peculiar characters of the next ſpecies, to which it has been erroneouſly united by Linnæus. When the bark is wounded, there exudes a viſcous, yellowiſh fluid, which thickens and hardens in the air, and is the reſin imported by the French from Madagaſcar, and the Iſle de France, under the name of Tacamaque. It is alſo called green balſam, or balſam of the Virgin Mary, and is uſed as a vulnerary. According to Dutour (Nouv. Dict.), that which is produced by the Weſt Indian variety is of a deeper green colour. A native of the Eaſt and Weſt Indies, and of the Society Iſles, and New Caledonia. 2. C. *calaba*, Linn. Sp. Pl. (Tsjerou-ponna, Rheed, Mal. 4. p. 81. Tab. 39. Rai. Hiſt. 1537.) "Leaves egg-ſhaped; fruit inverſely egg-ſhaped, very red." *Leaves* only half as large as thoſe of the preceding ſpecies, more finely veined, not inverſely egg-ſhaped. *Fruit* a little elongated, reſembling that of the cornus mas, or cornelian cherry. It is eaten by the natives, and an oil is expreſſed from the kernel, which ſerves for lamps. A native of the Eaſt Indies. 3. C. *acuminatum*, La Marck, Enc. (Bintangor ſylveſtris, Rumph. Amb. 2. p. 26. Tab. 72?) "Leaves oblong-egg-ſhaped, acute; fruit egg-ſhaped, acuminate." It differs from the two preceding in the ſhape of the fruit, and of its leaves, which are alſo leſs ſmooth, and leſs finely veined. A native of Java, and the Molucca Iſlands.

Calophyllum *foliis tripedalibus*, Brown, Jam. 245. See Grias *cauliflora*.

Calophyllum *nagaſſarium*, Burm. ind. 121. See Mesua *ferrea*.

CALOPINACO, in *Geography*, a ſmall river of Naples, in Farther Calabria.

CALOPUS, in *Entomology*, a genus of Coleoptera, having filiform antennæ; feelers four, the anterior pair clavated, and thoſe behind filiform; thorax gibbous; wing-caſes linear.

This is one of the new Fabrician genera, including three ſpecies of the Linnæan cerambyces, ſerraticornis, hiſpicornis, and pygmæus, which ſee reſpectively.

CALOR, in *Ancient Geography*, *Calore*, a river of Italy, in Samnium, which roſe in the mountains of the Hirpini, paſſed Beneventum, and diſcharged itſelf into the Vulturnus.—Alſo, a river of Italy, in the country of the Picentini, probably between Tanager and Silurus.

CALORIC, a name originally given by the authors of the new French Chemical Nomenclature, to that ſubſtance by whoſe influence the phenomena of heat are produced, and which had before been diſtinguiſhed by the terms *igneous fluid*, *matter of heat*, and other analogous denominations.

There are perhaps few ſubjects reſpecting which a more remarkable verſatility of general opinion has been evinced, than with regard to the exiſtence or non-exiſtence of this principle. Are the phyſical effects of heat produced by the operation of a material fluid *ſui generis*, or is heat merely an affection of matter, conſiſting in internal vibrations and colliſions of its particles, or in ſome other mode of corpuſcular action of which we are ignorant;—and is there conſequently no ſuch thing as caloric?

Zeno, it appears, conceived that heat was material. We have a curious diſſertation on this ſubject in Cicero's book, "De Naturâ Deorum," conſiſting of a dialogue between an epicurean, a platonic, and a ſtoic, reſpecting the Supreme Power, which the latter ſuppoſes to reſide principally in the ſun; and it is remarkable that the author has made him ſpeak of the materiality and nature of heat very nearly as we do at the preſent day. "That heat is combined with water," he ſays, "its liquefaction itſelf ſufficiently proves, nor can it either freeze or congeal into ſnow or hoar-froſt without ſuffering that heat to eſcape." * * * * "Even the air, however cold it may be, is by no means devoid of heat; indeed it is combined with a great deal of heat;" and more to this effect.

This indeed appears to have been the moſt general notion reſpecting this part of the ſubject till about the time of Lord Chancellor Bacon, who in his treatiſe "De Formâ Calidi" conſiders heat as the effect of an inteſtine motion or mutual colliſion of the particles of the body heated; an expanſive undulatory motion in the minute particles of the body, by which they tend with ſome rapidity towards the circumference, and at the ſame time incline a little upwards;" which idea was alſo with ſome modification adopted by Deſcartes, Newton, Boyle, and the other mechanical philoſophers of that and the ſucceeding age. The chemiſts, however, whoſe opinions, at leaſt, poſſeſs that degree of authority which ariſes from their being moſt uſed to the obſervation of the effects of this agent, ſeem to have ſtill retained a ſtrong notion of the materiality of heat, which, in conſequence of our improvement in chemical ſcience, again became general, and continued ſo till the experiments of Count Rumford, which appeared to ſhew that it was imponderable and capable of being produced ad infinitum, from a finite quantity of matter, again threw ſome doubt on this queſtion.

It is known that when water freezes, a portion of heat is given out by it during the congelation, which is ſo conſiderable, that if we were to conceive it to be tranſmitted to and imbibed by an equal quantity of water at the temperature of 32° of Fahrenheit's thermometer, the latter would be heated no leſs than 140°, or to 172°. If, therefore, heat were a ponderable ſubſtance, it might be imagined that a given quantity of water would become lighter when frozen in a veſſel hermetically ſealed. Count Rumford accordingly made this experiment with great care by the help of a balance of extreme accuracy; but the reſult was, that the ice produced appeared to be of preciſely the ſame weight as the water had originally been of at the temperature of 61°, viz. 4214,28 grains; from which he infers, that all attempts to diſcover any effect of heat on the apparent weights of bodies will be fruitleſs.

The other deduction, of the poſſibility of producing an inexhauſtible ſupply of heat from a given quantity of matter, was made from the following experiment. The Count cauſed a cylinder of braſs to be turned $7\frac{3}{4}$ inches in diameter, and 9.8 inches long, which was bored like a cannon with a calibre 3.7 inches in diameter, and 7.2 deep, ſo that the bottom was 2.6 inches in thickneſs. The hollow cylinder contained $385\frac{3}{4}$ cubic inches of braſs, and weighed 113.13 lbs. avoirdupoiſe. By means of the engine uſed for boring cannon in the arſenal of Munich, a blunt borer or flat-piece of hardened ſteel, 4 inches long, 0.63 inch thick and $3\frac{1}{2}$ inches wide, was kept with one of its extremities, whoſe area was about $2\frac{1}{3}$ ſquare inches, preſſed againſt the bottom of this hollow cylinder on the inſide with a force of about 10000 lbs. avoirdupoiſe, whilſt the latter was turned about its axis with a velocity of 32 revolutions in a minute. The cylinder was in one experiment covered on the outſide with a coating of thick flannel to prevent the acceſs of heat from the atmoſphere; in another the borer was made to work through a collar of leathers ſo as to prevent the acceſs of air alſo to the interior of the bore; in a third, the whole cylinder was immerſed in water, the borer ſtill working through a collar of leathers ſo as to prevent its acceſs to the interior of the bore; in a fourth; the collar of leathers was removed, and the water had acceſs to the bottom of the interior of the cylinder where the friction took place. The reſult was, that in all theſe caſes heat was generated by the friction in ſufficient quantity to cauſe about $26\frac{1}{2}$ lbs. of ice-cold water to boil in two hours and a half, or at about the ſame rate as that at which it would have been produced by 9 large wax candles; the capacity of the braſs for heat, or its power of producing it by friction, did not appear to be diminiſhed, and it ſeemed as if this generation of heat would have gone on for ever if the friction had been continued: the ſource was inexhauſtible. Now, as any thing which an inſulated body or ſyſtem of bodies can continue to ſupply without limitation cannot poſſibly be a material ſubſtance, the Count's inference is, that heat is not of this deſcription, but that it muſt be an effect ariſing from ſome ſpecies of corpuſcular action amongſt the conſtituent particles of the body.

We will confeſs, however, that we conceive neither of theſe experiments nor any other with which we are at preſent acquainted to be concluſive in favour of the immateriality of caloric. Omitting the queſtion, whether gravitation is eſſential to matter, we may obſerve that there may be an indefinite ſeries of material ſubſtances, each a million of times rarer than the preceding, of which, though the weight of the heavieſt be imperceptible by our niceſt balances, the lighteſt may ſtill be ponderable. Any inſtruments which we at preſent poſſeſs would ſcarcely enable us to detect the weight of a fluid which was only a thouſand times lighter than atmoſpheric air.

The other experiment affords an argument againſt the materiality of this principle, to which it is perhaps ſomewhat more difficult to give a diſtinct and deciſive anſwer; and yet, notwithſtanding the precautions which were taken, it is by no means demonſtrative, that the heat which was evolved was not derived ab extero, for there is no abſurdity in ſuppoſing, that a body may be receiving caloric in one ſtate or at one part of it, and giving it out in another. We have an inſtance of the ſimultaneous attraction and emiſſion of a ſubtle fluid, the materiality of which is admitted by every one, in the caſe of an excited electric, which at the ſame time receives the fluid from the rubber, and communicates it to the conductor. In Count Rumford's experiment we muſt recollect, that the whole apparatus was immerſed in a great bath of caloric, the atmoſphere.

With regard to this part of our ſubject, we ought alſo not to omit, that in another experiment of the ſame author, *heat was found to be communicated through a Torricellian vacuum.* Now it is manifeſt, that in ſuch a vacuum there could be nothing to communicate or propagate *motion.* Heat therefore muſt be material: the concluſion is almoſt phyſically certain.

Without further inſiſting, however, that we can concluſively demonſtrate the exiſtence of caloric, it at leaſt appears upon the whole, that, in the preſent ſtate of our knowledge, we ought rather to conſider it as a material ſubſtance, becauſe of the two theories, that which ſuppoſes it to be ſo is infinitely the moſt intelligible, the moſt agreeable to the analogy of nature, and the leaſt exceptionable; and we ſhall accordingly regard it as an elaſtic fluid ſui generis, capable of pervading with various degrees of facility, all the ſolid bodies with which we are acquainted, and of being imbibed and retained by them in different proportions according to their reſpective degrees of ſpecific attraction or capacity for it. See CAPACITY.

It will eaſily be conceived that from the elaſticity and power of pervading other ſubſtances, which we have attributed to this fluid, it muſt neceſſarily follow, that whenever a body is by any means charged with a larger quantity of it than is proportional to its maſs and capacity, when compared with thoſe of other bodies in its vicinity, the ſurplus will be communicated to thoſe other bodies, until the denſity of the fluid in every body in the ſyſtem becomes equal; in like manner as a quantity of air thrown into one of a number of veſſels communicating with each other will paſs from it to the others, until it becomes diſtributed amongſt the whole of them in proportion to their reſpective capacities, or till it becomes of equal denſity in all of them. This ſtate of denſity or compreſſion of the caloric, contained in a body, conſtitutes what is called its *temperature*; ſee this article.

The celerity and facility with which this fluid pervades different ſubſtances are however extremely various, as may be ſhewn by the following experiment. Take a ſmall cylindrical earthen or wooden veſſel, between three and four inches in diameter, and inſert into it, through holes drilled in its bottom for that purpoſe, ſeveral wires, about an eighth of an inch in diameter, and ſix or ſeven inches long, of equal ſize in every reſpect, but of different metals, as gold, ſilver, copper, iron, braſs, and zinc; and alſo two ſmall rods, one of glaſs and the other of wood, of equal dimenſions with the wires, ſo that they may each of them project about half an inch on the inſide of the veſſel, the reſt of them being on the outſide, and forming a kind of ſtand for it. Dip a portion of the inferior extremities of theſe wires and rods into melted wax, ſo that they may become equally coated with it. When the wax has cooled, fill the veſſel with a heated fluid, as boiling water or melted lead, and obſerve the intervals between the time of filling it and the melting of the wax, which intervals will indicate the relative conducting power of the ſubſtances. Dr. Ingenhouſz tried this experiment, though in a ſomewhat different manner, with wires of ſilver, copper, gold, tin, iron, ſteel, and lead, whoſe conducting powers he conceived to be in the order in which we have enumerated them, though he found ſome differences in the reſults, except with regard to the ſilver and lead, of which the former always appeared to be the beſt, and the latter the worſt conductor. In the experiment which we have deſcribed it will be found, that the conducting powers of glaſs and wood are almoſt infinitely ſmaller than thoſe of any of the metals which are the beſt conductors known. Fluids of every kind are almoſt perfect non-conductors; and light ſpongy ſubſtances, or ſuch as contain fluids in their interſtices, conduct heat with great ſlowneſs and difficulty.

This difference in the conducting powers of various ſubſtances is the ſource of many practical conveniences and inconveniences. The cellular texture of organized ſubſtances enables them to withſtand the effects of change of temperature in the atmoſphere, by reſiſting the paſſage of this fluid, and the wooden handle of a tea-pot, and the cloth made uſe of for handling hot irons, are familiar examples of the economical application of this property. An iron door to a furnace will be red hot before the furnace itſelf, if of any earthy compoſition, is heated in any conſiderable degree. Large iron bars or cylinders are made to paſs from the fire for the purpoſe of communicating heat to thoſe ovens which are conſtructed at the ſide of kitchen-ranges, and a poker put into a low fire improves it by promoting a ſimilar communication amongſt the different portions of the fuel through which it paſſes.

We will, in the next place, conſider very ſhortly the effects ariſing from the condenſation or rarefaction of this fluid in bodies. By the former their temperature is elevated, or they are heated; by the latter it is depreſſed, or they become cooled.

In our inveſtigation of the moſt univerſal operations of nature we generally find that the more immediate inſtruments employed for the production of the effects which we perceive are two counteracting powers, by whoſe co-operation and mutual counterpoiſe the neceſſary equilibrium is preſerved, and the purpoſes of their creation effected with greater regularity than would probably reſult from the employment of a ſingle agent. Thus, gravity is, as we know, counteracted by inertia, that tendency which all bodies have to continue in a ſtate of rectilinear motion, when once they are thrown into it by the impulſe of force. The effects of coheſion, a no leſs univerſal principle than gravity, are in like manner reſtrained and modified by the agency of caloric; and, as without inertia all the celeſtial bodies would be drawn together into ſome one part of extended ſpace, ſo, without heat all the matter in the univerſe would become a congealed and concrete maſs; and fluidity, organization, vegetation, and life could have no exiſtence. Solids become firſt expanded, and then liquified by its influence, and liquids aſſume the aëriform ſtate. It is eſſential to the idea of a ſolid body, that it ſhould in a certain degree reſiſt both compreſſion and dilatation, that is, that its particles ſhould repel each other when brought nearer together, and attract each other when farther ſeparated within certain limits, and it is incontrovertible, that they can only remain in a quieſcent ſtate by the equilibrium of theſe oppoſite forces. The latter of theſe conſtitutes coheſion, and the exiſtence of the former is, perhaps, attributable to the ſubſtance of which we are now ſpeaking. Be this as it may, it is at leaſt a fact, that the repulſive energies of theſe corpuſcles are increaſed, and the ſphere of action enlarged by its influence, for the body becomes expanded; that is, this equilibrium no longer takes place, unleſs its moleculæ are removed farther from each other than when it was at a lower temperature. Elevate its temperature ſtill farther, and the body fuſes; that is, the attractive power of its particles becomes annihilated or wholly counteracted, and they are only kept together like a quantity of ſhot by the action of gravity, operating independently on each. Increaſe ſtill the action of heat on the body, and the ſphere of repulſion of its particles, or the diſtance, to which this power operates, again becomes much farther extended, perhaps infinitely ſo; it is now ſufficient to overpower the action of gravity, and the body becomes reſolved into an elaſtic fluid. We know of no ſubſtance which is capable of reſiſting the power of this univerſal ſolvent. Gold itſelf may be expanded into vapour by the action of heat, and as theſe effects are always producible by the ſame cauſe, ſo is it, at leaſt, probable, that the converſe of this is alſo true; that whenever a ſubſtance is formed in a ſtate of fluidity it is attributable ſolely to this cauſe, and that the abſtraction of the caloric, by which it is holden in ſolution, would again reduce it to a ſolid. Mercury is, we know, capable of congelation, and the atmoſphere itſelf would probably become a concrete, if we could deprive it of all or the greater part of its heat. We have therefore arrived at a very diſtinctive and appropriate definition of caloric; that it is that ſubſtance or affection of matter which is the cauſe of fluidity in all or the greater part of the bodies which we meet with in that ſtate.

Several writers on this ſubject appear to us to have involved it in no inconſiderable degree of obſcurity, by an unwarrantable diſtinction between *latent* and *free* or *ſenſible* caloric. There ſeems to be no ſuch diſtinction in nature: caloric is always ſenſible and never latent. The proportion of it in any body is always ſufficiently indicated either by its temperature or its ſtate with regard to the counterpoiſe of thoſe attractive and repulſive powers of which we have been ſpeaking, and no change can take place in that proportion without its occaſioning a concomitant change in one or the other of theſe affections.

We have thus traced the outlines of that part of the doctine of heat which relates to the exiſtence of this fluid, and which we conceived to belong to the preſent article; fuller details of the effects of this powerful agent, and the other parts of the theory connected with them, will be found under Heat, and the other articles to which we have already referred.

CALORIMETER. See Heat.

CALOS, in *Geography*, a bay on the W. coaſt of the peninſula of E. Florida, in which are excellent fiſhing banks and grounds. At a ſmall diſtance is a conſiderable town of the Seminole Indians.

CALOTES, in *Zoology*, a ſpecies of Lacerta, with a round long tail, and the fore part of the back, and hinder part of the head dentated. Gmelin. This is the iguana calotes of Laur. Amph. Its body is ceruleous, with acute ſcales beneath, and lanceolated ſpines on the back. Found in Aſia, particularly in the iſland of Ceylon.

CALOTO, in *Geography*, a town and department belonging to the juriſdiction of Popayan in South America. The extent of this department is conſiderable; it is alſo rich, and abounds in the products of the earth; the ſoil being fertile, and the country every where interſperſed with farms. But of all the parts in this juriſdiction, it is the moſt ſubject to tempeſts of thunder and lightning. This has brought into vogue "Caloto bells," which are uſed under a perſuaſion that they have a ſpecial virtue againſt lightning; and of which we have the following account. The town of Caloto, the territory of which contains a great number of Indians, of a nation called "Paezes," was formerly very large; but theſe Indians, ſuddenly aſſaulting it, forced their way into it, ſet fire to the houſes, and maſſacred the inhabitants. Among the ſlain, was the prieſt of the pariſh, who was the particular object of their rage, becauſe he expoſed the folly and wickedneſs of their idolatry, and the turpitude of their vices; nor did the bell of the church eſcape their rancour, as by its ſound it reminded them of the hours for receiving religious inſtruction. After many fruitleſs endeavours to break it, they determined to bury it under ground, that they might not any more be reminded of their duty, and abridged of their liberty. On the news of their revolt, the Spaniards, in the neighbourhood of Caloto, took arms, and having avenged themſelves of the inſurgents in a battle, they rebuilt the town, and having taken up the bell, placed it in the ſteeple of the new church; ſince which event, the inhabitants, to their great aſtoniſhment and joy, obſerved, that when a tempeſt appeared to be blowing in the air, the tolling of the bell diſperſed it. The news of this imagined miracle induced many perſons to ſolicit pieces of it to make clappers for little bells, in order to enjoy the benefit of its virtue, which, in a country peculiarly ſubject to tempeſts was deemed highly advantageous. To this circumſtance Caloto owes its reputation for bells. Adams's Voyage to South America by Juan and Ulloa, vol. i. p. 342.

CALOTTE, a cap, or coif of hair, ſattin, or other ſtuff; uſed firſt for neceſſity, but now become an eccleſiaſtical ornament in France.

It was firſt worn by cardinal Richlieu: the red calotte is a badge of a cardinal.

Calotte, in *Architecture*, a round cavity, or depreſſure, in form of a cup, or cap, lathed and plaiſtered, uſed to diminiſh the riſe, or elevation of a chapel, cabinet, alcove, &c. which, without ſuch an expedient, would be too high for other parts of the pile.

CALOUDE, in *Geography*, a town of Hindooſtan, in the ſoubah of Dowlatabad; four miles W. of Carballa, and 210 N.W. of Hydrabad.

CALOVIUS, Abraham, in *Biography*, a Lutheran divine, was born in 1612, at Morungen, in the duchy of Brunſwick, and became doctor in theology at Roſtock, in 1637, and theological profeſſor in that univerſity. In 1643, he was made rector of the college at Dantzick: and in 1650, profeſſor of theology at Wittenberg. He was the moſt rigid divine of his party, and diſtinguiſhed himſelf on a variety of occaſions by his diſputes with the reformed miniſters, and particularly with Calixtus, of whom an account is given under the article Calixtins. Such was the part he took in this controverſy, that thoſe who enliſted under his banner were denominated "Calovians." He exerciſed the office of ſuperintendant-general of the Lutheran churches, and continued his controverſial warfare till his death in 1686. His works were numerous; they were chiefly polemical, and are now forgotten. Moreri. Moſheim, E. H. vol. v.

CALP, in *Mineralogy*, a black quarry ſtone of Dublin, a ſpecies of baſalt, found in large maſſes, of a bluiſh black, or dark-greyiſh blue colour, variouſly interſected with veins, of white calcareous ſpar, and often inveſted with the ſame. In the direction of its ſtrata it eaſily ſplits into large flags. Sp. gr. from 2.646 to 2.70. It efferveſces with mineral acids; and at 130° melts into a black compact glaſs; contains 50 per cent. mild calx, the remainder being ſilex, argil, and iron. This mineral ſeems to be the calcareous trap of Laſius, Hartz. 170. Kirwan's El. of Min. vol. i. p. 233.

CALPAS, in *Ancient Geography*, a river of Aſia Minor in Bythynia, at a ſmall diſtance W. of Sangarius. Strabo and Ptolemy.

Calpas, or Calpe, a ſea-port of Aſia Minor, in the Euxine ſea, between Heraclea, and Byzantium in Bithynia.

CALPE, a mountain of Spain, in that part of Bœtica which is now called Andaluſia, oppoſite to that in Africa which bore the name of Abyla, and one of thoſe which were called the "Columns of Hercules." At the foot of this mountain, towards the ſea, ſtands Gibraltar. Calpe is ſtyled by Strabo, a famous ancient Spaniſh ſea-port; whereas, Pliny, Ptolemy, Mela, and others, only call it a mountain: whence the learned Bochart and Caſaubon have thought, that the Calpe of Strabo was inſerted, by the miſtake of ſome tranſcriber, for Carteia. But it has been inferred by ſome learned perſons, from an inſcription on a medal, with theſe letters, C. I. Calpe, and "Colonia Julia Calpe," that Strabo's text is correct; and they further allege, that Octavius overtook Cæſar near the city of Calpia, which is the ſame with Calpe. We may therefore conclude, either that there were ſeveral cities ſituate at the mouth of the ſtrait, on account of its advantageous ſituation, one of which was called Calpe, or Calpia; or elſe that the Carteia, which was ſituate near the promontory of Calpe, had likewiſe taken that name from it.

Calpe, in *Grecian Antiquity*, a race performed by mares, which conſtituted one of the Olympic games. This race was inſtituted in the 71ſt Olympiad, and, together with the "Apené," aboliſhed in the 84th. In this race, the riders were accuſtomed, like the Anabatæ, to leap from the backs of the mares towards the laſt ſtage or period of the courſe; and laying hold of the bridles, they finiſhed the race in that manner. Weſt's Pindar, vol. iii. p. 143.

CALPENTEEN, in *Geography*, an iſland in the Indian ſea, near the weſt coaſt of the iſland of Ceylon, about 40 miles long and ſix broad. N. lat. 8° E. long. 79° 50'.—Alſo, a town of Ceylon, oppoſite to this iſland. N. lat. 8° 15'. E. long. 79° 50'. Percival, in his "Account of the Iſland of Ceylon," (p. 107.) informs us, that a company or two of Malays is ſtationed here, and that when he left the iſland, it was commanded by a Dutch officer, who had entered into the Engliſh ſervice, and who received this appointment from governor North. This, he adds, is one of the beſt places on the whole iſland for game; and between this and Putallom, at a ſmall diſtance, the coaſt is remarkable for its ſalt-pans, which are formed by an arm of the ſea, which overflows part of the country between theſe two places. The Dutch manufactured on this part of the iſland a large quantity of ſalt, which they conſidered as very important to their intereſts, and the moſt formidable weapon which it was in their power to employ againſt the native king, who could not procure any ſalt but by their means. Since the Engliſh took poſſeſſion of the iſland, this manufacture has been almoſt wholly neglected. It is capable, however, of being rendered very profitable, as it is the only one of the kind on this ſide of the iſland, and the moſt conveniently ſituated for ſupplying the king of Candy's dominions.

CALPENY, one of the Laccadive iſlands, in the Indian Sea. N. lat. 10° 5'. E. long. 73° 29'.

CALPOLALPAN, a mountain in New Mexico, which abounds with quarries of jaſper and marble of different colours.

CALPRENDE, Gautier de Costes, in *Biography*, a reſpectable writer of romances, was born in the dioceſe of Cahors, and educated at Toulouſe. In 1632, he entered into the regiment of guards at Paris, obtained a penſion from the queen, and became gentleman in ordinary of the king's bedchamber. The firſt pieces by which he made himſelf known as a writer, were compoſed for the theatre, and his "Mithridates" appeared in 1635. He was, however, chiefly diſtinguiſhed by his romances, in the compoſition of which he has the merit of invention. Theſe were his "Caſſandra," "Cleopatra," and "Pharamond," each conſiſting of 10 or 12 large volumes in 8vo., which by their novelty, and the variety of adventures contained in them, attracted attention for ſome time, but gradually ſunk by their prolixity into oblivion. He alſo wrote tragedies, the beſt of which is his "Earl of Eſſex," from which Boyer copied ſome ſcenes in his tragedy of the ſame title. His character was reſpectable, and he was employed in ſome foreign negotiations. His death was occaſioned by an accident in Auguſt 1663. Nouv. Dict. Hiſt.

CALPURNIAN *Law*, in *Roman Antiquity*, a law propoſed by L. Calpurnius Piſo, tribune of the people, in the beginning of the third Punic war, during the conſulſhip of L. Marcius Cenſorinus, and M. Manilius, A. U. 604; and wiſely deſigned to reſtrain the avarice and injuſtice of the Roman magiſtrates, by which the ſtates, whom the governors of provinces had oppreſſed and plundered, were authorized to apply to the judges for reſtitution of what had been unjuſtly taken from them: hence called "de pecuniis repetundis." In conſequence of this law, the tribune Calpurnius probably acquired the honourable ſurname of "Frugi," or honeſt man.

CALPURNIANA, in *Ancient Geography*, a town of Spain, placed by Ptolemy in Bœtica, in the territory of the Turduli, and mentioned in the Itinerary of Antonine.

CALPURNIUS, or Calphurnius, Titus, in *Biography*, a Latin Sicilian poet, who lived about the latter part of the third century, under the emperors Carus, Carinus, and Numerianus. Seven of his eclogues are extant; the firſt of which was compoſed on the acceſſion of the emperor Carus, in which we may peruſe, with pleaſure and contempt, the effuſions of congratulation and flattery. Two ſhepherds, avoiding the noon-tide heat, retire into the cave of Faunus. On a ſpreading beech they diſcover ſome recent characters. The rural deity had deſcribed, in prophetic verſes, the felicity promiſed to the empire, under the reign of ſo great a prince. Faunus hails the approach of that hero, who, receiving on his ſhoulders the ſinking weight of the Roman world, ſhall extinguiſh war and faction, and once again reſtore the innocence and ſecurity of the golden age. The deſign of this eclogue is preferred by Fontenelle to that of Virgil's Pollio. But notwithſtanding ſome agreeable deſcription of rural objects, which marks theſe eclogues, they manifeſt the declining taſte of the age by a want of purity in the ſtyle, and of nature in the ſentiments. Editions of them have been given by Barthius, Hanov. 8vo. 1613; in the "Poetæ Rei Venat." Leyd. 1728, 4to.; and in the "Poetæ Latini minores," Leyd. 1731, 4to. Voſſ. Poet. Lat. Nouv. Dict. Hiſt. Gibbon's Hiſt. vol. ii. p. 93.

CALPI, in *Geography*, a town of Hindooſtan, in the country of Agra, ſeated on the ſouth bank of the Jumnah river; 98 miles S. W. from Lucknow; 115 N. W. from Allahabad; 160 S. E. of Agra; 239 miles N. W. of Benares; 277 S. E. from Delhi; 821 N. E. of Bombay; 804 N. W. from Calcutta by Moorſhedabad; 715 nearly N. from Hydrabad. N. lat. 26° 7' 15". E. long. 80° 4'.

CALQUING, or Calking, a term in *Painting*, &c. uſed where the backſide of any deſign is covered with black-lead, or red chalk; and the ſtrokes or lines traced through on a wax plate, wall, or other matter: by paſſing lightly over each ſtroke of the deſign with a point, which leaves an impreſſion of the colour on the plate or wall. This method of *off-tracing* may likewiſe be performed by pricking the original print, or drawing, and tranſmitting coloured powder through the punctured holes, in order to mark the outlines of a new ground; or, by diſſolving part of the printing ink by means of ſoap, and impreſſing it in that ſtate on a freſh ground. See Designing.

CALTAGE'RONE, in *Geography*, See Calatagirone.

CALTARO, a town of Dalmatia, in the republic of Raguſa; 24 miles N. of Raguſa.

CALTHA, in *Botany*, (ſuppoſed to be derived from καλαθος, a baſket, alluding to the ſhape of the flower). Linn. gen. 703. Schreb. 957. Willd. 1090. Gært. 691. Juſſ. 234. (Populago, Tourn.) Claſs and order *polyandria, polygynia*. Nat. ord. *Multiſiliquæ*, Linn. *Ranunculaceæ*, Juſſ.

Gen. Ch. *Cal.* none. *Corol*: Petals five or more, egg-ſhaped, flat, ſpreading, deciduous. *Stam.* Filaments numerous, thread-ſhaped, ſhorter than the corolla; anthers erect, obtuſe, compreſſed. *Piſt.* germs ſuperior, from four to fifteen or ſixteen, erect, oblong, compreſſed; ſtyle none, ſtigmas ſimple. *Peric.* Capſules ſhort, acuminate, ſpreading, opening at the upper or inner ſuture. *Seeds* numerous, oblong, egg-ſhaped, ſmooth, affixed to the upper ſuture in a double row.

Eſſ. Char. *Calyx* none. *Petals* five or more. *Nectaries* none. *Capſules* ſeveral, many-ſeeded.

Sp. 1. C. *paluſtris*, Linn. Sp. Curt. Flor. Lond. faſc. 1. Tab. 40. Eng. Bot. 506. Flor. Dan. 668. Gært. Tab. 118. Lam. Ill. Pl. 500. Marſh marigold, or meadow-bowts; in Yorkſhire, water-blobs. "Stem, erect; flowers yellow, large." Poiret in Encyc. *Root* perennial, fibrous. *Stem* a foot and a half high, hollow, a little branched, leafy, roundiſh, furrowed. *Leaves* between heart and kidney-ſhaped, acutely ſcolloped, veined, ſmooth, of a deep ſhining green; root-leaves on long, hollow, ſemi-cylindrical petioles, ſometimes entire; the others alternate, and nearly ſeſſile. *Stipules* brown, membranous, withering. *Flowers* in all their parts of a golden hue, axillary, ſolitary, on ſimple peduncles; the inner row of filaments with broad anthers; the outer twice as long, club-ſhaped with compreſſed anthers. The young buds are pickled as a ſubſtitute for capers, which they greatly reſemble in form, and according to Dr. Smith, perhaps equal in merit; for both are acrid and only rendered eatable by the acid pickle. The true caper buds are eaſily diſtinguiſhed by their ſimple germ. There is a double variety frequent in gardens; but the flower in its ſingle form is larger, and, as Dr. Smith juſtly obſerves, to the admirer of genuine nature, much more beautiful. Its only advantage is that it is more durable. The juice of the petals, boiled with alum, ſtains paper yellow. A native of England and of all the northern parts of Europe, Aſia, and America. 2. C. *natans*, Willd. Poiret in Encyc. vol. v. p. 568. Gmel. Sibir. 4. p. 192. Tab. 82. "Stem procumbent, floating; flowers ſmaller, white, red at the edge." Poiret. It agrees in general habit with the preceding ſpecies, but is leſs in all its parts. *Capſules* triangular. Perennial. Found by Gmelin and Pallas in Siberia.

Caltha *alpina*, Tabern. ic. 336. See Arnica *montana*.

Caltha, Burm. Zeyl. Tab. 22. fig. 1. See Verbesina *calendulacea*.

Caltha *officinalis*, Scop.; arvenſis, C. Bauh.; minima, J. Baugh. See Calendula *arvenſis*.

Caltha *vulgaris*, C. Bauh. See Calendula *officinalis*.

Caltha *maritima*, Tourn. inſt. 499. See Calendula *incana*.

Caltha *africana*, *flore extus ferrugineo*, Moriſ. hiſt. 3. Tab. 3. fig. 8. See Calendula *pluvialis*.

Caltha *ſemine majore oblongo*, Breyn. Tab. 14. fig. 2. See Calendula *hybrida*.

Caltha *ſemine plano cordato*, Boerhav. Lugd. See Calendula *nudicaulis*.

Caltha *foliis croci anguſtis*, Boerhav. Lugd. See Calendula *graminifolia*.

CALTHÆ, in *Entomology*, the ſpecies of Chermes that feeds on the flowers of the caltha paluſtris, whence its name. *Linn. Fn. Suec.*

Obſ. The antennæ are black at the tip; thorax rufous with three black curves; wings white with yellowiſh veins, and a brown dot.

CALTHELLA, a ſpecies of Phalæna, in the Tinea family, the anterior wings of which are entirely golden; and the head ferruginous. *Linn. Fn. Suec.* Frequent in Europe, on the flowers of caltha paluſtris. Its ſize is ſmall. This is tinea rufimetalla of the Vienna catalogue.

CALTIORISSA, in *Ancient Geography*, a town of Aſia, in Leſſer Armenia, according to Ptolemy, marked in the Itinerary of Antonine on the route between Nicopolis and Satala.

CALTROP, or Calthrop, in *Military Language*, an inſtrument with four iron points, each three or four inches long, diſpoſed triangular-wiſe; ſo that there are always three points bearing on the earth, the fourth being in the air. Several of theſe, fixed in the ground, or thrown into breaches where the cavalry is to paſs, ſtick into the horſes feet and embarraſs them.

An inſtrument of this kind with three iron ſpikes is uſed in Siberia, &c. in hunting the wolf.

CALTROPS, in *Botany*. See Tribulus.

Caltrops, *water*. See Trapa.

CALTURA, in *Geography*, a fortreſs of the iſland of Ceylon, at the mouth of a river, which is one of the largeſt branches of the Muliwaddy, and is here about a mile broad. It waſhes two ſides of the fort which commands it, and is navigable by boats to the ſea. The eminence on which the fort ſtands overhangs the river, and commands an extenſive and moſt picturesque proſpect. This fort from its ſituation is capable of being rendered a very ſtrong poſt. The commanding officer preſides in the court of juſtice, and determines all diſputes among the peaſants. The ſea, the eſplanade, and the village on the outſide of the fort, as well as the beautiful ſurrounding country, render Caltura a very delightful ſcene. Some tracts of cinnamon are ſcattered up and down in the vicinity of it: and a little way ſouth of it is the termination of that fertile diſtrict of Columbo which contains ſo great a proportion of the wealth of Ceylon. About ten miles from Caltura is a temple of "Buddou," built on a flat ſpace, cut out of a ſmall hill. It is a ſmall ſquare building, conſtructed of brick, with a ſloping tiled roof, and a gallery ſurrounding it. In an apartment of this temple, the image of the Deity, about 12 feet long, lay reclining on his ſide, with his right hand under his head: the place was illuminated with lamps, and flowers in abundance were ſpread around. The walls were daubed with ſtreaks of red, black, and white paint; and on them were marked ſome Cingleſe characters. Near the temple were a few huts for the prieſts. The country about Caltura abounds with game, and certain native manufactures are carried on to a conſiderable extent around it. A great quantity of arrack is made from the groves of cocoa-trees, which extend ſeveral miles in every direction, forming from Columbo to Caltura, and ſeveral miles beyond it, one continued grove. Here is alſo a large plantation of ſugar-canes, and a diſtillery of rum is carried on by ſome Dutchmen who reſide in the village and neighbourhood; but this rum is much inferior in quality to that of the Weſt Indies. Six miles onward from Caltura lies "Barbareen," a ſmall village, with a ſort of harbour formed by a projection of land where the river runs into the ſea. This is almoſt the only place where the high ſurf and rocky ſhore on this coaſt allow ſhip-boats of European conſtruction to land. At Barbareen there is a conſiderable manufactory of cordage and cables from the cocoa-tree. Large quantities are ſent from hence to Columbo and Point de Galle, to ſupply the veſſels, which trade to theſe ports. A few miles further lies "Bentot," only remarkable for producing the beſt oyſters on the iſland, and almoſt the only ſpecies uſed on the iſland as food. Caltura is diſtant about 28 miles from Columbo. N. lat. 6° 34′. E. long. 79° 50′. Percival's Ceylon. See Columbo and Point de Galle.

CALVA Serpentis Diadema, in *Teſtaceology*, one of the ſynonyms of Chiton Punctatus, *Eph. Nat. Cur.* &c. See Punctatus.

CALVADOS, in *Geography*, a ridge of rocks, near the coaſt of France, 12 miles in length. N. lat. 49° 22′. W. long. 0° 51′ to 0° 32′.

Calvados, one of the five departments ſo called from the long ridge of rocks above-mentioned, formed of Normandy and the north part of Perche. It is bounded on the north by the Channel; on the eaſt by the department of Eure;

on the ſouth by that of Orne, and part of the department of the Channel, which alſo bounds it on the weſt. It extends from the mouth of the Seine eaſterly, to the river Vire weſterly, about 50 miles, and 30 miles from north to ſouth: its ſuperficies is about 1,117,643 ſquare acres, or 570,427 hectares: its population conſiſts of about 484,212 perſons; and it is divided into ſix communal diſtricts. Its capital is Caen.

CALVARIA, or Calva, the ſcalp, or upper part of the head; ſo called from its growing bald firſt. See Baldness. The external parts of the calva are the *ſinciput*, *occiput*, *vertex*, and temples; all inveſted with the hair, and the common integuments of the body.

The calvaria in adults conſiſts of eight bones, one of the forehead, another of the *occiput*, two of the *ſinciput*, two of the temples, and two others common alſo to the upper jaw, viz the *cuneiforme* and *ſpongioſum*.

CALVART, Denis, in *Biography*, a painter of hiſtory and landſcape, was born at Antwerp in 1555. He began with painting landſcapes; but as he wiſhed to adorn them with human figures; he determined to ſeek improvement for this purpoſe in Italy. In his way to Rome he ſtopped at Bologna, where he became the diſciple of Proſpero Fontana. During his reſidence in this city, he applied with diligence to the ſtudy of his art, and copied the works of Correggio and Parmigiano. He then accompanied Lorenzo Sabattani to Rome; and perfected himſelf in deſign, perſpective, architecture and anatomy. From Rome he returned to Bologna, where he opened an academy, which was much frequented, and which produced, beſides a number of other excellent artiſts, Guido, Albano, and Domenichino. He lived with his pupils on terms of eaſy familiarity, and took great pains in improving them; though his character was degraded by paſſion and avarice. His own works were ſimple in their deſign, correctly drawn, well diſpoſed, coloured in a grand ſtyle, and touched with freedom and elegance; but they are not altogether free from a Gothic air, which he brought from his own country. His principal performances are at Rome and Bologna; in the latter place there is a fine picture, repreſenting two hermits, which is correctly deſigned, beautifully coloured, and delicately pencilled; and in the Pembroke collection at Wilton, there is a nativity painted by this maſter. Some of his works have been engraved. Calvart died at Bologna in 1619. D'Argenville. Pilkington.

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